

# **Promoting critical reflection for academic professional development in higher education**

by

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## DEDICATION

*To my parents Jaime Fringe and Sofia dos Santos for illuminating me with their wisdom, to my wife, Esperança Vacelina Cossa, for providing me the support I needed during my transformational expedition and to my sons Vinicius Fringe Nhaduate, Jorge Fringe Junior, and Kayane Fringe Nhaduate whose birth and growth nurtures me daily.*

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## DECLARATION

I declare that “Promoting critical reflection for academic professional development in higher education” is my own work and that all sources were acknowledged.

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Signature

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Date

Student number 27353151



## ABSTRACT

Higher Education lecturers in Mozambique are witnessing a chain of transformations within this sub-system including expansion of institutions, diversity of offered courses, huge admission of students resulting in more diverse student populations and the need to introduce new methods of facilitating learning and research as response. These changes, along with the rapid increase of the body of knowledge, challenge lecturers to improve themselves as academics.

Contemporaneous models of professional development view this process as a constructive and situated endeavour, which should be practice-, problem-, value- and evidence-based and have reflection as its essential element. Having considered these aspects, I formulated the following research question: *How can we promote critical reflection on innovative practice contributing to professional development of academic staff in Mozambican Higher Education Institutions?*

In order to address this research question, I adopted action research complemented by a mixed-methods approach. Therefore I carried out a baseline study entailing the administration of semi-structured interviews and questionnaires on innovative practices of lecturers. This baseline study aimed at mapping the field concerning practices to promote professional development, employment of Learning Style Flexibility (LSF) and the adoption of tools for reflection by lecturers. LSF is an approach to facilitating learning drawn from the whole-brain model of Ned Herrmann. It calls for adopting strategies of facilitating learning associated with the entire brain, not relying solely on the promotion of left brain learning. I adopted action research to monitor my practice of facilitating learningshops as an experimental professional development intervention and animated mentoring sessions to support and assist lecturers' professional learning. Such professional learning consisted of lecturers implementing LSF within their practice of facilitating learning and monitoring this process by means of their small-scale action research. In this way I was putting into practice a synchronous model. As data collection techniques I employed the Herrmann Brain Dominance Instrument (HBDI), photography and audio- and video-recording of learningshops and mentoring sessions. Audio-recording the sessions I could collect the lecturers' reflections. Later on, I analysed such reflections as nested within the lecturers brain profiles, pursuing a model of Learning Style Flexible Reflection (LSFR).

Findings of the baseline study show the need to have a more organised and functional model of professional development in Mozambique, the need to explore the potential for scientific research through the adoption of a number of measures, as well as the need to promote lecturers' reflection, deepening the use of tools already being employed in the context. Apart from this, this baseline

information showed that the principles of LSF are not employed in a balanced and consistent manner since most lecturers indicated to facilitate student learning through strategies linked to the left brain.

The action research findings show that the learninghops that I promoted with my hybrid group appeared to be effective in promoting lecturers' critical reflection. In involving lecturers in this experimental professional development programme I promoted the possibility for them to account for what they were doing in their lecturing practice in a scholarly way. Therefore action research appeared to be the appropriate process to follow within the context of my mentorship. Moreover, action research proved to be the self-reflective inquiry lecturers can employ in pursuit of explanations for their transformative lecturing practices in the pursuit of ways to show that they are successfully working according to their values, and that their efforts are useful to improve their situations and institutions, since they are grounded within the idea of promoting reflection on one's practice. All these aspects were evident from the lecturers' case studies reported in this study.

One of the main findings of the study is that the analysis of lecturers' reflections, as nested within their brain profiles, and informed by the literature review, showed the emergence of LSFR, where lecturers could present different patterns of reflection associated with the different brain quadrants.

Key words:

Action research, constructivism, critical reflection, whole-brain model, learning style flexibility, peer mentoring, professional development, professional learning, transformative learning.



RESEARCH ETHICS COMMITTEE

**CLEARANCE CERTIFICATE**

**CLEARANCE NUMBER :**

HU 09/08/01

**DEGREE AND PROJECT**

PhD

Promoting critical reflection for academic professional development in higher education

**INVESTIGATOR(S)**

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Humanities Education

**DATE CONSIDERED**

15 August 2012

**DECISION OF THE COMMITTEE**

APPROVED

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#### TO WHOM IT MAY CONCERN

This is to certify that I, the undersigned, have edited the doctoral thesis titled *Promoting Critical Reflection for Academic Professional Development in Higher Education* by Jorge Jaime dos Santos Fringe for language and grammar errors.

The suggested changes have been indicated and communicated to the candidate. It is the candidate's responsibility to effect the changes electronically before printing the document to be handed in for assessment.

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PRETORIA

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## CHAPTER 1: Orientation to the Study

### 1.1 Statement of the innovative idea informed by my academic context

This thesis is an account of what I have done to promote the critical reflection of lecturers on their professional learning; my efforts are encapsulated by Learning Style Flexibility (De Boer, Steyn, & Du Toit, 2001, 2004; Du Toit, 2008; De Boer, Du Toit, Bothma, & Scheepers, 2012) and monitoring it by means of action research. Carrying out this study was a journey I embarked on and it was elicited by two sets of factors. On the one hand there are the personal experiences of my professional career as a junior lecturer and collaborator of the Centre for Academic Development (CAD) at the Eduardo Mondlane University (UEM) in Mozambique, and on the other the transformations I have observed occurring within the countrywide context of higher education (HE).

Giving a brief account of my biographical journey since I concluded my undergraduate studies appears to be relevant since it not only allows the reader to understand how I encountered problems and ideas that I try to put in place in this study, but it also sheds some light on how I came to be a facilitator of learning and mentor of my fellow lecturers. Upon the completion of my Bachelor's degree in Pedagogy and Psychology at the Pedagogical University (UP) in Mozambique, I was invited to join the University staff as junior assistant lecturer. I accepted the invitation and embarked on this venture with a mixture of pleasure and sense of luck, since different from many other Mozambican lecturers, I was entering the profession with some professional education qualification. Therefore the main advantage I had, compared to graduates from other higher education institutions that were invited to join the staff, is that I had been extensively exposed to courses such as foundations of pedagogy, pedagogical psychology, didactics and so forth. These courses assisted me in understanding the learning process and how to facilitate it. Therefore, apart from replicating good practice from my previous teachers, lecturers and from my mentor, my practice could be informed by the theories acquired throughout the course. But then, what about the fellow graduates from other HEIs (that are not pedagogical), who, according to Quinn (2003), had had little or no training for their role as teachers?

Two years later I joined the UEM, which was about to open its Faculty of Education. At UEM, despite having attended a pedagogical university like any other new lecturer, I had to attend two short courses, namely “Teaching Methods” and “Student Assessment” offered by the Centre for Academic Development (CAD). These courses aim at providing learning opportunities where the prospective lecturer can acquire theoretical knowledge about the teaching and learning processes in HE and can immediately apply these new concepts in the form of practical exercises, with sufficient time for discussion and interaction with colleagues and course facilitators (Mandlate, 2003). Although they are miniatures of the Postgraduate Certificate in Higher Education (PGCHE), these courses appear to have an impact, such as improving the new lecturers’ skills to plan, facilitate and assess their students’ learning; to improve their abilities to link theory and practice within their professional context, and to discuss cross-university issues (Butcher & Stoncel, 2012).

Later on I proceeded to pursue a Master’s degree programme at the University of Groningen in the Netherlands. This was an opportunity to develop my research skills and to deepen my knowledge on theory and practice of education. At the outset I got acquainted with the concept and theories of learning styles and approaches to learning. These are worth to consider if we aim to provide effective learning opportunities to our students. Upon my return I started to facilitate my students’ learning in a more independent fashion, although many times felt the need to get support from a more experienced fellow lecturer. In the meantime I realised the lack of opportunities to share teaching experiences, as it happened within the courses facilitated by the CAD, which I could not attend (and it did not offer any additional challenge). This fact, along with the few opportunities fellow lecturers and I had to attend workshops, conferences, seminars and other events, made me aware of the existence of a gap within the professional development of academics. This position has been sustained by the consideration that while most developmental challenges requiring discussion and sharing occur after the lecturer has experienced the intricacies of professional practice, short-courses such as these offered by the CAD appear to be more useful to orientate the novice (Beaty, 1998; Daley, 2000).

According to the Strategic Plan for HE Teachers’ Training (Ministério da Educação, 2009b), some of the problems within the Mozambican HE sub-sector include the weak financing capacity for activities such as research, dissemination and sharing information and

knowledge. This fact may explain the lack of opportunities to attend certain professional development events. Evans (2002) argues that academics' professional development incorporates learning in order to improve the efforts for facilitating learning. In connection with this Maynard and Furlong (1994) contend that if learning to teach is at the heart of professional development (training), then reflection, irrespective of its definition, must be part of the process. Therefore, to put it more strongly, Day (1993) indicates that although not sufficient, reflection is a sine qua non condition for professional development, since it plays a central role within this process. Since critical reflection is the core underpinning paradigm of professional learning (Clegg, Tan & Saeidi, 2002) I have formulated the following asset-based question: *How can I (we) promote critical reflection on innovative practice, contributing to the professional development of academic staff in Mozambican Higher Education Institutions?*

The centrality of reflection or professional development is acknowledged by many writers (Beaty, 1998; Clegg et al., 2002; Quinn, 2003; Smith, 2011; Savaya & Gardner, 2012) who further concede that professional development has critical reflection as its essential element, since it allows the lecturer to identify the 'why' of the occurrences, to question taken-for-granted actions and to assist in reducing the gap between the espoused theories and theories-in-use within his/her professional practice. Moreover, it is associated with its power for lecturers to transform each experience into meaningful learning (Wong, Kember, Chung & Yan, 1995). I find Angela Brew emphasizing the role of critical reflection when she states the following:

*The challenges faced by educators within twenty-first century higher education require academics to take a reflexive approach to solve the problems that they face in faculties, departments and in professional practice workplaces. Academics need to be willing and able to carry out critical analyses, systematic processes of inquiry of the social spaces in which they are situated. Such reflexivity applies to all who work, teach, research and learn within universities and academic workplaces. This is to engage in the scholarship of academic practice (2010: 112-113).*

As I mentioned at the beginning, the question above and thus the whole study was further triggered by the transformations I observed within the Mozambican context of HE. Such transformations, explained in more detail in the next section, include the following:

- The wave of university mushrooming, typified by the establishment of more HEIs and a great variety in the programmes or courses offered as a response to the demand for HE (Langa, 2006).
- Resulting from the massification there is diversification of the student population in terms of aspirations, socio-economic background, age and learning style (Brew, 2010; Ferman, 2002; Mario, Fry, Levey & Chilundo, 2003; Brito, Brouwer & Menezes, 2008).
- The introduction of new methods of facilitating learning and research, including the use of information technology to facilitate learning (Ferman, 2002; Mandlate, 2003).
- The introduction of a credit accumulation and transfer (CAT) system, which is expected to allow more transparency, flexibility and mobility within the Mozambican HEIs (Vossensteyn, Scott, Gillard, Mário, Matavele & Mlay, 2006; Ministério da Educação, 2010c).

These transformations occur at a time that Mozambican HE faces the pressure to increase courses' quality, relevance and, consequently, the lecturers' professional competence (Ministério da Educação, 2009b). Hence it is envisaged that HE should provide constructivist and situated learning environments where learners construct knowledge concerning their practices and share it within their communities of learning (Driscoll, 2000). To make things worse, the lecturers are faced with an extension of their traditional roles to include being managers and extensionists (JEM, 2007), course designers, marketers and technology experts (Ferman, 2002), scholars, researchers and lifelong learners, and discipline specialists (Ministry of Education, 2000).

This situation reinforces the importance of professional development to assist lecturers in adopting improvement mechanisms and responding innovatively to demands for high quality. Considering that academics are extremely time-poor (Ferman, 2002) professional development interventions should be organised in a work practice-embedded way, having critical reflection on practice as its paradigm (Clegg et al., 2002).

Since reflection must be about something and cannot occur in a vacuum, I have opted for promoting critical reflection on a transformative idea – the adoption of Learning Style Flexibility (LSF). For this purpose I was driven by the remark that considering learning styles



is an elementary aspect in facilitating learning (Toohey, 1999; Hubball & Poole, 2003), since learning styles are studied to optimise efforts of facilitating learning (Curry, 1990). Therefore, as an innovative approach and also considering its strengths I found it useful to assume a holistic approach, such as Learning Style Flexibility (De Boer & Steyn, 1999; De Boer, Steyn, & Du Toit, 2001; Du Toit, De Boer & Steyn, 2004; Du Toit, 2006; 2008), drawn from the whole-brain model (Herrmann, 1995, 1996).

LSF is an approach that responds to those mentoring and facilitating learning models that are mainly (and maybe involuntarily) focused on the promotion of left brain learning. Conversely, LSF argues that we must encourage different ways of learning in students, considering the four quadrant spectrum, i.e. accommodating their learning preferences and challenging their avoidances. The decision to work with LSF was informed by both the innovative character desired in this kind of study and the advantages it seems to have over other mentoring models as I briefly explain in the remaining paragraphs of this section.

Maynard and Furlong (1994) have identified three models of mentoring after carrying out an extensive review of literature. These include the apprenticeship model, the competency model and the reflective model.

Concerning the apprenticeship model, Maynard and Furlong (1994) point out that it entails the opportunity for trainees, while learning to teach, to have direct experience of teaching real students. In doing this, they work with a mentor who can interpret and explain the classroom occurrences. In the competency model they go forward, the learners are involved in practical training on a list of pre-defined competencies. Here, the mentor, as a systematic trainer, observes the trainees and provides feedback. These two models have in common, among others, the power imbalance between mentor and mentee, and relationships where experts pass on their crafts' principles to eager novices (Hargreaves & Fullan, 2000).

With regard to the reflective model, Maynard and Furlong (1994) assert it entails introducing a critical element within the learning process, through switching the focus from own teaching to students' learning and making it more effective, going beyond routines and rituals. While the two first models focus on initial training, the reflective model relates to both initial and to mentor-initiated lecturers.

In this study I work with Learning Style Flexibility (LSF), which for at least three reasons I find a variant/constituent of the reflective model. Firstly, it departs from the identification by the professional learner of the main preferred modes of knowing or learning styles and exploring these within the process of facilitating learning. Secondly, LSF is not about developing customary modes of teaching. Rather, it is about innovating and *thinking through different ways of teaching and developing own justifications and practical principles from own work* (Maynard & Furlong, 1994:81). Thirdly, LSF implies that the mentor moves from being a model and instructor to being a co-enquirer or co-learner.

My choice to work with the whole brain model and LSF is associated with the innovative nature expected from this kind of study. As I will show in Chapter 2 the interest in the whole brain model spans from South Africa (De Boer, Du Toit, Bothma & Scheepers, 2012), Jordania (Bawaneh, Abdullah, Saleh & Yin, 2011), United States of America (Lumsdaine & Lumsdaine, 1995) to New Zealand (Hadfield, 2006). Despite this interest in such diverse points in the world little research has been carried out in this field. Still Coffield et al. (2004), in a comprehensive evaluation study of learning styles, indicated that out of 71 approaches, the whole brain model is one of the 13 most influential models and is highly recommended for education and training.

LSF goes beyond the traditional approaches based on dichotomous classification of learning styles, such as deep versus surface learning. These generally consider one approach to learning as more desirable than the other, while LSF acknowledges that the four learning quadrants just represent a diversity which should be accommodated while we challenge the avoidances. In this way LSF appears to be aligned with democratic values of equality. Besides, the promotion of LSF per se is associated with encouraging deep learning in all quadrants.

In carrying out this research, especially while assuming the roles of facilitator, mentor and co-learner, I have been informed by my values of freedom, equality, and collaboration, all of which are per se democratic values (Genç, 2008). Therefore, my choices throughout the study, including the idea of adopting LSF and action research, have been informed by these values.

In order to keep open my understanding of self as part of my professional development and the development of being critically reflexive, I have gone through an array of procedures, illuminated by my ontological and epistemological beliefs as well as by constructivism, which appears to be an overarching theory of learning for the values I hold.

According to my ontological belief, the University, which is my work and research site, is a setting featured by a dialectical relationship between subjects, including others and myself. My epistemological belief, which is a constructivist standpoint, establishes that I construct a knowledge (and/or identify weaknesses or gaps) for myself in the context of my practice by confrontation (or tentative application) of new knowledge with my practice experiences (Daley, 2000). Therefore I construct meaning in interaction influenced by other actors, such as fellow lecturers and students. Within such a process of making meaning the knowledge of self weaknesses is significant, since through my professional development I have aimed to acquire knowledge, skills and procedures that will enhance my professional practice (therefore surpassing the identified weaknesses or gaps).

In order to identify weaknesses within my practice, I have used a number of instruments that are enclosed within the components of Kelchtermans' (2005) personal interpretative framework. Such components include self-image, job motivation, future perspective, self-esteem and task perception. Following Kelchtermans I see my self-image as the way I typify myself as lecturer or mentor. In order to compose this self-image I have employed one of the Brookfield (1995) critical reflective lenses, namely autobiography. Therefore I have reviewed certain written notes from my teaching practice; I have considered some critical incidents and teaching material from my past experiences. Future perspective, as Kelchtermans posits, has revealed my expectations about the future. Such expectations are a result of reading theory (Brookfield, 1995). For Kelchtermans (2005), self-esteem implies one's appreciation of one's actual job performances. In order to carry out this evaluation I used an array of tools including checklists, feedback from fellow lecturers, video-recording, a personal journal and a critical incidents record. Except feedback from fellow lecturers, the others allowed self-evaluation and understanding without excuses to invalidate it. Using these instruments appeared to be conducive to my decreased self-defensive attitude and allowed me to formulate my own viewpoints or new perspectives concerning my way of facilitating learning.

## 1.2 My practice as informed by educational values

In line with McNiff (2001) and as I try to demonstrate in the following paragraphs, I contend that in the new scholarship the criteria that ought to be used to assess the effectiveness of professional development efforts are related to the values we bring to work. Still the issue of supporting our practices on values appears to be disputed, as there are many voices questioning it. On the one hand there is the problem of values, such as democracy and freedom being associated with political discourse. In this regard, informed by Prilleltensky (1997), I would say that the values that inform my practice apply not only to macro-systems. They appear to be relevant to practices that occur at the University as a micro-system. For this reason I refer to them as educational values. On the other hand values appear to be a contested issue due to the emergence of at least two perspectives approaching them. Firstly, there is a view that is sustained in positivism, which stresses that educational professional practice should be guided by efforts to put to work scientific principles. Accordingly, practice should be sustained by knowledge generated through randomised experimental research, which is considered the only reliable way to generate valid knowledge about 'what works' (Biesta, 2010). Therefore it contends that educational practice should be value-free. According to Biesta, against this perspective, there emerges the perspective that asserts the following:

*Education is a teleological practice – a practice framed by a telos: an aim or purpose – which implies that decisions about educational actions and arrangements always have to be taken with an eye on the desirability of what such actions and arrangements are supposed to bring about ... The teleological character of education provides us with one important reason for suggesting that questions about 'what works' – that is questions about the effectiveness of educational actions – are always secondary to questions of purpose. It is only when we have provided an answer to what we hope to achieve that we can begin to ask questions about the ways in which we might be able to achieve such outcomes ... This is one reason why, in education, values come first (2010:500).*

The quote above implies that the decisions I make concerning, for instance, lecturers' professional learning, have to be guided by the desirability of what such efforts are supposed to generate as lecturer professional growth. Therefore, within this venture I am informed by educational values such as freedom, collaboration and equality of opportunity. These are values that are aligned with key constructs such as (social) constructivism, transformative learning and LSF, as I show throughout the study. Giving prominence to

values, according to Biesta (2010), does not mean that evidence plays no role at all in education; rather, it results in a major role being attached to educational values.

Apparently, the definition of values sheds light on the prominence these beliefs should have in practice. Therefore Rokeach (as quoted by Sousa & Eusebio, 2005) defines value as an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence. In acknowledging values as the priorities linked to determine beliefs and practices, this definition shows the prominence values should have in educational practice.

According to Prilleltensky (2001) values entail principles that inform our personal and professional behaviour and direct the effort of working toward a wished end-state. However, each value by itself appears to be insufficient, which requires me to regard values as a whole (Prilleltensky, 1997). Hence, when I am informed by values such as freedom, equality, and collaboration, I commit myself to providing those surrounding me with the opportunity to combine forces in making choices that do not violate their right to fulfil their potential. Furthermore, I acknowledge the need to negotiate dissonant points of view in order to maintain a peaceful and respectful atmosphere.

Of significance in considering values are two aspects against which Prilleltensky (1997) warns us. Firstly he cautions for the non-existence of a perfect list of human values that include whole diversity of goods that the practitioner requires for a good professional life. Accordingly, any proposition will be incomplete, since each practitioner ascribes to different values. Therefore the usefulness of any set of values depends on its applicability to particular contexts. The legitimacy of the values of freedom, equality, and collaboration to which I ascribe is derived from their applicability to the context of higher education in Mozambique, which subscribes to relevant principles (Ministério da Educação, 2009a). Secondly Prilleltensky (2001) warns us to avoid dogmatism and relativism concerning values. He indicates that when we approach values in a dogmatic way there is a risk of undermining human diversity through coercive enforcement and the application of single sets of beliefs. Besides, values' relativism might end up giving equal merit to several sets of values, which can paralyse the practitioner from weighting competing orientations, since he would lack the relevant criteria.

In the next paragraphs I describe the three values that I find relevant to this study. In the study I try to show the extent to which such values are applicable to my practice of facilitating learning and I manage to live according to those values. For instance, I show that freedom and equality are related to LSF since this model requires that the learner approaches the learning task according to his/her preferred mode of learning.

Collaboration entails learners jointly engaging in efforts to solve a common problem or to construct new knowledge, be it group or individual knowledge (Peters & Armstrong, 1998). This value is underlined by the assumption that it is impractical for one person to know it all. Each group member rather knows something, and frequently has much to give. Within this study I put this value into practice, not only by promoting group work in LSF, but also by adopting action research. Aligned to Carr and Kemmis (1986) I find my action research propagating collaborative involvement in the research process, which is expanded to include all those lecturers involved in or affected by the action. This collaboration is associated with the enhancement of the lecturers' level of connectedness, contributing to a sense of community (Prilleltensky, 1997).

According to Carr and Kemmis (1986) freedom concerns the provision of intellectual and material conditions in which non-alienated communication and interaction occur. It means freedom to choose the subjects, approaches and venues for learning to take place and, on a larger scale, to determine the balance between the claims of teaching and research (Fuchs, 1962). Adopting views from this author, I find the conception of learner freedom requiring the protection of the individual learner against control or restriction of his/her freedom as learner from any quarter relevant. Pursuing to live according to the value of freedom entails increasingly viewing the University as the place where knowledge is constructed by lecturers and shared with students, who at the same time learn to pursue knowledge for themselves. Accordingly, Carr and Kemmis contend that freedom entails learners seeking for:

*understanding on their own behalf (without illegitimate persuasion or coercion) and giving everyone involved the opportunity to raise, question, affirm and deny validity claims (about comprehensibility, truth, sincerity and appropriateness) and test their own point of view in self-reflective discussion (1986:147).*

In line with Carr and Kemmis, Marks (2002) asserts that essentially freedom entails the possibility of doubting, questioning skeptically, challenging and arguing about anything and

everything, including freedom itself. In this study I envisage freedom as the possibility given to a learner to approach his/her learning process in what he or she considers the most convenient way. In this respect I recall that LSF recognises the value of all learners, irrespective of their preferences and thus enables and requires all learners to participate or contribute accordingly. Hence, adopting perspectives of Glennon (2008), I find LSF engaging how the learner gets involved in his/her construction of knowledge by building the learning process upon the compelling preferences of each student. This approach empowers the learner by giving him/her considerable control over how learning takes place; in this manner ownership of learning is provided (Glennon, 2008). According to this author ownership of learning requires learner self-directedness.

Equality of opportunity appears to be a disputed concept within the field of education. Among others, the determinant of such dispute is its paired occurrence with the concepts of sameness and diversity or difference. Accordingly there is a perspective that sees equality as undesirable, mainly when viewed as sameness, while another viewpoint finds it desirable. In this study, and in line with the latter perspective, I am guided by the idea that we should promote equality in diversity (Evans, as quoted by Daniels, Creese, Hey, Leonard & Smith, 2001). I regard equality of opportunity as strongly linked with holistic practices of facilitating learning. Accordingly equal opportunity means a group of students having the possibility to achieve the same goal in the occurrence of the same supporting conditions. Therefore, according to Evans (as quoted by Daniels et al., 2001), to treat learners equally it is not necessary to treat them in exactly the same way.

Equality (in diversity) of opportunity appears to be closely linked with the heart of the whole-brain model, since it acknowledges that no one preference is better than other. Rather, each brain quadrant represents a different way of understanding and processing information from the environment. Therefore each individual should enjoy the opportunity to interact with his/her surrounding milieu according to his/her thinking preference (Herrmann, 1995). Hence, relying on McNiff and Whitehead (2006), I find one of the LSF tenets to be that previous categorizations of left-brain learners as elites disappear from the educational arena, once it acknowledges that learners may have different thinking and learning preferences and different responsibilities, but all are equally valuable people with right to learn and work according to their preference.



Working on the framework of Ollerton (2001) I find that LSF claims recognition of learner preferences, which represents his/her present potential achievement rather than seeking to pre-determine his/her future achievements based on averaging them on a basis of sameness. Consequently, as the facilitator of learning, I have to keep an open mind that each learner's potential is consistent with the belief that everyone can achieve. Therefore my responsibility is to provide supportive conditions to make this possible. Still informed by Ollerton (2001), I find a significant characteristic of working with learners in an equal learning opportunity the value the facilitator gives to the inevitably wide range of contributions associated with the whole brain spectrum. Therefore we have to bear in mind that when all contribute, all can gain (Daniels et al., 2001). Commensurate with presenting A quadrant dominant learners with challenging problem-solving tasks does not exclude others (who might be A quadrant avoidant) from being provided with an equal opportunity to develop abilities to make them work out of their comfort zone – hence developing certain dexterity within this quadrant.

### **1.3 Mozambican context and its higher education**

#### **1.3.1 Geography and demography of Mozambique**

The Republic of Mozambique, which became independent in June 1975, is located in the south-eastern region of Africa, as figure 1.1 indicates. The country covers an area of 799.380 km<sup>2</sup>. Its eastern part is sheltered by the Indian Ocean. Six countries share their borders with Mozambique, namely Tanzania (north), Malawi and Zambia (north-west), Zimbabwe (west), Swaziland (south-east) and South Africa (from the south-east part to south). The capital city of Mozambique is Maputo, which, along with ten other provinces composes the country's administrative division.



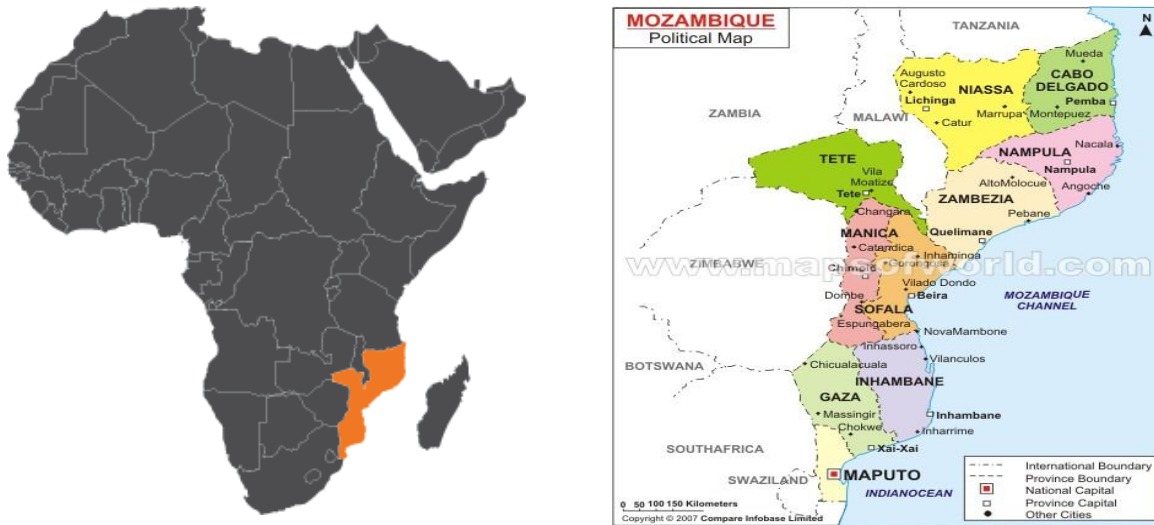


Figure 1.1 Mozambique in Africa and its administrative division (www.insightgroupplc.com & www.mapsofworld.com)

The overall population of Mozambique is 20.530.714 inhabitants, of which 52.3% are female (Instituto Nacional de Estatistica, 2008). The official and the most widely spoken language is Portuguese. However, it is spoken by only about 50% of the population since it is a second language for many. One of the country’s features is its language diversity, comprising at least 13 main Bantu languages, some of which have one or more dialects (Chilundo, 2006).

### 1.3.2 Higher education sub-system in Mozambique

Higher education in Mozambique is still in the process of growth, expansion, and organisation. Its 50 years history is marked by dramatic changes that were determined by the political events that the country has witnessed. Therefore, until 1975, the country was under Portuguese colonial rule. This was a period marked by a kind of marginalisation of the native Mozambican people,

*although the Portuguese government preached non-racism and advocated the assimilation of its African subjects into the Portuguese way of life (Mario et al., 2003:7).*

Since the national independence on 1975 the country has been under the governance of the FRELIMO party that has adopted a mono-party, Marxist-Leninist form of government. During most of this period the country faced a highly destructive civil war that lasted up to 1992. Upon the peace agreement in 1992 between the ruling party and RENAMO (Mozambican

National Resistance) a market economy and openness of private initiatives were adopted. These aspects have determined the division of Mozambican higher education history into the three periods I present below and classify in accordance with Fry and Utui (1999) and Mario et al. (2003).

■ *End of colonialism and genesis of the first HEI: 1962 – 1976*

In 1962 the first HEI named *Estudos Gerais Universitários de Moçambique* (EGUM), meaning General University Studies of Mozambique, was established as a response to criticism that colonialism was not interested in promoting indigenous people's empowerment. The aim of EGUM was to provide general courses mainly to the Portuguese colonialists' offspring and to an elite of assimilated Mozambicans. It offered more than ten courses that ranged from Education through Medicine, to Geology.

In 1968, as result of the experience and capacity gained with EGUM, both in terms of human resources and of infra-structures, the EGUM was upgraded to University of Lourenço Marques (ULM). This period was characterised mainly by the increase of courses offered up to 17, including among others Geography, Economics and Mining Engineering.

From my search I could not find any reference describing academic staff professional development efforts for that period. However, I can imagine that its occurrence is framed within efforts carried out by the Portuguese HEI system to improve the quality of its staff.

■ *Independency, socialism and civil war: 1976 – 1992*

After independence, among others, the educational system was nationalised and numerous Portuguese people fled the country, leaving the workforce extremely severed. The nature and goals of the University of Lourenço Marques changed to accommodate the new socio-economical and political context. In 1976 it was renamed Universidade Eduardo Mondlane (UEM). The new university goals were framed within the need to develop a national identity, to promote training for the staff necessary to solidify the nation's independence and to stabilise the country's educated labour force after the mass departure of the Portuguese people (Brito et al., 2008; Minister for Higher Education, Science and Technology, 2000).

In 1978 a violent and devastating civil war was initiated by RENAMO. In the meantime the country was plagued by drought. Mario et al. explain that the combination of civil war, drought, and the increasing unpopularity of the Marxist-Leninist orientation

*brought the Mozambican economy to its knees...Mozambique had become the poorest country in the world...morale foundered and the university lost all possibility of research outside the city of Maputo, while buildings, laboratories, and other facilities became increasingly decrepit (2003:9).*

Despite these barriers to economic growth there was a gradual expansion of HE. In fact, in 1985 the Higher Pedagogic Institute (ISP) was opened. Its mission was to provide training to teachers and technical staff for the national education system. The ISP was in 1995 transformed into the Pedagogical University (UP). In 1986 the Higher Institute for International Relations (ISRI) was established with the mission to provide training in diplomacy and international relations.

Efforts towards the promotion of academic professional development in this period included hiring and training new Mozambican academic staff, and curriculum development/reform aimed at harmonising the curricular structure with the immediate needs of the labour market (Minister for Higher Education, Science and Technology, 2000). Training for HE lecturers was almost exclusively limited to the activities carried out by the UEM and was determined by the country's development conditions during the post-independence period. Therefore, in the beginning, graduate students from the UEM were sent to partner countries, mostly socialist, to pursue their Master's and Doctoral degrees in areas defined as priority (Ministério da Educação, 2009a).

Since the whole education system was short of qualified staff due to the exodus of the Portuguese people, the country was forced to programme in a coordinated way the training of teaching staff from primary to university level (Ministério da Educação, 2009a). Many lecturers were sent to socialist countries that had supported the war for independence, such as the Soviet Union, East Germany and Bulgaria. Within this period the HE sub-system broadened its international cooperation with other universities and agencies from countries that sponsored diverse activities, including teaching and research. This included openness for cooperation with Western countries, such as the UK, the Netherlands, and Sweden. According to the Minister for Higher Education, Science and Technology (2000), in the same

period, the University offered short courses for workers in order to have them ready for their new functions. I find all of these efforts contributing to the development of:

*continued staff training, in order to raise educational levels and the professional competence of staff, through national, regional and international postgraduate training and short courses (Minister for Higher Education, Science and Technology, 2000:16).*

■ *Peace, democracy and market economy: 1992 onwards*

The prominent occurrence that indicates the beginning of this period is the peace agreement between the government of the ruling party FRELIMO and RENAMO. Upon this agreement many transformations occurred that had an impact on (higher) education. Such transformations include multi-party democracy and market economy.

In 1993 the first Higher Education Law was approved by Parliament, opening space for private providers. Therefore, in 1995, the country witnessed the opening of the first private university, the Polytechnic and University Higher Institute (ISPU). In 1996 the Catholic University of Mozambique (UCM) was opened, and the Higher Institute for Sciences and Technology of Mozambique (ISCTEM) followed, opening its doors in 1997. This closed the first wave of private HEIs to emerge. The mushrooming movement of private and public HEIs, including polytechnics, was observed after the year 2000.

Table 1.1: HE Training cycles and academic degrees (adapted from Ministério da Educação, 2010c).

ACADEMIC LEVEL			DURATION
PROGRAMME	TRAINING CYCLES	ACADEMIC DEGREES	
Post-graduate	3 <sup>rd</sup> cycle	Doctoral	3 years
	2 <sup>nd</sup> cycle	Master	1,5 to 2 years
Undergraduate	1 <sup>st</sup> cycle	Licentiate	3 to 4 years

In order to align its content to the development of HE and to the emergence of new HEIs, Parliament approved a new Higher Education Law in 2009. Among others, the new law determines that the Higher education sub-system comprises three training cycles, namely

the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> cycle. These cycles are respectively equivalent to the degrees of Licentiate, Master and Doctoral, as table 1.1 shows.

Within this new context the institutions that compose the higher education sub-system entail universities, higher institutes, colleges, higher polytechnic institutes and academias. These can be divided into the following three groups of institution:

- Public institutions with more than decades of existence, which are big, with many campuses; the teaching staff is mostly full-time.
- Private institutions with less or around ten years of existence, with mostly part-time teaching staff.
- Very recent public HEIs, spread through different provinces, and still in constitution and establishment phase (Ministério da Educação, 2009b).

The last group of institutions has been created to respond to diverse demands in HE, such as accommodating the local needs in technical staff with expertise in fields related to such local potentialities and reducing the regional imbalances in terms of access.

Currently the HE subsystem includes 36 institutions, of which 17 are public and 19 are private. This rapid expansion of HE throughout the country has taken two forms: the establishment of satellite campuses and the opening new institutions in diverse provinces (Bailey, Cloete & Pillay, 2011). Besides, this expansion has been paralleled by the growth of student numbers. Therefore, from 3.750 students in 1990, the sub-system has observed an increase of 69.516 students across the country in 2010 (Direcção do Coordenação do Ensino Superior, unpublished data base).

Most public HEI's academic staff is in full-time contract, while private institutions rely on part-time staff (Chilundo, 2003). The majority of the Mozambican academic staff is composed of lecturers with only a Licentiate degree, which is equivalent to a BA (Hons). Thus, more than 60% public university lecturers have only a Bachelor's degree (Mário et al, 2003; Direcção de Coordenação do Ensino Superior, 2006; Ministério da Educação e Cultura, 2006; Campos, 2011). This scenario clearly portrays the high imperative for providing professional development (PD) opportunities to lecturers. This is compulsory considering that in

Mozambique there is no formal programme for training prospective lecturers, a kind of Postgraduate Certificate in Higher Education (PGCHE) offered in other countries like South Africa, UK and Australia.

In this regard I found a point made by Cranton and King highly relevant and entirely applicable to the Mozambican context:

*[Mozambican lecturers] are in a unique position among professionals in that they often have not had the opportunity to learn how to do their job. [Most of them] come into their positions through a circuitous route, one that does not include teacher training. At some point in their careers, they may return to school, most often to study [teaching methods and others] on part-time basis, but generally they learn their craft through experience, modelling themselves on other and reflecting on their practice (Cranton & King, 2003:31).*

The quote from Cranton in King is the main feature of a sub-system that is expanding very rapidly in order to respond to the country's demands. Therefore I observe that there is an additional array of challenges the HE subsystem has to face as associated with the rapid expansion. These include improvement of equity of access with promotion of gender balance, and quality assurance, including quality standards across institutions and regions (Brito et al., 2008; Bailey et al., 2011). In connection with the last point, the Government approved the SNATCA, the Mozambican Credit Accumulation and Transfer System. Its main objectives include, among others, allowing students and lecturers competitiveness and mobility within the country, the region, and the world; providing assurance of quality and graduate employability, and promoting learning-centred teaching and learning process (Ministério da Educação, 2010c). Adoption of learning-centred approaches is apparently going to be gradual, resulting from peer-learning experiences, since the Minister for Higher Education, Science and Technology (2000) established that with the increase of the number of lecturers who pursued post-graduation courses abroad, there are possibilities to share, experiment and assimilate new methods of facilitating learning.

Although its Gross Domestic product (GDP) is still one of the lowest in the world, Mozambique is cited as one of the countries that have witnessed the highest growth in economic rates since the late 1990s (UNDP, 2008). Such economic growth appears to have an impact on HE and the academics' work. Therefore Mario et al. (2003) found that some course contents were seen as of little interest to potential employers. In turn, Brito et al.

(2008) indicate the higher education sub-system performance was insufficient to meet the expectations of society, since employers were unhappy with skills showed by graduates. These and other reasons might lie behind the curriculum reform that was carried out at the whole UEM on the end of the 1990 and beginning of the 2000s.

The Minister for Higher Education, Science and Technology further acknowledged that the rapid economic growth brought new challenges to the HE subsystem. Such challenges include, among others, the need to increase the graduate rates to satisfy the needs of the labour market; and the need to diversify the courses and to attune the curricula in response to the expanding market (Minister for Higher Education, Science and Technology, 2000). This position appears to be commensurate with Brew's who says that:

*The teaching of generic graduate qualities or attributes gained popularity in the 1980s and 1990s following employers' criticisms of universities for failing to develop the skills of employability. Many, if not most, universities now espouse the importance of improving the employability of graduates by developing 'key skills', 'transferable skills' or 'graduate attributes' (2010:109).*

Campos' (2011) evaluation of the Strategic plan for higher education in Mozambique 2000-2010 observed that certain actions aiming to accommodate the country's economic growth were still to be achieved. For instance, he found that the quality of learning results and of the relevance for the socio-professional graduate insertion for the country socioeconomic development did not improve and, most likely, had deteriorated.

Informed by Campos' evaluation results, the Strategic Plan for Higher Education 2012-2020 (Ministerio da Educação, 2011) acknowledges that the Mozambican economy is attracting investment in varied areas, impacting on the HE sub-system. Therefore it defines objectives such as increasing the HE relevance (in terms of employability), alignment of expansion with the country developmental programs, and promoting the use of learner-centred approaches.

### **1.3.3 Mozambican HE as shaped by globalisation, internationalisation and massification**

#### **1.3.3.1 Globalisation**

Globalisation is a concept all of us use in different contexts and with different senses. Knight defines it as the *process that increases the flow of people, culture, ideas, values,*



*knowledge, technology, and economy across borders resulting in a more interconnected and interdependent world* (2008:5). This definition shows that globalisation is such a pluri-dimensional process. Accordingly, there are those who talk about technological, economical or even cultural globalisation. Concerned with HE it might mean that the university cannot be an island within the society and the world.

With reference to the Mozambican HE Brito et al. (2008) address globalisation in terms of the challenges it poses. Therefore they argue that if Mozambican HE sub-system has to develop, certain mechanisms have to change in order to respond to the globalisation processes. Such mechanisms include the following:

- Continuously updating curricula in order to guarantee that students are up to date upon graduation. This aspect is multi-dimensional. Firstly, the updating must respond to technological changes. Secondly, it is a reaction to changes in labour marketing. As I have mentioned previously, with peace and stability there are many enterprises eager to invest in Mozambique, which implies that they import technological innovations. Such innovations challenge the HEIs to provide technical training. Thirdly, universities should equip graduates to be able to generate their own employment.
- Integration in the national innovation system. With regard to this point Brito et al. (2008) indicate that universities are challenged to generate new ideas, which should be transformed into concrete projects and enterprises. In this way the universities would be less isolated since they should establish a closer link with the society.

Relying on Knight (2008) I find the challenges above having a number of correlated consequences for the academics in Mozambique. These include the following:

- Growing emphasis on academics' continuing education, lifelong learning and continual professional development.
- The need for academics to develop new skills and knowledge resulting in new types of program and qualification.
- New delivery methods used for domestic and cross-border education. Linked to this, I have recurrently mentioned the emphasis to be put on the promotion of learner-centred approaches to facilitate learning.



### 1.3.3.2 Internationalisation

Meaning different things, but closely associated with globalisation, is the concept of internationalisation. As Knight (2008) puts it, while globalisation is about worldwide scope and movement, internationalisation stresses relations between and among nations.

Internationalisation is a phenomenon that is not new and is vastly impregnated within the context of Mozambican HE. Although for a long time it has been considered as the cross-border mobility of students, according to Adamu (2012), its conceptual understanding has broadened to include other components, including the following:

*Collaboration in teaching, research, and other projects; mobility of students and scholars; inclusion of international dimensions into the curriculum; recruitment of foreign students, establishing campuses in foreign countries, and countries' collaborative works toward common frame of reference (2012:4).*

There are three dimensions of internationalisation, including the general exchange of information, the migration of people and brains, and the organisation of movement of these people and the brains (Brito et al., 2008). While the last dimension appears to be fundamental in guaranteeing that there is some “order” within the migration process, I concentrate on the first two dimensions, due to their direct or visible impact on HE and academics’ professional development.

Brito et al. (2008) show that currently internationalisation of Mozambican HE is characterised by people who pursue foreign degrees (either undergraduate or postgraduate), recruitment of foreign lecturers by local HEIs, individual universities involved in partnerships with institutions abroad, international sponsors financing the training of Mozambicans in their countries, and international agencies supporting and assisting different institutions through employing foreign staff.

Although internationalisation does not happen without threats and negative effects, its impact can be highly positive if the system manages properly the challenges it brings. Therefore, the aspects below represent the impact of internationalisation on HE and require the active involvement of lecturers:

- Recognition of studies – Mozambican HEIs have to develop mechanisms allowing recognition of foreign qualifications. So far, as I showed in previous paragraphs, Mozambique has approved its equivalent Credit Accumulation and Transfer System, which pursues providing competitiveness and mobility within the country, the region, and the world of students and lecturers (Ministério da Educação, 2010c).
- Diversity – HEIs are challenged to provide a broad range of courses. However, in Mozambique this point is problematic since most institutions, especially the private ones, are more bent on providing courses such as law, economics and business administration to the detriment of medicine and engineering, which require high investment in equipment and material (Brito et al., 2008; Mario et al., 2003).
- Internationalising curricula, teaching and research quality – as a result of both outward movement of students (and lecturers) who pursue their degrees abroad and inward of foreign lecturers recruited by universities and technical staff hired by international agencies, the HEIs are forced to infuse an international dimension in their curricula. An example that might sustain this assertion is the curriculum reform carried out recently, which aimed amongst others, to adjust the national curricula to the SADC regional integration. Besides, such contact with foreign contexts and people appear to catalyse the adoption of efforts towards innovating and improving the quality of courses offered by Mozambican HEIs. Furthermore, there is an increase of activities related to scientific research within universities, as well as opportunities for lecturers and researchers to access knowledge, improve their capacities and expand their intellectual horizons.
- Quality assurance – the Mozambican government acknowledges that due to the need to harmonise the HE with the regional and international context, it is urgent to establish a quality assurance mechanism that will guarantee the improvement of quality and relevance of the courses offered (Ministerio da Educação, 2007). It is not evident that such a measure is connected to internationalisation, but from the high involvement of international policymaking agencies in assisting in the formulation of national policies, I can infer that the introduction of quality assurance in Mozambique was shaped by internationalisation.

### **1.3.3.3 Massification**

The Mozambican HE sub-system, like many other African ones, has observed a rapid increase of student enrolment, following the approval of the higher Education law in 1993. Therefore, as I indicated before, there was an explosion from 3.750 students in 1990 to

6.890 students in 1995, having the sub-system reach 69.516 students in 2010 countrywide. According to Mario et al. (2008), despite this growth, the number of students enrolled is still far below the demand. The reason for this situation might be that apart from the traditional graduates from pre-university schools, there are candidates from technical vocational schools and the older students who wish to increase their education either for the sake of studying or to increase their income.

This phenomenon puts great pressure on the whole sub-system, on the institutions, and on individual academics that are required to provide relevant and high quality education, as different strategic plans for HE show. In connection with this I have found four main domains, among others, on which massification appears to have had an impact on higher education and academics in Mozambique:

- Quality – the challenge for most systems is the provision of higher education that combines mass access with quality. The increase in numbers has definitely diminished the elitist nature of higher education institutions, but has also had an effect on quality (Mohamedbhai, 2008). This is probably why the Campos (2011) report found that increasing quality in Mozambique HE is still a goal to be pursued.
- Relevance – due to the call for a diversification of mass higher education, more and more courses have been introduced. However, some of these courses do not take the needs of the labour market into account (Mohamedbhai, 2008). I have mentioned, for instance, the increased tendency in Mozambique to provide more social sciences courses in detriment to technology, medicine and engineering (Brito et al., 2008).
- Facilitating learning and research – there is a marked increase in the student/lecturer ratio leading to a lack of individual attention to students or to handling of students in smaller groups. Lecturers are challenged to adapt methods of facilitating learning creatively in the overcrowded classes. The same applies to the supervision and assessment of learning.
- Libraries conceived for much smaller numbers of students cannot respond effectively to the new demands. This situation might represent a threat to the efforts towards adoption of learner-centred approaches, since in many instances students have to rely on a handbook that belongs to the lecturer.

## 1.4 Rationale

The foundation for this research is related to a number of factors. Firstly, the Strategic Plan for Education and Culture (Ministério de Educação e Cultura, 2006) is based on principles such as guaranteeing access and equity; offering relevant and flexible courses; diversifying the kind of institutions, training opportunities and ways of facilitating learning. This principle is aligned with the need of a permanently inquiring spirit to promote interdisciplinary work and to accommodate individual lecturers (Universidade Eduardo Mondlane, 1999). Part of these principles have been attained. These include the increase in number of HEIs (from 9 to 37), doubling the student number and the improvement in gender and geographical equity (Ministério de Educação e Cultura, 2006). However, doubts remain concerning methods of facilitating learning, which appear to be mostly devoted to knowledge transmission and to the promotion of left-brain learning. In order to turn this situation around it seems that PD activities devoted to constructing meaning with regard to the implementation of innovative practice, such as Learning Style Flexibility (LSF), would help.

Secondly, questions are raised by the history of education in the country, which can be divided into three periods, namely colonial education, post-colonial (socialist) education, and post civil-war education. The first two periods had in common lecturers acting as curriculum receivers and transmitters of knowledge to students who were passive recipients. Contrarily, the current period is associated with increasing promotion of creative, independent and critical standings within the professional practice. In this period critical reflection appears to be more encouraged since, according to Genç (2008), democratic societies require educational environments that raise values including freedom, and equality. Hence, my curiosity urged me to explore the possibilities offered by the HE subsystem, once it has shifted from emphasising knowledge imposition to compliance with freedom of choice, where the professional may pioneer innovations he/she deems adequate to one's instance.

Finally, I find the Mozambique Government's (Governo de Moçambique, 2005) concern with the promotion of equitable HE network distribution supporting the relevance of this study. The Mozambican HE subsystem has witnessed a significant countrywide expansion since the mid-1990s in order to accommodate the challenges brought by the economic growth (Mario et al, 2003). This expansion implies among others, the appointment of mainly university graduates, most without professional education qualifications as HE lecturers.

Since the majority of experienced lecturers are concentrated in the big cities and established universities, in some situations there are young academics becoming independent practitioners, working with little or no mentoring. In this regard I find that those lecturers are deemed to act, in Schön's (1983) terms, like instrumental problem solvers. Hence they are obliged to choose, from their repertoire of knowledge and skills, those technical means they find most suitable to solve the problems within their contexts. However, lecturer practice does not present well-structured problems. Rather, it presents messy and indeterminate situations, which require the lecturer to develop the professional artistry (Schön, 1983). Thus, since competence in professional practice depends on continuing learning, I expect critical reflection to play a crucial role in the promotion of those lecturers' artistry.

### **1.5 Research questions**

HEIs are under pressure to increase the quality and relevance of courses and facilitating learning practices. This pressure is parallel with the increasing number of students, changes in the student profile and expectations, the need to adopt ITs and new methods of facilitating learning and research (Marshall, Adams, Cameron & Sullivan, 2000; Roche, 2001). Such changes occur within a time/space context featured by low effectiveness of short-courses for initiated lecturers. Considering that critical reflection is the corner-stone of professional development, I have formulated the following main research question:

*How can we promote critical reflection on innovative practice, contributing to professional development of academic staff in Mozambican Higher Education Institutions?*

I have refined the question above into the following four research sub-questions:

- To what extent is reflection integrated within existing PD interventions in the Mozambican context of Higher Education?
- How can I (we) encourage critical reflection in HEIs?
- What is the relationship between lecturers' brain dominance profiles and their styles of reflection?
- How can I (we) use the principles and practices of LSF to design a model of Learning Styles Flexible Reflection (LSFR)?

Within this set of questions, the first two appear to be naturally and logically subsumed within the main research question, since they aim to provide the baseline information about the Mozambican context of HE and directions for possibilities to promote critical reflection. The first sub-question deals with the need to have an idea of the main professional development interventions to which lecturers in Mozambique have access and find the extent to which reflection is integrated in such interventions. The second sub-question forms the core of the action research I carry out within the study. It is related to the need to find a context-grounded and sustainable way to encourage critical reflection as a vehicle for academic growth. Since reflection cannot occur in a vacuum I have adopted it having in mind the implementation of an innovative practice encapsulated in the implementation of LSF. This is a way of facilitating learning Coffield et al. (2004) highly recommend for education and training.

The last two questions are mainly associated with the innovative nature expected from this kind of research. For lecturers to implement LSF they first had to fill in the Herrmann Brain Dominance Instrument (HBDI). This is the inventory that informs the individual about his/her brain profile. Such a profile consists of one's preferences and avoidances, as I will explain in depth within the next chapters. Having available the brain profiles of all lecturers participating in this study and their critical reflections recorded (as I will explain in the methodology), appeared to be a valuable opportunity to establish a link between the whole brain model (through brain profiles) and reflection. It was with this link in mind that I decided to include the last two questions.

### **1.6 Limitations of the study**

I have conducted this study in a context that is almost void of publications (and research). Moreover, lecturers' practices are seldom studied or published. These two factors appeared to constitute a double challenge to carry on with this study. Therefore, associated with these and other factors, I found this study to be hampered by the following limitations:

- Lack of studies with a focus on teaching and learning processes in Mozambican Higher Education. During all this time I managed to find only one report (Mandlate, 2003) with substantial information about professional development viewed from an inside perspective.
- Lack of consistence of statistical data about HE in Mozambique, due the inexistent, non-functional, or even outdated data bases about statistics in the country. As a result some of

information I present in this study appear to be contradictory, since for instance one publication might be based on the HEI supplied information, while the other might be based on the Ministry of Education supplied information.

- Shortage or unavailability of documents, such as reports, within institutions. While institutions such as UEM and UP post their reports, yearbooks and other documents on the Web, many others appear to be unwilling to share their commitments and challenges.
- The high drop-out rate within the group of lecturers I invited to participate in the learningshops resulted in having most of the research participants from the same faculty (Faculty of Education). The reverse side of this limitation entails the lessons one can learn if the intention is to organize learningshops such as these only for faculty members .

### **1.7 Research design**

This study is framed within an action research design. Action research is a powerful and liberating form of enquiry (McNiff & Whitehead, 2006) since it involves lecturers investigating their own practice. It entails attempting to have new thoughts about familiar experiences (Winter, 1996). Hence it is self-reflective enquiry used in university-based curriculum development (McNiff, 1988), as one of the models of professional development (Pill, 2005).

I adopted a collaborative, critical and self-critical approach where, in an authentic learning community (Philips, 2003), I worked with lecturers as co-learners involved in one another's learning (Le Cornu, 2005). In this way I explored action research to assess our efforts, confront taken-for-granted assumptions regarding our practice, and transform such practice based on systematic and work-practice grounded information, while contributing to knowledge construction (McNiff, 1988; Winter, 1996; Kember, 2000). I carried out this action research to find ways of living and working according to democratic educational values of freedom, equality, and collaboration. In line with Zuber-Skerritt (1996) I consider my study as emancipatory, since it enlightens us about the potential of action research, about the possibilities for engaging in critical reflection, along with clearing our perceptions about how we could foster it and adopt LSF, thereby improving our professional competence.

Therefore I first administered questionnaires to lecturers in different HEIs indicated in the next section. In parallel with that I carried out semi-structured interviews with senior lecturers and with lecturers occupying management positions. This part of the study served to provide

baseline information about the context. Such information include, for instance, professional development interventions occurring in Mozambique, lecturers' acquaintance with and employment of principles of LSF, lecturers' use of different reflective tools and possibilities to promote reflection within the context of HE.

The action research per se entailed learningshops and mentoring sessions I facilitated for lecturers from different faculties at the UEM. I introduced them to LSF and action research and challenged them to implement both – action research was going to monitor respondents' practice of implementing LSF. It was a synchronous model (Du Toit, 2008), where, while I was monitoring my practice (facilitating the lecturers' professional learning through learningshops and mentoring), they were monitoring their practices (of facilitating their students' learning through LSF). I video-recorded the learningshops and audio-recorded the mentoring sessions to collect data, while they video-recorded and photographed their learning opportunities to collect data.

### **1.8 Research sites**

As I explain in Chapter 3, for this study, in particular concerning the first research question, I will work through public higher education institutions with the main objective of collecting data that can allow me to have an overview of professional development efforts occurring as well as the place of reflection within them. Therefore I will approach the seven (7) higher education institutions that I briefly present below. These are located in the three main regions through which Mozambique is divided – south, centre and north. I decided to work only with public higher education institutions, since most of the private HEIs rely on lecturers from public ones.

From all these HEIs I will collect data through administering a questionnaire on innovative practice and through semi-structured interviews. With the questionnaire I aim to assess the professional development interventions that occur within the different HEIs, but also to see the extent to which lecturers within these institutions adopt different tools for reflection and principles of LSF within their practices. The semi-structured interviews for senior lecturers and those lecturers occupying management position aims to triangulate the questionnaire data. It will mainly serve to provide an in-depth comprehension of the features of professional development and reflection within such institutions.



The Eduardo Mondlane University (UEM) is the only site where I will facilitate the learningshops and mentoring as part of the experimental professional development intervention that I will organise. Therefore, in this site, apart from the questionnaire and semi-structured interviews, I will collect data by means of video-recording and photography.

### **Police Sciences Academy – Academia de Ciências Policiais (ACIPOL)**

The ACIPOL was created in 1999 with the aim of providing adequate scientific, professional and deontological training for police officials. Besides, the institution aims at carrying out activities such as community engagement, upgrading police staff, and promoting scientific and cultural interchange with other institutions. According to information gathered from data base of the Directorate for Coordination of Higher Education in Mozambique (Direcção do Coordenação do Ensino Superior - DICES), on 2010 the ACIPOL was offering 2 Bachelor courses. It had 522 students, being 417 male and 105 female students. Its academic staff was composed by 112 lecturers, among which 100 are male and 12 female lecturers.

### **Higher Polytechnic Institutes – Institutos Superiores Politécnicos (ISP)**

These are institutions that offer general studies or professional training and that are authorised to certify all academic degrees except a doctorate. They were founded to respond to the local needs in technical staff with expertise in fields related to such local potentialities. Therefore these institutes offer courses such as eco-touring, forestry, zoo-technical engineering (ISPG and ISPM), mining engineering and mining processing (ISPT).

### **Higher Polytechnic Institute of Gaza (ISPG)**

According to the DICES data base, on 2010 the ISPG was offering five Bachelor courses. It had 272 students, being 167 male and 105 female students. ISPG academic staff was composed by 62 lecturers, among which 54 are male and 8 female lecturers.

### **Higher Polytechnic Institute of Manica (ISPM)**

According to information gathered from the DICES data base, on 2010 the ISPM was offering five Bachelor courses. It had 320 students, being 236 male and 84 female students. ISPM academic staff was composed by 66 lecturers – 48 male and 18 female lecturers.

### **Higher Polytechnic Institute of Tete (ISPT)**

According to information gathered from the DICES data base, on 2010 the ISPT was offering four Bachelor courses. It had 715 students, being 444 male and 271 female students. ISTP academic staff was composed by 55 lecturers, among which 31 are male and 14 female lecturers.

### **Higher Institute for International Relations – Instituto Superior de Relações Internacionais (ISRI)**

The ISRI was created in 1986 with the mission to provide training for diplomatic staff and experts in international affairs. With its growth the mission has been expanded to contribute to the country's development through providing training to higher education technicians; contribute to the definition of political strategies through research; and promote advantageous international cooperation for the country. According to information gathered from the DICES data base, on 2010 the ISRI was offering two Bachelor courses, namely Public Administration and International Relations. It had 1085 students. Its academic staff was composed by 82 lecturers, among which 68 are male and 14 female lecturers.

### **Eduardo Mondlane University (UEM)**

The UEM is the oldest HEI in Mozambique. It was founded in 1962 offering more than 10 Bachelor courses that ranged from Education through Medicine to Geology. Actually the UEM comprises 14 faculties and schools/colleges. According to its Annual Report (UEM, 2010), in 2009 the UEM was offering 60 undergraduate courses, 20 Master's degree courses and 2 PhD courses. Its student population was composed of 25.401 students, 68% of them being male and the remaining 32% female students. The academic staff went up to 1.483 lecturers, of which 75% were male and 25% female (UEM, 2010).

### **Pedagogic University (UP)**

The UP was founded in 1985 to replace the UEM Faculty of Education, which had closed by that time. It commenced its activities in 1986 with three faculties, offering four Bachelor's courses. Today the UP has expanded to all the provinces in Mozambique. According to information gathered from the DICES data base, on 2010 the UP was offering 83 Bachelor courses. It had 39.379 students, being 24.010 male and 15.369 female students. UP

academic staff was composed by 1.030 lecturers, among which 789 are male and 232 female lecturers.

### 1.9 Explanation of concepts

**Professional development** – any formal, non-formal or informal initiative beyond initial training whereby the lecturers as professional practitioners obtain knowledge and/or skills that can transform professional practice and/or professional identity (Frick & Kapp, 2009:257).

**Reflection** – generic term for the intellectual and affective activities in which the practitioner engages to explore experiences in order to lead to new understanding and appreciation (Boud et al., 1984:19). It is an inter- and/or intrapersonal process through which personal and professional learning takes place (Knowles, 1993). Mezirow (1990) shows that it entails focusing on assumptions about the content of an experience, and the processes and procedures encapsulated in such experience that might help the practitioner to decide on how best to perform in future occasions.

**Critical reflection** – the process by which practitioners identify the assumptions governing their actions, locate the historical and cultural origins of the assumptions, question the meaning of assumptions and develop alternative ways of acting (Fook, White & Gardner, 2006). We can describe critical reflection as the sort of analysis that serves to challenge notions of prior learning, since it occurs when patterns of people's beliefs, goals or expectations are scrutinised by means of thoughtful questioning (Van Halen-Faber, 1997). Adhering to Brookfield (1995) I believe that critical reflection entails questioning knowledge, assumptions and practices that seem to make the practitioner's life easier but actually work against own best interests.

**Whole brain model** – the metaphoric representation of the brain as divided into four quadrants, each one composed of diverse features. The A quadrant represents a strong preference for thinking analytically, logically or for quantifying. The preferential modes of the B quadrant are controlled, structured, and organised thinking modes. The C quadrant shows a strong preference for being involved in and sharing experiences with others, and hands-on

activities. Individuals with a D quadrant dominance appear to have a strong preference for holistic, imaginative and intuitive thinking (Herrmann, 1995, 1996).

**Herrmann's brain dominance instrument** – inventory developed by Herrmann (1995) to identify the individual's brain profile. It entails 120 questions, some of which are blind questions whose implications are not generally known (Herrmann, 1995). The HBDI inventory shows the respondent's brain profile in a four-digit numerical code, indicating the number assigned to each quadrant. Hence code 1 represents a primary or strong preference; code 2 stands for a secondary preference (i.e. neither preference nor avoidance); the tertiary preference or area of potential avoidance is represented by preference code 3.

**Learning style flexibility** – approach to facilitating learning informed by the whole brain model (Herrmann, 1995, 1996). LSF regards the learner as a whole person, who not only plans and analyses facts, but who can also be emotionally involved, experiment, integrate and synthesise facts. LSF is founded on the assumption that every learner has a primary, secondary and tertiary/avoidant preference for one of the four modes of knowing or brain quadrants. Therefore LSF calls for the adoption of strategies of facilitating learning that involve the whole-brain. This call is more emphasised when we take into account that a group of learners considered in its entirety predictably consists of a composite whole-brain.

**Action research** – the vigorous application of eclectic research methods by a practitioner to investigate his/her own practice with a view to innovating or transforming such a practice and constructing new meaning (Du Toit, 2010:4). In line with other authors, I understand that action research is participatory, collaborative and emancipatory. It is participatory because it implies that the practitioner carries out research on his/her own practice and hence produces his personal living theory. It is collaborative because it engages the practitioner in examining his/her professional practices in social interaction (Kemmis & McTaggart, 2005). Action research is emancipatory since it entails the practitioner taking increased responsibility for the development of his/her own practice, understanding and situations (Carr & Kemmis, 1986) and relying less on support provided by outside-researchers.

**Constructivism** – theory according to which learning results from the active construction of knowledge by the learner. Accordingly, it asserts that concepts are not just transferred from facilitator to learner – they have to be conceived. Within this process of forming concepts, each learner is supposed to form his/her construction and, through social interaction and negotiation of meaning, the composite group of learners form rules and conventions (Driscoll, 2000). Consequently, two important assertions are made here. The first indicates that the process of knowledge construction is adaptive and requires self-organisation (Fosnot, 1996). This means that the learner does not just acquire the information. He/she has to change the structure of such information or his/her internal structures to achieve a higher level. The second assertion regards the socially-embedded nature of this process which implies that the construction must be seen as a dynamic process that involves negotiated interaction of individual interpretations and transformations.

### **1.10 Chapter demarcation**

**Chapter 1** – In this chapter I concentrate on presenting preliminary information regarding the study, namely the context, the statement of the problem, the research questions, research design and sites, as well as the definition of the main concepts underlying the study.

**Chapter 2** – here the focus is on reviewing literature and ensuring that I have addressed the main issues that have been captured through the research questions. This chapter helps address my innovative ideas raised through the research questions.

**Chapter 3** – In this chapter I outline the procedures I have gone through in searching for answers to the questions I addressed. In the chapter I present action research as the overarching methodology I adopted, complemented by mixed-methods. Then I include issues pertaining to data collection techniques, data analysis, as well as ethical considerations I have adhered to.

**Chapter 4** – in this chapter I present the findings from the empirical study. It entails the results of the semi-structured interviews and the questionnaire on innovative practice that I administered to lecturers within different HEIs. This part provides the baseline information for the study. The second part of the chapter shows the results of the action research per se.

Therefore it comprises my two cycle action research and the data I gathered in learningshops and during mentoring sessions. Such data appears mostly embedded in the case studies of action research carried out by my fellow lecturers as research participants. The last part entails the lecturers' reflections as nested within their brain profiles. I use such reflections to find a match with the whole brain model, in the pursuit for the model of learning style flexible reflection.

In **Chapter 5** I present the conclusions I have drawn based on the research questions and the analysis of data relevant to the questions. Then I present the study's implications for theory, practice and for policy implementation.

In **Chapter 6** I present the reflection I carried out on my action research. Hence I call it meta-reflection. I describe and discuss the learning events that I have implemented in this process. I have divided such reflection into three moments, namely anticipatory reflection, contemporaneous reflection and retrospective reflection.

## CHAPTER 2: Theoretical Framework

### 2.1 Introduction

In this chapter I present the theoretical perspectives relevant to lecturer professional development as informed by critical reflection. As a result of the literature review carried out, I composed the theoretical framework against which I expect to validate the empirical study and interpret the results in order to illuminate future perspectives within relevant studies.

I start by presenting my idiosyncratic model of professional development. Afterwards I present a synthesis of the contemporary discourses in professional development literature. Next I proceed to explain some models of professional development. In the last part of professional development section, I discuss this professional development study as informed by learning theories. Then I explain the origins and features of the whole-brain model and Learning Style Flexibility. Following that I describe the multiple intelligences theory as informing this study. Finally I discuss reflection, critical reflection and its link with the Learning Style Flexibility.

### 2.2 My idiosyncratic model of professional development

The present action research report is the account of my experience with my fellow lecturers as co-learners to promote professional development through critical reflection on our transformative learning on professional practice. I carried out this study on the assumption that, although I was at the forefront, facilitating, mentoring and coordinating all the activities, our relationship would be one of reciprocal influence. My postulate was that throughout the journey we could put to work actions emanating from values of freedom, equality, and collaboration. We were co-learners within an unique context where our professional learning continuously takes place. We created our knowledge in a collaborative process. However I am aware that our answers are provisional and that our conclusions concerning our experience might or might not fit other contexts. Hence I do not aim to propose a formula for professional development programme or intervention. Nonetheless, I concede (and expect) that due to its link with the main theoretical instances, it might be useful for other initiatives, either practices or studies, illuminating them.

My theoretical framework, represented in figure 2.1, is a tentative model of professional development as applied to my context of promoting fellow lecturers' critical reflection about their practice. It acknowledges the dynamic and multi-faceted character of the context within which professional development takes place.

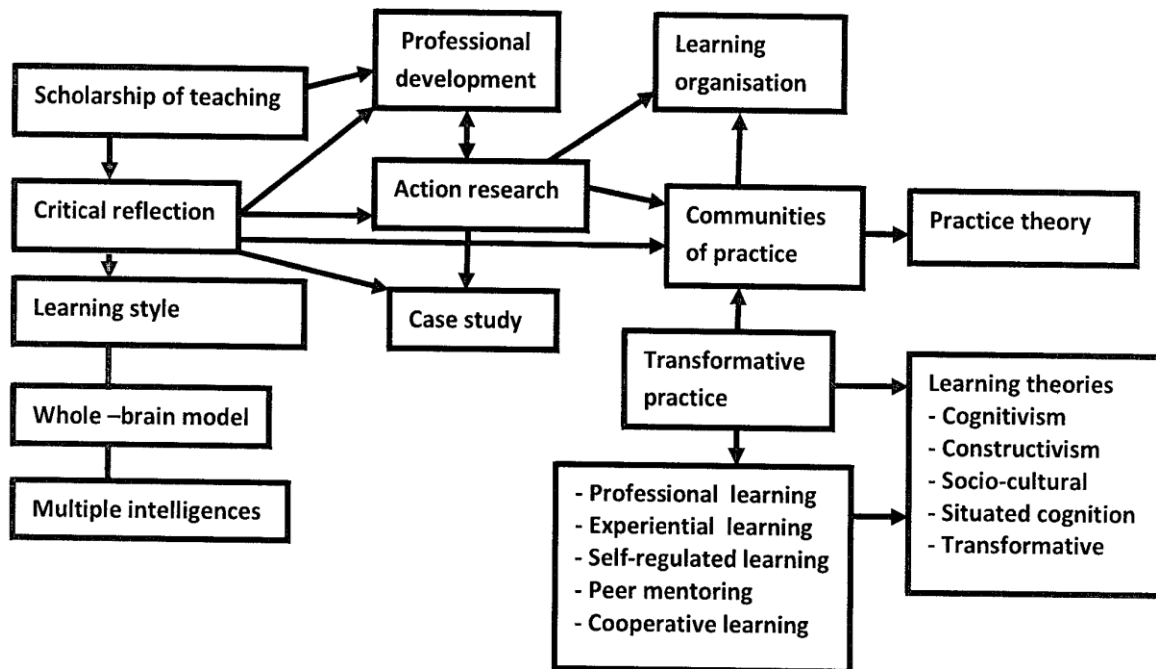


Figure 2.1: Theoretical framework for professional development through critical reflection

While conceiving the model, I present in figure 2.1, I am aware that critical reflection is the cornerstone, catalyst and vehicle of professional development as many authors have indicated that (Beatty, 1998; Clegg, Tan & Saeidi, 2002; Quinn, 2003; Savaya & Gardner, 2012).

My theoretical framework is grounded in the epistemological view that social phenomena, such as professional development, occur within a setting that is composed of and results from multiple, dynamic, and following Hitchcock and Hughes (1995), complex layers of meanings, interpretations, values and attitudes. It acknowledges that institutional contexts have different perspectives since the actors operating within them portray idiosyncratic backgrounds, and educational life histories.



From this theoretical framework I portray critical reflection as the epicentre of the study, as Figure 2.2 shows. I do so because critical reflection is linked to other concepts with mutual impact. For instance, critical reflection occurs within experiential learning, mediating what the practitioners have done and formulating general principles concerning the event; it is one of the vehicles of peer mentoring; and it appears to occur within constructivist learning when the learner is challenged to make meaning through synthesis between his/her prior knowledge and the new experience.

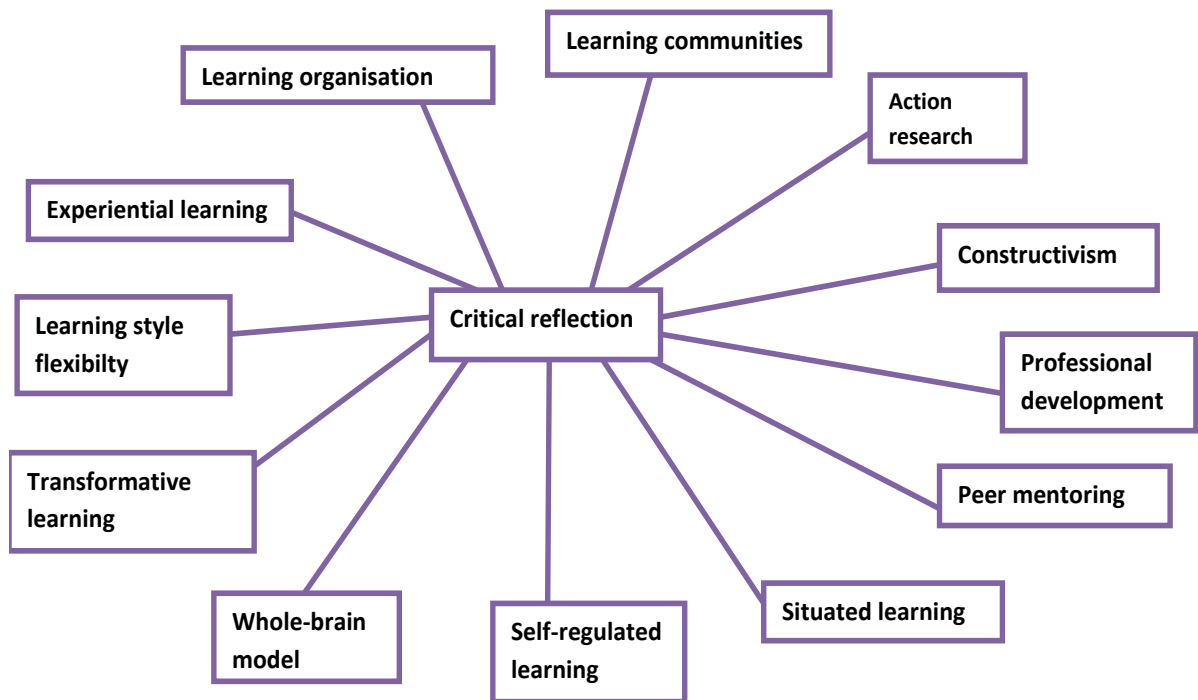


Figure 2.2: Critical reflection as the epicentre of the study

Critical reflection occurs within communities of practice that provide space for new lecturers to move towards full participation through sharing, confrontation, exploration and communication of experiences (Philips, 2003). I find critical reflection occurring within learning organisations, since, among others, it is involved in lifelong learning required of professionals to achieve personal mastery and it occurs within collaborative activities that contribute to team learning and shared vision (Senge, 1997). Finally, I regard critical reflection as central to transformative learning, since it assists the learner to revise and make deep shifts in his/her frames of reference (Mezirow, 1997a; Cranton, 2010).

Within the remainder of the chapter I discuss the concepts portrayed in the two figures above (Figures 2.1 and 2.2), along with their contribution to the current study. I try to align the themes with the research questions guiding the study. Therefore I start with discussions on professional development, its processes and the main issues raised about this process within the scholar community. Then I proceed to the presentation and discussion of the whole brain model, (Herrmann, 1995; 1996) which provides the foundational theory for the study. Among others, I explain its origins, its features and its location within the big field of research on learning styles, as informed by the report of Coffield et al. (2004). Then I explain learning style flexibility (LSF), which draws on Herrmann's model. In between I present and discuss some research carried out within this field. Then I discuss critical reflection as it is linked to professional development and whole brain theory.

### **2.3 Professional development**

Professional development appears to be a pivotal arena for transformation in the lecturer's professional practice. Despite its concern with solving problems inherent to the HEIs – the major provider of training and solutions to other professionals – it is still surrounded by discussions about its definition, purposes and strategies. Looking at developing countries, such as Mozambique, the need for professional development for academic staff appears to be pressing. In this regard the Task Force on Higher Education and Society contends that

*a well-qualified and highly motivated faculty is critical to the quality of higher education institutions. Unfortunately, even at flagship universities in developing countries, many faculty members have little, if any, graduate level training. This limits the level of knowledge imparted to students and restricts the students' ability to access existing knowledge and generate new ideas. Teaching methods are often outmoded. Rote learning is common, with instructors doing little more in the classroom than copying their notes onto a blackboard. The students, who are frequently unable to afford a textbook, must then transcribe the notes into a notebook, and those students who regurgitate a credible portion of their notes from memory achieve exam success (2000:23).*

This citation captures the situation of HE in Mozambique, where the lecturers' qualification level is still a critical point to the extent that more than 60% of the academic staff holds only a Bachelor's degree, while the remaining have a Master's and Doctorate (Mário et al, 2003; Direcção de Coordenação do Ensino Superior, 2006; Ministério da Educação e Cultura, 2006; Campos, 2011). Another aspect is the imbalance in the distribution of lecturers with postgraduate qualifications in the different fields, with more lecturers with doctorates in the

Humanities and Arts, and a shortage of lecturers with a Master's qualification in the fields of engineering, manufacturing and construction (Campos, 2011). For this reason the Mozambican Government envisages that, within five years, at least 75% of HE lecturers should have obtained a Master's or Doctorate (Ministério de Educação, 2009a).

The other criticality within the Mozambican subsystem of HE is the lack of courses such as a Postgraduate Certificate in Higher Education, which leaves lecturers with the only alternative, namely to attend psycho-pedagogic training that will form the basis for their promotion (Campos, 2011). To make things worse, the system is still struggling to provide furnished libraries and IT facilities conducive to the adoption of learning-centred approach. Within this context, more than other efforts, the professional development of academic staff appears to be crucial to improve the quality of facilitating learning.

Professional development involves both experience and a systematic approach to learning through reflection, conceptualisation and planning (Beaty, 1998). It presupposes the lecturer's continual growth through his/her working life. Zuber-Skerritt defines it as

*development, self-development and institutional management of faculty (or academic) staff at all levels with reference to their activities and responsibilities as teachers and managers in HE (1997:145).*

This definition appears, on the one hand, to accommodate the entire set of opportunities that an academic (as lecturer, researcher and manager) has to further his/her repertoire of knowledge and skills. On the other hand, it envisages professional development as a process entailing efforts towards reaching both the lecturer's and the institution's aims. I reckon that professional development of individual lecturers must result in the improvement of the institution; I find this definition quite broad, especially because in my study I concentrate on the individual lecturer process.

Frick and Kapp present a more narrowed definition to which I adhere. Accordingly, they view professional development as

*any formal, non-formal or informal initiative beyond initial training whereby the lecturers as professional practitioners obtain knowledge and/or skills that can transform professional practice and/or professional identity (Frick & Kapp, 2009:257).*

In this study, accommodating the definition above, I organize an experimental professional development intervention for practicing lecturers. Since this experience occurs within an organised and structured context and leads to certificate, I visualize this as formal learning initiative. Still, I find it being linked to their informal and non-formal learning.

The definition presented by Frick and Kapp sheds light on the possible ways in which I think professional development might occur and is attuned to the development of lecturer's competency conducive to increased performance of scholarly roles, including discovery, teaching, engagement and integration.

### **2.3.1 Contemporary discourses in professional development**

Given the complexities, pluralistic and contested conditions of the world in which contemporary higher education operates, professional development is more than just an option. Lecturers are increasingly being urged to prepare graduate students who should be able to solve the problems of today, equipped with tools to solve forthcoming ones. Therefore, the lecturers themselves, due to the uncertain, chaotic and unplanned nature of knowledge (Brew, 2007) are expected to adopt efforts conducive to keep abreast of such a changing world. However, the field of professional development is not without major contestations, as literature shows. Accordingly, I could find that the major contemporary issues within this field include the identity and role of professional developers (Carew, Lefoe, Bell & Armour, 2008; Rowland, 2007), professional developers agency (Mathieson, 2011), professional development as new dimension of scholarship (Brew, 2003; 2010; Macdonald, 2003), and orientations of professional development (Boud, 1999).

Concerning the roles of professional developers, the literature shows that they have changed over time, as can be demonstrated from Boud (1999), who identified four phases of professional development that imply different roles. The first phase includes professional development as embedded and visible in academic life, where there is no extrinsic notion of this process. In my view the values of academic autonomy and responsibility are the main obstacles for interventions purposefully conceived to promote lecturer improvement. The second phase views PD as moral imperative, where the developer has the role to promote teaching improvement in order to cope with changes of population, motivation and student diversity. As Jones (2010) points out, within this phase lecturers are in need of support since

teaching is in need of development. The third phase views PD as corporate policy, guided by the idea that academic staff are a resource that needs to be trained and deployed for the strategic objectives of the institution (Boud, 1999:4). The fourth phase consists on PD being regarded as multi-dimensional and distributed. In this phase there is awareness of the growing complexity of the HE context. Accordingly, the responsibilities for promoting professional development are distributed across corporate, faculty, and individual levels (Boud, 1999). In this study, in recognising that learning and development has to be promoted at or in close conjunction with the sites of lecturer practice, I adhere to the idea of professional development as multi-dimensional and distributed. Therefore, through learningshops and peer mentoring, I seek to promote strategies for lecturer-initiated peer learning to assist oneself to take increasing responsibility for one's professional development. I further contend that working with the fellow lecturers within their natural working settings I intend to consider their human relations as a whole and to reduce a potential power imbalance within the relationship (Budge & Clarke, 2012; Mathieson, 2011).

Land (2003) proposes an array of professional development orientations, which I find applicable to this study. Such array includes professional development having managerial, political strategist (investor), entrepreneurial, romantic, vigilant, opportunist, researcher, professional competence, reflective practitioner, internal consultant, 'modeler-broker', interpretive-hermeneutic, and discipline-specific orientations.

I envisage this study adhering to different orientations, as I explain in the following lines. The association with the romantic orientation is apparent from my efforts to promote the personal development and growth of the individual lecturer within the organisation (Land, 2003:37). Researcher orientation emanates from my engagement with my fellow lecturers in an effort to co-construct our knowledge as part of our educational action research, as well as from my operational emphasis being on the community of practice that I constitute with them. Since I have as objective the building of confidence of fellow lecturers by enabling them to demonstrate achievement of a prescribed set of professional outcomes (Land, 2003:41), I want this experience to adhere to the professional competence orientation of professional development. Through reflective practitioner orientation I try to encourage a culture of self- or peer-evaluative critical reflection among colleagues, to assist them in coping with uncertainties and ambiguities that feature in higher education (Land, 2003). Finally the

adoption of the interpretive-hermeneutic orientation is associated with the dialectic or dialogic approach I embrace within learningshops and peer mentoring with my fellow lecturers in order to balance our different views, confront our experiences, relate to local wider perspectives in order to lead to critical synthesis and production of new shared insights and practice (Land, 2003).

While assuming these orientations to professional development I will accommodate three key instances of the contemporary approaches to professional development, namely the scholarship of instruction and learning, evidence-based, and value-based practice.

The scholarship of professional development is the new and increasingly discussed dimension of scholarship as it is evidenced by a publication such as the one edited by Eggins and Macdonald (2003). Boyer (as quoted by Buskist, Carlson, Christopher, Preto & Smith, 2008) paired the scholarship of teaching with three activities: discovery, integration and application. Paulsen (2001) suggests that the foundation for scholarship of teaching lies in the development and application of content knowledge, pedagogical knowledge and pedagogical content knowledge. For him this knowledge plays a central role in the scholarship of teaching since it provides the symbols, ideas, theories and other forms of knowledge representation, as well as modes of inquiry that constitute the foundational knowledge for effective efforts of facilitating learning.

With regard to the scholarship of professional development, Brew (2010) carried out a study through which, among others, she aimed to determine the understanding of scholarship by academics. She found that academics understand the concept in many ways, including preparation for research, reading and groundwork, creating and disseminating new knowledge, and most interestingly for her, qualities of meticulousness and rigour associated with academic work. Macdonald (2003) agrees with Brew that scholarship of professional development means “quality variation”. In this study, I adhere to the concept of scholarship of professional development to the extent that, informed by Gosling (2003), I promote my fellow lecturers’ professional learning as characterised by critical reflection, systematic investigation and evaluation of practice, as well as sharing knowledge with the whole members of the self-reflective community and other interested lecturers.

A second example relates to the idea of evidence-based practice, which implies that professional development efforts are informed by expert knowledge or, as Brew (2003) says, personal experience of practice (praxis). Accordingly, Gosling (2003) argues that it seems reasonable to assume that practice is improved by its being informed by systematic collection of data. The result of this, since such evidence is generated through public, not private processes, might be reduced prejudice (Mann, 2003). As exemplar of evidence-based practice in this study, me and my fellow lecturers, we adopt action research as our inquiry into our practice aimed at generating our evidence, validated through critical reflection we engaged in within our self-reflective community (Mann, 2003:88). Still, as I referred to before, this study is value-laden as well, since the values give direction to our practice. In accordance, Mann advances that

*it therefore seems to me that the key task for the practitioner is not to seek evidence upon which to make a judgment, but to make explicit the different values, beliefs and assumptions implicit in all accounts of educational policy, research theory and in their own practice. In this way, the practitioner may be more able to make a judgment as to which position they would most want to adhere to, and thus which forms of inquiry and evidence are most appropriate to their position. This last judgment can only be made on the basis of value, that is, it can only be made on that basis of what the individual practitioner takes to be the most appropriate models of human beings and human action for education, teaching, learning, and research into these (2003:89).*

Rather than opposition, I find complementarities between the positions above. Hence, as practitioners, we live according to values such as freedom, collaboration and equality, which we make explicit. In order to show that I am successful in practising according to such values I have to match it against some sound evidence. This position appears to be complemented by Webber, Bournier and O'Hara (2003) who argue that once it is clear that my ideas, making my values, beliefs and assumptions explicit, can work, I am in a position to disseminate evidence of my practice. In this way it will enable other practitioners in their field to try, evaluate and possibly adopt the new development.

### **2.3.2 Models of professional development**

In the previous section of this chapter I have indicated that my review of different journal articles and book chapters showed me that most of the current discussions within the field of academic professional development revolve around issues such as scholarship of professional development, orientation, roles, agency, and so forth. Interestingly, and significant for the current study, is the emergency of studies seeking to describe and/or map



the models of professional development occurring in different countries, as it is illustrated by the studies of Gosling (2009), Harper, Gray, North, Brown and Ashton (2010), Hicks (1999), Hubball and Poole (2003), and Quinn (2003).

The significance of these studies reminds me of one of my research sub-questions, namely *To what extent is reflection integrated within existing PD interventions in the Mozambican context of Higher Education?* I regard this question as requiring the description of the perceived or documented existing model(s) of professional development in Mozambique, before I ascertain the integration of (critical) reflection within it.

In Chapter 1 I explained that the promotion of professional development in Mozambique, after independence, is associated with efforts that occurred in the two main periods that can be identified from 1975 to the present. Therefore, between 1976 and 1992, training for HE lecturers was closely linked to the activities carried out by the UEM and was determined by the country's development conditions during the post-independence period (Ministério da Educação, 2009a). Hence, professional development included mainly hiring and training new Mozambican academic staff, and curriculum development and reform aimed at harmonising the curricular structure with the immediate needs of the labour market. In the beginning, graduate students from the UEM were sent to partner countries, mostly socialist, to pursue their Master's and Doctorates in priority areas (Ministério da Educação, 2009a), especially with the aim to fill the gaps created when many Portuguese people fled the country, leaving behind the whole education system with a lack of qualified staff.

Within this period the HEI subsystem broadened its international cooperation with other universities and agencies from countries that sponsored diverse activities, including teaching and research. This included openness for cooperation with Western countries, such as the UK, the Netherlands, Sweden and so forth. According to the Minister for Higher Education, Science and Technology (2000), in the same period, the UEM offered short courses for workers in order to have them ready for their new functions. I find all of these efforts contributing to the development of

*continued staff training, in order to raise educational levels and the professional competence of staff, through national, regional and international postgraduate training and short courses* (Minister for Higher Education, Science and Technology, 2000:16).



After 1992, with the rapid growth of the number of HEIs, the efforts to promote PD were apparently concentrated on training the academic staff at post-graduate level. This position is sustained by the composition of academic staff within HEIs, which shows that more than 60% of the 1 880 Mozambican lecturers have only the equivalent of a Bachelor's degree (Mário et al., 2003; Direcção de Coordenação do Ensino Superior, 2006; Campos, 2011). In addition the Strategic Plan for training HE lecturers defines objectives that include mainly ensuring that all the lecturers should obtain master's and doctoral qualifications within a certain time span (Ministério da Educação. 2009b). Presently the Centre for Academic Development (CAD) at the UEM is the reference of unit for professional development in Mozambique. The CAD replaced the Staff Development Project (STADep) offered by the UEM under the support of the Royal University of Groningen in the Netherlands and is responsible for organising professional training courses for academic staff (Mandlate, 2003).

The pursuit of models of professional development shows that there are different models, which might show how complex and multifaceted this process is. What I am going to do in the next paragraphs is not to exhaust the documented existing models, but rather to highlight those that appear to aggregate the main features that can contribute to composing a framework for my study.

Looking at the different countries' models of professional development, I see certain similarities and differences. One of the aspects highlighted is the difference in terminology. I have found that the designations extend from educational, through academic to professional development. Such diversification according to Hicks (1999) may indicate difference in emphasis or reflect regional differences. The other aspect regards its structures. Here I could find that in general there are units that are in charge of coordinating the interventions. But then a considerable variation occurs, either within one country or across different countries and/continents. Basically I have found that such diversification fluctuates between local unities at department/faculty level and central university units.

Apparently, in most of the models that I have reviewed, the process of supporting academic staff for improving educational processes and practices is located at the central level (Gosling, 2009; Hicks, 1999; Hubball & Poole, 2003; Harper et al., 2010). Concerning the responsibilities there appears to be variances as well. For instance, Hicks (1999) indicates

that some central units in Australia focus on instruction and learning, while others have a broader focus, including development of research and leadership within the university. In turn Gosling (2009) found that diverse centres indicated that their roles included contributing to the institution’s instruction and learning strategy, employability, plagiarism, peer-mediated reflection on teaching and peer observation of teaching. In relation to their responsibilities he found that all the centres assumed that it was their role to encourage innovation and change in instruction and learning. Conversely, he found that very few assumed responsibility to promote and/or carry out research.

When it comes to their functionality, almost all the models assume the responsibility for facilitating lecturers’ professional learning or organising opportunities for its occurrence. To a certain extent all of the models acknowledge reflection as an essential component of such professional learning. In some cases (Harper et al., 2010; Hubball & Poole, 2003; Quinn, 2003) the importance and integration of reflection is explicitly stated, while in others (Gosling, 2009; Hicks, 1999) the occurrence of reflection can be inferred from the mention of one-to-one assistance to individual academics, collaborative activity and informal mentoring (Hicks, 1999). All these activities are associated with the promotion of reflection.

A part of the experience of CAD, the other documented references to academic professional development in Mozambique concerns the provision of formal training at the master’s and doctoral levels (Brito et al., 2008; Mario et al., 2003; Ministério da Educação, 2009b). Such focus on formal training characterises the Mozambican context as more concentrated on formal activities within the model proposed by Jasper (2006), depicted in figure 2.3.

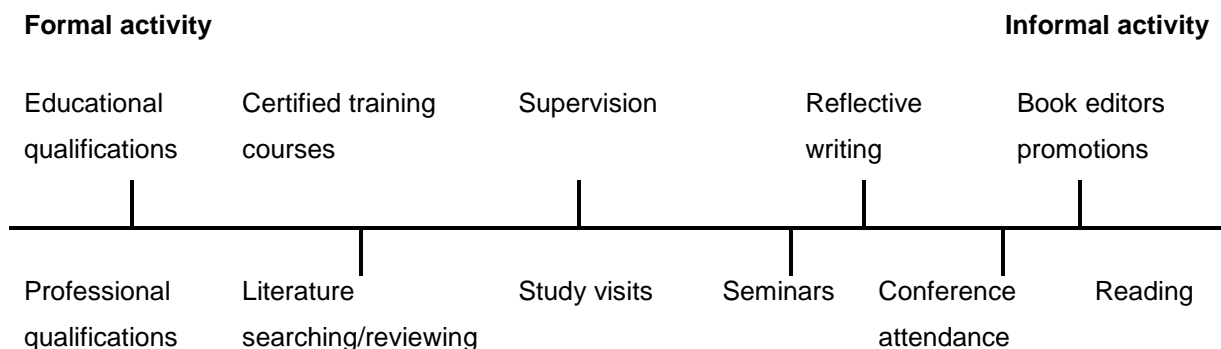


Figure 2.3: Linear model of professional development activities (Jasper, 2006).

This model places the different professional development activities along a continuum from formal to informal ones. The formal extreme includes professional qualifications and certified training courses, while the informal opposite incorporates readings and reflective writing, among others. Although I agree with the inclusion of most activities presented by Jasper, I find it questionable the deliberate indication of reflective writing, while most professional development activities are required to include reflection as its essence.

The linear model of Jasper appears to match Ferman's (2002) the proposal, which differentiates formal from informal PD. The formal ways range from publications and conference attendance to working with an educational designer, while informal methods comprise conversations with colleagues, receiving informal feedback from colleagues and students, and mentoring. While this allows the accommodation of the formal and informal professional development activities, it does not distinctly provide clear mention to non-formal dimension of professional development. Recall that much of professional learning is non-formal and takes places alongside the mainstream system of higher education (Knight et al., 2006). Within Jasper model, I find this study located halfway between supervision and seminars, since it consists of learningshops and mentoring which include elements of both.

Osterman and Kottkamp (1993) suggest two models of professional development, namely the traditional and the reflective practice model. The traditional model is driven by the assumption that theory, thoroughly understood, leads to good practice and places the PD instructor at the centre of the activities, making presentations. I find one of this model's shortcomings consisting of the detachment of theory and practice within a context where it is increasingly acknowledged that the essential aspect of professional learning is to *become* a better practitioner, rather than learning *about* best practices (Brown & Duguid, 1991). This limitation appears to be surpassed by the reflective practice model, which stands on the assumption that behavioural change is associated with creating opportunities for lecturer to identify formerly unrecognised theories that illuminate one's professional practice. Here the facilitator of learning provides information, discusses with lecturers-as-learners or even lets them engage freely in discussion of their experiences. The significance of the reflective practice model to this study is utter, since I promote my fellow lecturers professional development as an opportunity for them to share knowledge, ideas and experience of facilitating their students' learning while analysing the various factors that shape their

practice (Mathieson, 2011). It occurs within a context that emphasises learning, support and encouragement rather than teaching, direction or transfer of knowledge.

A third model is advanced by Pill (2005), who carried out a study with the aim to identify models of professional development employed within different higher education institutions in the UK. Hence, she distinguished four methodological models in use, including reflective practitioner, action researcher, novice to expert, and metacognitive approaches. Three of these models are relevant to this study, namely the reflective practitioner, action researcher, and metacognitive approaches. Concerning the reflective practitioner, I find applicable the explanation that I presented in the previous paragraph. The action researcher appears relevant since in this study I adopt this paradigm enlightened by my belief in it as a powerful process to promote professional learning from experience, promoting an interplay between practice, reflection and learning (McNiff, 2002). Finally, as I will explain within the next section, in adhering to metacognitive approaches, I acknowledge that transformation within lecturer's practice is associated with increased awareness of his/her preferences and avoidances (or strengths and weaknesses), which is conducive to internal change.

Zuber-Skerritt (1992) proposes the CRASP model of professional development, which I discuss in chapter 3. She presents a set of professional development methods and strategies, including seminars and workshops, distance teaching, peer consultancy, appraisal and self-appraisal of teaching, curriculum development and organisational development. Although there are strategies that appear to go beyond the scope of the current study, some of them are matched to my study. For instance, I adopt learningshops (a learning-focused version of workshops) to promote critical reflection, I adhere to peer mentoring, which like peer consultancy, puts emphasis on two-way learning between colleagues, and use video-recording as instrument for lecturers to self-appraise their practice.

From the suggestions of models, approaches, and strategies advanced by these scholars I can devise four models that result from crossing the formality dimension to the traditional/reflective practice one. As I depict it in table 2.1 these are the formal-traditional, the formal-reflective practice, the non-formal-reflective practice, and the informal-reflective practice.

The information that I present in Table 2.1 is aligned with the definition of professional development that I adopt in this study. It considers professional development as occurring as a result of three kinds of activity: formal, informal or non-formal. In conformity with these I classify the models of professional development. It is noticeable that within the formal category, as informed by Osterman and Kottkamp's (1993) categorisation, I distinguish traditional from reflective practice models.

Table 2.1: Models of professional development

	Traditional PD	Reflective practice PD
<b>Formal</b>	Short-courses	Research publication
Intentionally organized;	Post-graduation courses	Project-based work
Leading to certification	Formal training	Self-appraisal
	Distance education	Conference attendance
	Teaching appraisal	Workshop attendance
	Organisational development	Community engagement
<b>Non-formal</b>	None	Reading
Intentionally organized;		Mentoring
Not leading to certification		Consultancy
		Scientific research
		Curriculum development
<b>Informal</b>	None	Networking
Not necessarily intentional;		Students feedback
Not leading to certification		Supervision of students
Barely viewed as adding knowledge		Conversation with colleagues

## 2.4 Professional development as informed by learning theories

I carry out this study illuminated by Frick and Kapp (2009) who propose that professional development entails any formal, non-formal or informal process that is conducive to lecturers' acquisition of knowledge and/or skills so that they can transform their professional practice and/or professional identity. Therefore my belief is that any occurrence that might be conducive to professional growth (not just change) is professional development.

Evans (2002) suggests four dimensions that compose the professional development, namely intellectual, motivational, procedural and productive. I see motivation as a dispositional aspect, which is not amenable to be framed within professional development. Therefore, I adhere to the idea of professional development consisting of developmental changes at three dimensions, namely intellectual, procedural and productive. These elements, along with the sets of activities that appear to be their cause and mediated by critical reflection, are the parameters of this study.

Since professional development consists mainly of the acquisition of new knowledge and skills, I find it explained by learning theories. Besides, because academic professional development implies a learning process in which lecturers as adults are involved, I find certain theories of adult learning applicable as well. Therefore, in the next sections I present different adult and/or learning theories and discuss their relevance to the current study.

#### **2.4.1 Constructivist theories of learning**

Constructivism is a reaction to behaviourism-objectivism that explains learning as a system of behavioural responses to physical stimuli and views knowledge as achieved by drilling performance. Constructivism emphasises that learning does not entail filling up learners as passive containers. Rather, learning must be conceived as a result of an active effort of the learner who seeks to make meaning of the subjective reality (Driscoll, 2000).

The emergence of constructivism is associated with Jean Piaget and Lev Vygotsky. Piaget, whose theory was labelled *genetic epistemology*, was mainly concerned with how children construct knowledge. He suggested that during their maturational process children develop mental schemes and schemata that allow them to make sense of environmental stimuli through assimilation and accommodation. These two processes, components of the equilibration, might be the paramount in Piaget's constructivism. In this regard Piaget advanced that when the learner is under pressure of the environment, his/her mental equilibrium is imbalanced. In order to attain equilibrium, he/she might adopt self-regulated behaviour consisting of two poles: assimilation or accommodation. Through assimilation the learner re-works his/her logical structures or understandings. Through accommodation the learner changes his/her self in order to explicate the object. Both of these processes entail an active learner effort to construct new meaning conducive to new equilibrium. In this study

Piaget's perspective emerges when the lecturers (as learners) are actively engaged in analysing their experiences of facilitating learning with the aim of making inferences, comparison, and associations in a process of constructive new knowledge.

Vygotsky, the proponent of social constructivism, contends that the learning process cannot be dissociated from social interaction. One of his prominent ideas is that the ways in which people think, acquire knowledge and interpret the world are determined by their social experience. For Vygotsky, while the group is crucial for the process of learning, the social interaction has an instrumental role, allowing the learner to grasp the meaning. In this regard Mezirow makes the following statement:

*Vygotsky argues that cognitive categories are social in origin, as are the forms of thought in which these categories are embedded. Consequently, understanding is inherently a social rather than a biological act; it cannot be cut away from the sociocultural circumstances of the agent (1997a:4).*

In this study, while acknowledging the importance of social construction, I organize many opportunities for social interaction between lecturers (as learners) where the agency of all lecturers (as learners) contributes to their mutual learning. Vygotsky's emphasis on the social character of learning is further expressed in acknowledging the importance of the facilitator of learning, who plays a key role in the Zone of Proximal Development (ZPD). This concept stands for the difference between what a novice lecturer can do alone, and what he/she can do with the help of an experienced or a knowledgeable colleague, so that he/she can perform it alone.

Contrasting positivistic views, Lather (2006) suggests that there are many truths and only by means of communication we can attain knowledge since it is not given or it is not out there to be discovered. Professional learning entails the lecturer-as-learner constructing new knowledge, thoughts and ideas and not material conditions. He/she does so building on his/her prior knowledge and experience.

Fosnot (1996) makes two assertions about constructivism that I find applicable in this study. On the one hand she argues that the process of knowledge construction is adaptive and requires self-organisation. In this regard, as part of their professional development, my fellow lecturers (as learners) when confronted with new demands of their professional

practice, have to acquire new knowledge, organise their mental schemes in order to adapt to a new context. On the other hand, Fosnot indicates that since the process is socially-embedded, the construction must be seen as dynamically evolving, negotiated interaction of individual interpretations, and transformations. In this study me and my fellow lecturers, we share our experiences and perspectives within a process that requires negotiation of meaning, construction of individual interpretations, and is conducive to transformations within one's practice.

Von Glasersfeld (1995), a radical constructivist representative, asserts that concepts cannot simply be transferred from facilitator to learners – they have to be conceived. This assertion highlights the importance of learning from experience since what the learner sees, hears and feels is embedded in the instances in which he/she as learner is engaged, and this results in knowledge construction. Therefore, not all constructions have necessarily to resemble the outside world as it really appears to be (Driscoll, 2000). In this study, each of us as co-learner might form his/her construction and, through negotiation of meaning, the composite group of lecturers-as-learners will form rules and conventions (Driscoll, 2000).

Adapted mainly from Fosnot (1996), I find the following main ideas of constructivism applicable to this study as an exemplar of professional development:

- Learning is development. In this study I allow my fellow lecturers to pose their own questions, generate own hypotheses, sort out relevant possibilities, and test them for viability.
- Disequilibrium facilitates professional learning. By inviting them to implement LSF and carry out their action research I challenge my fellow lecturers and provide them with opportunities for open-ended investigation in realistic, meaningful contexts.
- Reflective abstraction is the driving force of learning. The core of this study entails the promotion of lecturers' critical reflection through analysis of video-recording of learning opportunities and discussion of different experiences.
- Dialogue with a community engenders further thinking. Accordingly, in this study I seek to compose a community of discourse, where the lecturers-as-learners are responsible for defending, proving, justifying, and communicating their ideas to the whole group.



- Encouraging ownership in learning. In the PD environment I envisage within this study, I do not see lecturers-as-learners as passive recipients of instruction designed for them. Instead, I stimulate them to be actively engaged in determining their professional learning needs and in establishing how these needs can best be satisfied. Therefore, the lecturer's reflections ought to be based on experience and information gathered during daily practice.

#### **2.4.2 Situated learning**

Traditional teaching methods try to convey abstract concepts, defined as predetermined and independent bodies of knowledge that are ready-made to be explored in prototypical examples and textbook exercises (Brown, Collins & Duguid, 1989). Situated learning rejects that position. It views learning as an activity embedded in and animating practice, and practice as shaping learning. It asserts that human thought is adapted to the environment, because people's perception, planning and physical implementation of an activity takes place as joint effort (Clancey, as quoted by Driscoll, 2000).

Brown and Duguid (1991) contend that the central issue in learning is to become a practitioner learning from practice, rather than learning about practice. In this study I approach professional development as a learning process that occurs as a function of the activity and context in which the lecturer operates. In this way I detach myself from those approaches in which most learning activities involve the transmission of abstract theories.

A distinctive aspect of situated learning is the consideration of the socio-cultural setting instead of the individual in the learning process. As Lave and Wenger (1991:37) point out, "learning is legitimate peripheral participation in communities of practice". In the same vein, Brown and Duguid (1998) argue that construction of knowledge does not occur from a position of cognitive isolation or independence. Rather, it occurs as the appropriation of knowledge in practice through mediation and engagement in learning activities drawn from the socio-cultural milieu (Harley, 1993). By adopting learningshops and peer mentoring, I visualise social interaction between me and my fellow lecturers as a fundamental component of professional learning. In this way we compose a community of practice pursuing the same goals of reflecting critically on our innovative lecturing practice. Professional learning consists of lecturers engaged in joint effort, as community, aimed at

acquiring, developing and employing the new knowledge within the authentic domain activity. This approach, according to Byrne, Brown and Challen, (2010) implies lecturers' lengthy engagement in this specific enterprise, which involves sharing knowledge and, more importantly, developing processes of active and collaborative learning.

Among the main implications of situated cognition is the concept of learning communities. Adoption of the situative concept of communities of practice in the learning context implies that their culture has to change. Accordingly, in this study I adopt a social structure in which me, as the facilitator, and my fellow lecturers, we operate collaboratively to achieve important and relevant goals, which are jointly established. In composing communities of professional learners I acknowledge that my fellow lecturers (as learners) bring to the learning setting different needs, interests and experiences, and regard the learning community as an opportunity to share those aspects. In this way I provide the opportunity to lecturers (as professional learners) to acquire a shared vision (Senge, 1997) which is a move towards the learning university, where instead of pursuing competition and linear thinking, professionals engage in collaborative and systems thinking (Patterson, 1999).

### **2.4.3 Transformative learning theory**

Transformative learning theory could be framed within constructivism since it views learning as the process of constructing a new and changed explanation of one's experience based on prior interpretation (Mezirow, 1997a). The theory sustains the need for a dramatic change (transformation) within one's practice in order to reach superior stages. Searching for an elucidative sense of the transformative learning, Cranton (2010) ascertains that it is

*a process by which previously uncritically assimilated frames of reference (assumptions, expectations, and habits of mind) are questioned and revised to make them more open, permeable, and better justified. Experiences are seen through the lens of our frames of reference, which include distortions, prejudices, stereotypes, and unexamined beliefs. When we encounter a perspective that is different from the one we hold, we may be provoked into critically questioning our current thinking (2010:19).*

In this study transformative professional learning occurs when the lecturer changes his/her frames of reference. This entails configurations of assumptions he/she uses to understand own experiences and he/she selectively shapes and sets the boundaries for "expectations, perceptions, cognition and feelings" (Mezirow, 1997b). Two dimensions compose the frames

of reference, namely the meaning perspective and meaning scheme. The meaning perspective entails generalised, habitual ways of thinking, feeling and acting or orientating predispositions that represent sociolinguistic, epistemic and psychological sets of codes. A meaning scheme (or point of view) entails the cluster of specific beliefs, feelings, attitudes and value judgements that accompany and shape interpretation (Mezirow, 1997a).

Following Mezirow (1997a), I claim that in this study I promote a transformative learning process through supporting my fellow lecturers (as learners) to change their frames of reference in order to make them more inclusive, differentiating, and integrative of experience. Such transformation would entail, among others, the adoption of innovative forms of facilitating learning in the pursuit of values such as freedom, justice and equality of opportunities for learners with different learning preferences.

Borrowing from Habermas, Mezirow (1997a) distinguishes instrumental and communicative learning. Instrumental learning aims at acquiring skills to control or manipulate the environment through task-orientated problem-solving. Through communicative learning the lecturer-as-learner ought to understand the purposes, values and beliefs. It requires him/her to be critically reflective of the assumptions underlying such intentions, values, beliefs and feelings. As result instead of simply submitting himself/herself to others, the lecturer-as-learner gains the ability to negotiate his/her own purposes, values and meanings. The lecturer (as professional learner) develops his/her communicative competence by increasing his/her awareness and critical reflective instance of assumptions and by participating freely and fully in discourse (Mezirow, 1997a). Within the current study, communicative learning should occur through the lecturer-as-learner development of a kind of scholarly discourse. I foresee this competence as the ability, built on knowledge of research evidence, to assess, explore or confront reasons presented in support of competing interpretations, by critically examining evidence, arguments and alternative points of view within the lecturing practice. Learning only becomes transformative when the lecturer (as learner) makes a deep shift in how he/she see him/herself and/or the world around him/her and act on the revised perspective (Cranton, 2010).

#### **2.4.4 Andragogy – the adult learning theory**

Academics' professional development involves learning or transformation within individuals who are adults. For this reason I find this developmental process framed, guided or interpreted by andragogy. This term appears to have been revived by Knowles, who opted for the remarkable differences between adult learning and child learning. In this regard he indicates, for instance, that skilful adult educators must know that they cannot teach adults as children have traditionally been taught, since adults are usually voluntary learners who can skip the learning process once they do not find their expectations satisfied.

With his model of andragogy, Knowles (1996) proposes a set of assumptions that I find applicable to this study, as I show in the next paragraphs.

- Adults have a self-concept or self-directing personality and experience a deep need to be perceived by others as such. In this study, this implies the following:
  - I provide a learning climate in which my fellow lecturers feel accepted, respected and supported; in which there is freedom of expression and a spirit of mutuality between me (as facilitator of learning) and my fellow lecturers (as co-learners).
  - As a procedural guide and content resource, I involve my fellow lecturers in the process of planning their own learning.
  - I assist my fellow lecturers to self-evaluate, getting for themselves the evidence of progress made towards their educational goal.
  
- Adults have varied experiences that are resources for their learning. This implies the following:
  - I emphasize techniques that require my fellow lecturers' experiences.
  - I provide my fellow lecturers with learning experiences that are linked to how they are going to apply their knowledge in their daily life.
  - I provide opportunities for my fellow lecturers to learn collaboratively and learn by analysing their own experiences.
  
- Adult learning should be problem-centred:
  - I am primarily attuned to the existential concerns of my fellow lecturers and, accordingly, I develop relevant learning experiences.

- I open room for the learning experience to start by the identification of problems and concerns that my fellow lecturers bring.

While considering specifically the research question, *How can I (we) encourage critical reflection in HEIs?* I find all these assumptions applicable to the current study. With regard to the question I organised an experimental professional development intervention, where, through learningshops and mentoring sessions, I meet fellow lecturers to reflect critically on our innovative practice. In doing so, I identify their expectations; I involve all the lecturers in defining how to go about implementing such innovations. Each lecturer defines his goals and shares them with colleagues, who give constructive feedback. Then he/she proceeds to implement the innovation and monitor it by means of action research. At different moments he/she collects data and reflects on it in order to make corrections if necessary. In providing such opportunities, I find the study accommodating most, if not all, implications above advanced by Knowles (1996).

#### **2.4.5 Adult collaborative learning**

Linked to the above assumptions advanced by Knowles are the ideas proposed by Dart (1997) concerning adult collaborative learning. Dart states that the likelihood of understanding by the adult learner is higher when he/she has the opportunity to engage with social interactive methods requiring him/her to explain, elaborate and defend his/her position in discussion with colleagues. Explaining, elaborating and defending one's position require active search and analysis of information, as well as recognition that the other participants within this learning process might possess information that is either challenging or complementary to one's position. In this process the facilitator is supposed to assist the negotiation of meaning among learners who actively participate in constructing meaning and sharing knowledge. For me the relevance of this point lies in the extent to which active construction and sharing frame the learningshops I facilitated as the experimental professional development for lecturers. Within such learningshops I gave lecturers-as-learners opportunities to compose their action research proposals, providing, as Dart (1997) would say, opportunities for them to examine and refine their understanding and collaborative exploration of opposing views.

Facilitating lecturers' learning through learningshops composes one of the types of instruction and learning proposed by Peters and Armstrong (1998). These authors indicate that type one, which they call "teaching by transmission, learning by reception", entails relationships featured by one-way communication from the teacher to the learners. The focus lies on individual learning, while the main mode is the lecturer. I regard this type as a kind of teacher-centred approach, which does not promote ownership of learning since it implies that the learners are passive and empty vessels to be filled.

In type two – "teaching by transmission, learning by sharing"; the teacher transmits information and enables students to transmit information to one another and sometimes to the teacher. Although the teacher is the primary source of information, he/she is not the sole source as the students may bring their knowledge and experience to the fore. Despite the focus being on individual learning, the mode is lecture followed by discussion, allowing for variations.

Type three instruction and learning are characterised by a focus on joint construction of knowledge, emergence of the teacher as a learning group member, and by the importance assigned to the group within the learning experience.

*The teacher may and usually does have special knowledge of content, but his or her knowledge does not necessarily supersede that of the other learners in the group (Peters & Armstrong, 1998:79).*

Contrarily to the other types, in this type both the facilitator and the learners have skills to facilitate collaborative learning. As I have indicated at the beginning of this section, type three represents the true collaborative learning I adopt in this study. It provides opportunities for my fellow lecturers to construct their knowledge, to learn to depend on one another rather than depending exclusively on the authority of experts or teachers (Bruffee, 1999). Therefore, I adopt dialogue as the principal mode of discourse (Peters & Armstrong, 1998).

In this study I create learning situation where my fellow lecturers have the opportunity to verbalise their understanding, spawning, not only consensus, but also conflict and controversy that in turn generates explanations, justifications, reflection and search for new information (Van Boxtel, Van der Linden & Kanselaar, 2000). In this way I show recognition

of knowledge as a social construct that emerges from the agreement among the community of lecturers-as-learners. Although collaboration is the main expected outcome, there is always a risk of the occurrence of competition, and unequal participation within the group activities. To avoid or minimise this problem, I adopt measures such as remaining together for a long time (Bergom, Wright & Brooks, 2011), promoting relation of equality and shared goals. Additionally, the ample opportunities for debate in non-threatening and mutually supportive environment that I provided appear to have contributed for increased sense of collegiality (Byrne, Brown & Challen, 2010).

Van Boxtel et al. (2000) point out that collaborative learning tasks can differ, depending on the kind of product that is requested. Accordingly Bruffee (1999) identifies five models of collaborative learning, including consensus groups, peer tutoring, collaborative project work, writing peer review and consensual response. I find my study accommodating elements of a consensus group. As such, I go through a series of steps that compose the consensus group work. Such steps firstly include dividing the large group of lecturers into small up-to-three-member groups, and providing a task for the small groups to work on. Then there is the reconvening of the lecturers into a plenary session to hear about projects from the small groups and, acting as referee, helping them negotiate a consensus with the current consensus of the knowledge community that I represent. Finally there is evaluation of the quality of the lecturers' work.

Adult collaborative learning brings a quality of change that builds on the lecturer-as-learners' experience, but goes beyond, since it connects their experience with the body of knowledge that is within the learning group, including mine as the facilitator, with a body of knowledge that occurs outside of the group (Connolly, 2008). It opens up space for my fellow lecturers to construct their knowledge as framed within their working and learning context against the backdrop of knowledge available outside the group.

A crucial factor for success within this adult collaborative learning, as with any adult learning, is the use of a functional facilitation technique, which entails identifying real-life activities of direct relevance to the lecturer-as-learner (Taylor, Abasi, Pinsent-Johnson & Evans, 2007). According to Taylor et al. (2007) this technique results in important transformation, which entails the lecturers-as-learners beginning to make connections between the new skills acquired within the learning context and their practice and use within

their professional practice. Hence, in this study, I expect lecturers to start employing the principles of LSF within their professional practice and life and to reflect continually and critically on that practice, mainly through carrying out action research.

Collaborative adult learning provides space for deep and meaningful learning to be facilitated by *discussion, dialogue, purposeful exploration, debate, argument, analysis, enquiry, informal talk, exploration and examination* (Connolly, 2008:74). These processes are associated with the individual learner making efforts to produce more elaborated knowledge and coherent explanations because he/she wants to be convincing and understood by the peers.

#### **2.4.6 Professional development as experiential learning**

Given the complexities and contested nature of contemporary higher education (Mathieson, 2011), scholars acknowledge the need for all those involved in HE to cope with this fast-changing world. Accordingly Brew (2010) states that new understandings of, and I add new attitudes and practices aligned with, the concept of scholarship and the role of scholarly work are important for the development of academic knowledge, for the development of knowledge about the institutions and situations in which we work.

Much of the learning that occurs in professional practice is tacit (Mathieson, 2011) and takes place in a continuous fashion. Making explicit the resulting knowledge depends on the lecturers' ability to share and communicate to peers, make associations, and critically reflect on the instances that were conducive to its occurrence. In doing so, the lecturer has to adopt the meticulousness that Brew (2010) argues to be a distinguishing feature of scholarly professional development:

*Most academic development takes place in locations where academics spend most of their time: departments, professional settings and research sites. It takes the form of exchanges with colleagues, interacting with students, working on problems, writing and associated activities* (Boud, 1999:3)

The fact advanced by Boud, matched against the need for meticulousness required by scholarship of professional development, represents an additional challenge to lecturers who cannot take things for granted but have to adopt a continuously critical stance toward their practice. Beyond this, for me in the quote above, Boud (1999) appears to indicate that



professional development is a socially and situated enterprise. But, above all this, he shows that we must avoid separating the lecturer professional learning from his/her practice setting, where he/she can scrutinise the experiences by means of reflection, abstraction and re-testing. This idea is supported in the experiential learning model of Kolb (1984), which is depicted in figure 2.4.

Experiential learning (Kolb, 1984) entails the lecturer-as-learner going through four sequential stages, namely concrete experience, reflective observation, abstract conceptualisation and active experimentation. That theory asserts the significance of experiential activities that systematically take the lecturer-as-learner through all stages of the cycle, ensuring that there are effective links between the stages (Healey & Jenkins, 2000). In this study, I resonate with Kolb (1984) claiming that, for effective learning, the lecturer-as-learner ought to engage completely and openly in new experience so that he/she is able to observe and reflect on such lecturing experience through different perspectives. Then he/she must be able to create concepts that integrate his/her observations in logical theory. Finally, he/she must use such theories to make decisions and solve academic problems.

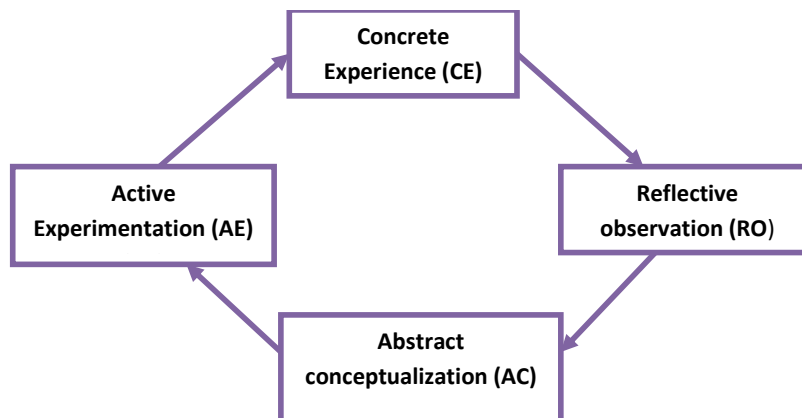


Figure 2.4: The Kolb experiential learning cycle

We must observe that although concrete experience is said to be the first stage, this cycle may be entered at any point, but the stages should be followed in sequence (Healey & Jenkins, 2000). Despite its unquestionable applicability, the experiential learning theory model appears to fall short when it separates active experimentation and concrete experience. For me these two processes appear to mean one thing, namely to experience an activity actively.

#### **2.4.7 Professional development as self-regulated learning**

Self-regulated learning (SRL) has origins traced to school learning. However, its scope is so expanded that it might help explain how a lecturer can master his/her professional learning. SRL refers to the degree to which the learners appears to be metacognitively, motivationally and behaviourally active participant in their own learning process (Zimmerman 1994). Boekaerts (2002) extends this concept to refer to a learner's attempts to attain personal goals by systematic generation of thoughts, actions, and feelings at the point of use, taking account of the local conditions.

SRL involves pro-active efforts to profit from learning activities (Zimmerman 1990). It implies that the lecturer (as professional learner) initiate and adjust his/her behaviour toward the attainment of certain own goals (Boekaerts, 2002). Lecturers who self-regulate their professional learning are engaged actively and constructively in a process of making meaning and adapting their thoughts, feelings, and actions as needed to affect their learning (Boekaerts & Corno, 2005).

In the context of my study SRL is involved when I approach my fellow lecturers' professional development as a learner-driven and, thus, learning-centred process. Within it I challenge lecturers to reflect critically on their practices in order to identify aspects that should be addressed through an innovative practice (i.e. adoption of LSF). This ought to be monitored by means of action research, which entails planning, acting, observing and reflecting. These steps are similar to those of self-regulated learning. Hence lecturers will be planning, setting goals, implementing the innovative practice, while managing resources, and self-assess the learning process (Pintrich, 1999; Zimmerman, 1990). In this way I will be providing the freedom for reflection and discourse as well as reducing the power difference between me (as facilitator) and them (as-learners) (Mezirow, 1997). Neutralising or significantly reducing the influence and prestige, the win/lose dialogue and the hegemony of instrumental rationality is conducive to all becoming collaborative learners, which is what I mean to be. Organising professional development by encouraging lecturers to generate their own goals, I seek to allow them to experience situational meaningfulness (Boekaerts, 2002). Hence, I will contribute to stimulate their engagement in reflective practice and scholarship of teaching and learning (Radloff, 2005).

Boekaerts (2002) indicates two aspects of SRL that within professional development should be distinguished in terms of their complementarities, in order to facilitate the selection of appropriate learning activities. These aspects are SRL as process and as outcome.

As a process, SRL describes how the lecturers (as professional learners) connect an environmental demand (accommodate student diversity) to a personal goal (increase student performance and satisfaction), through a meaning-generating act (action research) that attaches value to the demand and motivates them to search for scripts in their repertoire that are effective to meet that demand. As the outcome of a learning process, it entails the lecturer (as professional learner) experimenting with new scripts, reflect on their use and appropriateness within one or more contexts (alone or with others), and link them to relevant personal goals. At its heart is the notion of autonomy which is illuminated by the lecturer's awareness of his/her separateness and of his/her consciousness of his/her personal power.

## **2.5 Peer mentoring**

Mentoring is an umbrella term for a range of activities carried out in diverse fields, including business, health and education. In academic practice the term has been employed with varying models of lecturer induction to facilitate transition from training to professional practice, as a means to provide growth to those already in the practicum setting as well as in transition periods of re-entry and role changes (Seminiuk & Worrall, 2000; Le Cornu, 2005). Therefore it has two benefits, namely the possibility for a more skilled lecturer to provide help, guidance and support to a novice and/or less competent practitioner and a force to make the lecturing practice less private and less isolated (Seminiuk & Worrall, 2000; Hargreaves & Fullan, 2000).

The new trends have changed university leadership towards the integration of thinking and acting at all levels (Senge, 1997). Viewing lecturers as leaders and capacity building promoters represents a shift away from the traditional models of mentoring, and brings to light the influence of constructivism and social constructivism. The constructivist approach highlights learning as a process where lecturers create their knowledge out of the experiences and context of their work environment (Mott, 2000). Social constructivism suggests that learning should be participatory, communal and collaborative (Le Cornu, 2005). These

trends to move towards learning organisations, the need for constructive learning environments and for the promotion of learning communities substantiate a shift of focus towards peer mentoring.

Education reform efforts stress the need to dismantle the historical solitude of lecturing practice by advocating collaboration and peer sharing (Seminiuk & Worrall, 2000). Hence the models where experts pass on the craft principles to novices appear to be obsolete. Lecturers now operate in a professional practice that is inherently difficult, where its increased complexity results in even the “experts” not being able to present easy answers, sometimes requiring and benefiting from colleagues’ advice and support (Hargreaves & Fullan, 2000). Parallel to this the increased uncertainty and complexity in which lecturing is embedded and the fact that mentoring is a mutually reciprocal activity promoting learning for both the mentor and the mentee appears to authenticate the shift to peer mentoring (Hargreaves & Fullan, 2000; Klasen & Clutterbuck, 2002; Le Cornu, 2005). Within this study I adopt peer mentoring once I highlight learning as a two-way process, where lecturers individual knowledge is personally created, through interpretation, assimilation and reconstruction of the his/her existing internal knowledge (Klasen & Clutterbuck, 2002).

Promoting learning as participatory, communal and collaborative (Le Cornu, 2005), within this study, I challenge the hierarchies occurring in traditional mentoring models. I do so, placing myself against my fellow lecturers as co-learners or co-constructors of knowledge in situation where there are not power imbalances (Le Cornu, 2005). In this way, I seek to show that peer mentoring should become an integral part of the university culture (Hargreaves & Fullan, 2000). I find it deemed to encourage the development of synergistic relationships and transformative organisational structures (Mullen, 2000). Additionally, I envisage peer mentoring moving far away from seeing mentorship as solely directed to promote the growth of less skilled or experienced lecturers. Rather, following Jipson and Paley (2000), I would argue that peer mentoring generates a creative, democratic and equal rights space that elicit helpful insights and understandings for those involved. Moreover, this process creates opportunities for mutual discussion and/or advance issues of interest and responds to individual and common needs, pertaining either to personal or professional life.

Another aspect underpinned by peer mentoring is the notion of learning communities, which in this study was the group of lecturers with whom I worked throughout the whole venture. According to Le Cornu (2005), HEIs' cultures are subject to changes that imply the move from individualist to collaborative cultures, involving commitment to shared goals, interdependency, participatory decision-making processes and team work. In creating self-reflective learning community with my fellow lecturers I mean to extract benefits such as positive feelings about the profession and reducing practitioner isolation, an effective way to support lecturers and to encourage the occurrence of the necessary transformations for effective efforts of facilitating learning, and to support the lecturers' affective domain since they act as emotional and intellectual yardstick for the lecturers (Le Cornu, 2005).

## **2.6 The whole-brain model**

The whole-brain model (Herrmann, 1995) appears to respond to the fact that, for a considerable time, worldwide educational systems have focused mainly on promoting left brain-related skills (De Boer & Van den Berg, 2001). Therefore, ways of thinking such as being innovative, intuitive and emotional-driven, holistic and spiritual thinking have been neglected in favour of analytical, rational, structured and logical processes of thinking (De Boer & Van den Berg, 2001). Accordingly, Bogen (as quoted by Iaccino, 1993) has indicated that there has been an overemphasised importance attributed by Western society to left-hemisphere skills. Contrary to this, Herrmann (1995) asserts that non-industrialised nations still reward skills related to intuiting and sensing, such as the art of healing sick animal, the ability to nurture lands and beasts, to understand the ecology of a forest, or to sense the current and moods of the sea. Therefore, encouraging more right-hemisphere skills such as artistic, musical, creative insights appeared to be urgent.

The Herrmann model has been preceded by studies about brain asymmetric functioning that are traced to the 1800's when various researchers showed that the brain is divided into halves, each controlling different functions. This occurs in a crossed fashion: while the left hemisphere exerts control over the right side, the right hemisphere is in charge of the left side of the body (Springer & Deutsch, 1989). I present summarised findings of the functioning of the two halves of the brain In table 2.2. In this way I present the left hemisphere as predominantly involved in the faculty of speech, serial processing as well as

meaningful life. The right hemisphere is associated with non-verbal motor skills and intuition, as well as holistic information processing (Springer & Deutsch, 1989).

Table 2.2: Left/right brain functions (Adapted from Springer & Deutsch, 1989)

Left hemisphere	Right hemisphere
Verbal	Non-verbal
Sequential processing	Parallel processing/Simultaneous Gestalt
Analytic process	Visual-spatial
Language production/Understanding	Intuitive
Rational	Musical abilities
Mathematical problem-solving	Patterns matching

### 2.6.1 The four quadrant dominances

Herrmann (1995) combined the MacLean’s Triune brain model and the left-brain/right-brain theory in order to establish his metaphoric four quadrant model. Instead of working with two halves of the brain, as other researchers did, he suggested four quadrants, as figure 2.5 shows, each one presenting distinct functions, describing the ways a person likes to study, defining typical professions, dressing habits and the like.

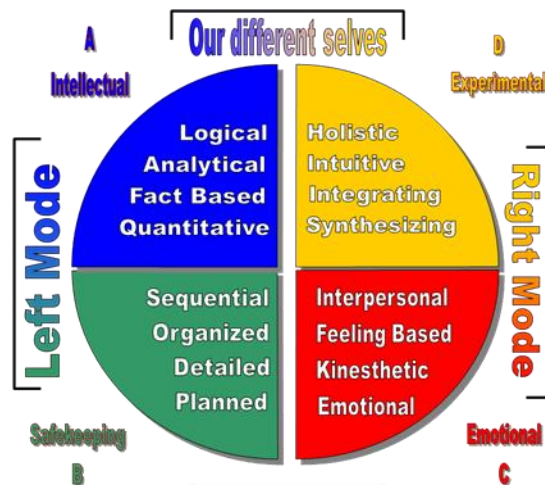


Figure 2.5: The whole-brain model

Central to the whole-brain model is the concept of brain dominance. Herrmann indicates that functionally of the brain is featured by asymmetry like any paired structure of the body. One

eye, hand and leg are dominants than their other pairs. The same applies to the brain, as expressed in terms of how we prefer to learn, understand and express something (Herrmann, 1995). For Herrmann the development of such dominance (or preference) is associated with reason, including the enhanced ability to respond quickly and effectively to any situation and providing us with higher skills levels than we could otherwise attain.

The brain dominance or preferred modes of knowing correlates strongly with what we prefer to learn and how we prefer to go about learning (Herrmann, 1995). Hence a left brained might prefer to learn about mathematics, while a right-brained might prefer studying music. Concurrently, if we strongly prefer one mode, we may actually reject another (Herrmann, 1995). Accordingly, a fact-based learner will struggle with expression of emotions, while a visual learner is bored by lectures (De Boer et al., 2012). For this purpose there is mention to the individual preference (or comfort zone) and avoidance. There is equal distribution of learning preferences and avoidances and learning avoidance is so important for the facilitator of learning because it turns the learner off, which represents a waste of educational time and effort (Herrmann, 1996).

While brain dominance is natural and normal for all human beings, it is apparent that it can be regulated by the social environment. Hence, Herrmann advances that

*I would strongly argue that the way a person uses the specialized brain results from socialization – parenting, teaching, life experiences, and cultural influences – far more from genetic inheritance ... We come into the world with a given genetic complement of cognitive capabilities, options, and mental strengths and weaknesses. As we respond to life's learning opportunities, it is natural that we learn to go to our strengths first, because they tend to win us praise and others rewards (1995:20).*

According to the quote above, I find that the more certain ways of responding to situational demands are positively reinforced by the social environment the higher is the likelihood for the individual to establish a preference for an associated pattern of skills and behaviours. Hence, while facilitating learning, lecturers are called to stimulate the student employment of the least preferred mode of learning.

The other aspect advanced by Herrmann (1995) that is significant for the learning process is that the right and left brains appear to be in a constant state of competition as if the human mind is divided against itself. This assertion implies the need to transcend such mental



conflict, moving towards a more integrated wholeness, which implies a flexible collaboration among the specialised parts of the brain.

Herrmann (1996) considers preferred modes of learning as crucial factors to take into account in any teaching situation because they filter out certain data and allow other information through. According to him the following should be taken into consideration:

*Our degree of preference for each of the four thinking modes can be determined by our relative attraction to or aversion for each of the mode descriptors, which can be loosely defined as families of mental processes that have some commonality (Herrmann, 1996:20).*

Concerning the functioning of each specific brain quadrant, Herrmann (1996) states that depending on his/her quadrant dominance a person presents certain distinctive characteristics I describe below:

- A quadrant dominant individuals favour activities that involve analysing facts, figuring out, solving problems logically and quantifying. They are comfortable with reducing the complex to simple, the unclear to comprehensible.
- B Quadrant dominant learners are verbal, action-orientated, prefer decisions made according to long-established procedures, value rules and have the ability to focus on one thing at a time. They have strong preference for controlled, structured, and organised thinking modes (de Boer & van den Berg, 2001).
- C Quadrant dominant learners “might be looked at as the most sensitive” (Herrmann, 1995). They have little time for logic or theory, which is something removed from reality. Their primary modes are emotional and spiritual. These learners are spiritual, empathetic, nurturing and musical, and place high importance on communication.
- D dominant individuals favour fun and spontaneity, playful approaches, pictures and metaphors and the opportunity to experiment. The thinking style is characterised by creative, holistic, and synthesizing modes (de Boer & van den Berg, 2001).

By saying that people are characterised by dominance in different quadrants, the Herrmann model does not imply that all or most people present a strong preference for one quadrant only. Indeed, it only applies to 7% of the profiled population. The double dominant pattern makes up 60% of the database. This is followed by triple dominant profiles, which account



for 30% of the population studied, while only 3% entails quadruple dominant profiles (Herrmann, 1995).

Hence, for instance, my brain profile indicates that I am triple dominant with a code of 1-1-1-2. This means triple dominance with primary preference for the A, B and C quadrants and secondary preference for the D quadrant. My descriptors in the B quadrant are controlled and dominant, with conservative corresponding to my 'key descriptor' - the one most descriptive of me. In the C quadrant my descriptors are emotional and intuitive while in the A quadrant they are critical, quantitative and factual. My least preferred quadrant, based on the HBDI, is the D quadrant, with a value of 59. In this quadrant intuitive is my characteristic. These descriptors represent a general overview of my mental preferences in day-to-day life.

Herrmann model also indicates that there is more or less harmonious combination between people with different preferences. In this regard I observe that there is a harmonious combination between quadrants of the same hemisphere, for instance between the left-brain A and B quadrants, and between the right-brain C and D quadrants. Conversely, there is more likelihood of the occurrence of conflict between diagonal quadrants – A/C and D/B. This aspect implies that in the learning opportunity the facilitator has to take care to group learners in a way that avoids discordant co-habitation between learners, unless the facilitator deliberately wants to promote such an aspect. As Herrmann (1996) asserts, competition is not bad, since it can lead to better decisions and better solutions.

My choice to work with Herrmann model is based on a number of reasons, first of which is the innovative nature of this kind of study. Besides, there is the potential I foresee in this model. I recall Coffield et al. (2004), acknowledging that although the Herrmann model appears among the most influential models, little research has been done on it. Subsequently they remark on the model and its instrument when they say the following:

*There are good reasons to recommend the use of the HBDI as a means of individual and group reflection on thinking and learning preferences. It is more detailed and situation-focused than many of its competitors, while accommodating many of the constructs which receive incomplete or less reliable and valid coverage in other instruments. Herrmann's model is concerned with thinking, feeling and doing as an individual and in social contexts. It addresses long-established habits and personality traits as well as situationally-dependent preferences. As it is concerned with process rather than product, it is largely independent of cognitive ability. It is possible to envisage considerable benefits to be derived from its use by policy-makers and*

*course designers as well as in organisations concerned with education and training. The design and delivery of lifelong learning experiences may then more effectively promote 'whole person' and 'whole organisation' balance (2004:83).*

I have also adopted the Herrmann model in alignment with the need to explore learners' enormous brain capacity to manage life occurrences and to expand our knowledge of using our minds and bodies fully (Houston & Clift, 1990). Moreover, the model is comprehensive (de Boer et al., 2012); it adopts an optimistic stance and does not rely on gimmicky techniques (Coffield et al, 2004:83). It is systematic and considers brain dominances, learning preferences or thinking styles as passive to change and development (Bawaneh et al., 2011; Herrmann, 1995).

The model differs from the twofold view of learning styles. Bipolar categorisations fail to capture the entire and huge repertoire which is the brain. Bipolar categorisation seems to create a cast where surface learning must be avoided or combated. Contrarily, the whole-brain model considers that human beings can learn in many and different ways. Therefore, there is no mode of learning that must be avoided. Rather it stresses the need for variation in order to reach all modes, which can be associated with deep learning.

### **2.6.2 Learning Style Flexibility**

Educational practices have been neglecting the right hemisphere processing for long. Scholars (Houston & Clift, 1990; Postle, 2003; van Woerkom, 2010) mention at least two factors hampering equal promotion of this hemisphere and, hence, the four modes of learning. These are the western tradition of valuing almost exclusively the practical and conceptual modes of learning; and the human propensity to stick to the

*comfort that comes from staying with our preferred mode and keeping away from other modes (Postle, 2003:35).*

In turn Korthagen (1993) connects this occurrence with the difficulty to analyse and influence the non-rational processes. Accordingly, Heron (as quoted by Postle, 2003) contends that formal education does not address emotional and interpersonal competences since it assumes that an individual who might have developed his/her left hemisphere competence (logical thinking, analytical and problem-solving skills, etc.) will be able to manage his/her feelings and handle his/her intuitions.

Learning Style Flexibility (LSF) represents an approach to the learner as a whole person, who not only plans and analyses facts, but who can be emotionally involved, experiment, integrate and synthesise facts. LSF is founded on the assumption that every learner has a primary, secondary or tertiary/avoidant preference for one of the four modes of knowing or brain quadrants. Therefore, according to Herrmann (1995), a learner might have a preference for a certain quadrant (e.g. A) but no developed competence for a specific skill within such a quadrant (e.g. quantitative processing) because he/she missed the opportunity to develop such a skill. Hence there is a need for stimulating the learner's preference. If there is avoidance it has to be addressed as well. Herrmann (1995) indicates that although profiles tend to remain constant, changes might and do occur as a response to life events, job shifts or learning experiences. Herrmann states that

*When designing and implementing responses to ... [learning] issues and challenges, the human brain functions at its most innovative, productive best only when all four quadrants engage situationally and iteratively in the process (1995:126).*

To put more stress on this quote, and explain the reason for calling it LSF, de Boer et al indicate that

*In their design and delivery of key learning points learning activities and tasks should ideally be designed to move back and forth dynamically across all four quadrants of the whole brain model – ensuring learning style flexibility (2012:192).*

LSF warns about two aspects lecturers should be conscious of. The first is the above-mentioned wholeness of an individual learner. In this regard I might recall that, although the person is whole-brained, there are certain domains for which he/she has a particular preference and others for which he/she portrays avoidance, as demonstrated in previous paragraphs. From this argument emerges the second aspect of significance to lecturers: a group of learners considered in its entirety predictably consists of a composite whole-brain. In this regard Herrmann points out the following

*Chances are that every classroom represents a complete spectrum of learning-style preferences (...). There is a balanced distribution of learning preferences, with each quadrant and each mode equally represented. There is also equal distribution of learning avoidances across the four quadrants. And learning avoidances are even more significant than learning preferences because they turn people off. A turned off learner is a waste of educational time and effort (1996:152).*

In this regard, I engage in effort to accommodate such holiness within the group of my fellow lecturers who participate in this study. Therefore, connected to the A quadrant, I provide handouts, the HBDI profile overlay and data summary and I give them reading material. Linked to the B quadrant, I divide the learningshop programme into sections sequentially structured according to the goals pursued. I mentore them to apply LSF and practice action research within their practices. In relation with the C quadrant, I include elements of cooperative learning in the learningshop where discussion was the main way of engagement. Finally, in connection with the D quadrant, in the presentations there is exploration of visuals, PowerPoint slides, transparencies, video-recording, photographs and demonstration. Besides, I provide room and freedom for them to learn by discover, exploring, fun, and spontaneity specially while facilitating their students learning.

Learning is inextricably linked to the way in which a lecturer facilitates learning (Ramsden, 1992). Or, following constructivism, the learner is the focus since learning drives teaching (Dart, 1997). Therefore, lecturers who are aware of the whole-brain composite classroom need to transform their practices radically if they do not currently facilitate learning for the full brain learning spectrum.

*Our own personal experiences with education and our basic teaching and learning preferences shape our habits of mind about teaching in many ways .... We may teach the way we prefer to learn ourselves. Persons who value structure and organisation in their daily lives may be organised teachers. Persons who are intuitive, creative, and innovative may carry those characteristics into their teaching ... we teach based on what we have experienced and who we are (Cranton & King, 2003:34).*

In order to accommodate Cranton and King call for a transformation, in this study I provide my fellow lecturers with the opportunity to be conscious of their own individual learning style as a basis for the development of effective strategies of facilitating learning (Healey & Jenkins, 2000). I adhere to the need for the lecturer to balance his/her own approaches to teaching in order to accommodate the different student preferences (Du Toit, 2008). I acknowledge that the lecturer must understand well how learning happens, and the implications of his/her role. Beyond this, I consider that he/she must learn to create a synthesis between his/her knowledge of the discipline, of how he/she learns, and of how students learn (Beaty, 1998). Such effort assist the lecturer to adjust the way he/she facilitate learning in order to enable learners to recognise their own avoidances and comfort

zones (Dart, 1997). Hence I find LSF linked with meta-learning and self-regulated learning since, being aware of their avoidances and preferences, lecturers (as learners) can be conscious of how to plan, implement, monitor and assess their professional learning.

In this study I also warn my fellow lecturers not to rely solely on strategies for facilitating learning according to their learning preference. I challenge them to adapt their style, following the holistic composition of the group, the nature and the demands of the subject matter and related outcomes (Du Toit, 2008). I raise their awareness for the need to encourage different ways of learning in students (Ramsden, 1992). Otherwise the students' discomfort, associated with their way of learning being discriminated against, may interfere with their learning or they may not develop the necessary mental dexterity to develop their full potential (Felder, as quoted in Du Toit, De Boer & Steyn, 2004).

*It is also important to know that a preference for a particular thinking style and an avoidance of another style are of equal consequence to an individual. A preference, particularly a very strong preference, will lead to turn-on work. In contrast, a lack of preference or an actual avoidance in a quadrant is being turned off to the mentality of the work elements in that particular quadrant. Being turned on is highly motivational and often represents a state of self-actualization. Being turned off is highly demotivational (Herrmann, 1996:31).*

Hence lecturers must organise learning activities considering the four quadrant spectrum, i.e. they have to accommodate the learners' preferences and challenge their avoidances (Du Toit et al., 2004). Hence they will allow a degree of student control over learning, maximising the students' independence and active engagement (Ramsden, 1992). In this study I seek to show that we work according to values such as freedom, equality, and collaboration. These values are building-blocks of the learning-centred approach and are encapsulated in LSF. Thus each key learning point must be tackled in ways representing different learning styles, including, for instance, a handout, an experiential exercise, a short video, a team activity or a case study (Herrmann, 1996). Motives, will, intuition, self-concept, interpersonal considerations and emotions are often important ingredients of task-orientated problem-solving in learning (Mezirow, 1997a).

Armstrong (1994) suggests a set of methods for facilitating learning within Multiple Intelligences (MI) learning contexts. Since such methods are applicable to the whole-brain model I have adopted and that is portrayed in table 2.3.

Table 2.3: Matching brain quadrants to methods of facilitating learning (adopted from Armstrong, 1994)

Quadrant	Methods of facilitating learning
A	Books, manuals, reading, classification and categorisation, quantification and calculation, self-paced instruction, scheme development for evaluation.
B	Books, manuals, reading, classification and categorisation, quantification and calculation, logical sequential presentation of subject matter, individualised projects, self-paced instruction, scheme development for evaluation.
C	Group discussion, cooperative groups, interpersonal interaction, picture metaphors, word games, storytelling, hands-on thinking, field trips, classroom theatre, and kinesthetic imagery.
D	Word games, storytelling, group singing, charts, graphs, diagrams and maps, visualisation, background music, hands-on thinking, field trips, classroom theatre, kinesthetic imagery.

Efforts to facilitate learning informed by MI theory are holistic. They advocate the involvement of more than the verbal/linguistic and logical/mathematical intelligences. Accordingly, in this study I liberate my fellow lecturers to work their way (Hopper & Hurry, 2000; Barrington, 2004). In this way, LSF appear to be linked to metalearning and self-regulated learning. The association with metalearning stems from the fact that LSF implies or assists the learner with knowing him/herself as whole-brained person, who has preferences and avoidances. Such awareness can help him/her to gain control over his/her learning. The linkage with self-regulated learning results from learners (and lecturers) awareness of their learning styles, which empower them to plan, implement, monitor and assess their own learning process.

Lumsdaine and Lumsdaine (1995) propose four ways of learning, which are considered and incorporated by effective lecturers into their strategies of facilitating learning:

- External learning (Quadrant A) from authority through lectures and textbooks.
- Internal learning (Quadrant D) through a flash, an insight, visualisation, an idea, synthesis or a holistic and intuitive understanding of a given idea, concept or theory.
- Interactive learning for the C quadrant. It is achieved through discussion and hands-on sensory-based experiments.

- Procedural learning (quadrant B), which occurs by means of methodical and sequential testing of the material. This way of learning includes the learner practising and repeating the skills he/she has to develop.

These modes of learning are relevant to my study since they represent different ways I used to facilitate my fellow lecturers learning. In synchronous fashion, they used the same modes to facilitate their students learning, as I demonstrate in chapter 4.

Heron (as quoted by Postle, 2003) advances the model of multi-modal learning, entailing four modes of learning. Such modes include the practical, the conceptual, the imaginal and the affective modes of learning. These modes are accommodated in my study since they bear similarities with the whole brain and LSF. Yorks and Kasl (2002) who call them modes of psyche, indicate that each mode comprise two processes. The interesting aspect for this study is that the model shows a correspondence with the Herrmann whole-brain model. While explaining each mode I show such equivalence.

The **practical mode**, matching the B quadrant, consists of intention and action (Yorks & Kasl, 2002). Here learning occurs through doing and is conducive to competence in practising skills (Postle, 2003). The **conceptual mode**, according to Yorks and Kasl (2002) consists on reflection and discrimination. Here reflection appears to be used unclearly, since Postle (2003) indicates that this mode includes logic, proof, argument and debate, refers to the use of language, spoken, mathematical or symbolic. I envisage this mode of psyche as corresponding to the A quadrant. The **imaginal mode** consists on the process of intuition and imagery (Yorks & Kasl, 2002). Learning occurs by means of envisioning and devising futures through the intuitive grasp of sequences, processes and situations as a whole (Postle, 2003). This mode is equivalent to D quadrant. The **affective mode** entails feelings and emotions (Yorks & Kasl, 2002). Hence, it is comparable to the C quadrant. According to Postle (2003), it refers to learning that occurs through direct experience, through being there immersed in an experience.

To a large extent the model of Heron brings benefits when it shows the need to see the learner as whole-person and therefore, with the need to have a variety of stimuli linked to diverse modes. Nonetheless, the model appears to be faulty in being pyramidal and



establishing a hierarchy between the different modes of learning or psyche. Accordingly, the model shows that the affective one is the lowest, while the practical is the highest. In between there is the imaginal and the conceptual. Although this model claims to be progressive, it is still tied to the western tradition, giving primacy to the left-brain modes. Still, it has the value added of raising awareness for consideration and accommodation of feelings, emotions, intuition and imagery in the process of facilitating learning.

Within all these frameworks there is a need to be holistic in the way lecturers facilitate their students' learning. Therefore, in this study I accommodate such a need by acknowledging that a variation in design and delivery approaches would facilitate learning in all four specialised quadrants. Accordingly, I stimulate my fellow lecturers to incorporate the students' expectations in all four quadrants in order to facilitate the development of the learners' full potential (Du Toit et al., 2004).

### **2.6.3 Research related to the whole brain model**

I have indicated, in chapter 1, that my interest in carrying out research employing the whole brain model and the correlated LSF has to do with a number of reasons. First and foremost it has to do with the innovative nature of studies like this one. I observe that, regardless of its potential, the whole brain model has been scarcely researched. Secondly, in spite of such little research, I have observed that there is interest in this model in different parts of the world, as I will show in the next paragraphs. Thirdly, to substantiate the claim for its potential, Coffield et al. (2004) acknowledge that the model is one the most influential models of learning styles and is highly recommended for education and training. In the next paragraphs I present briefly the research carried out with the model and at the end I make a general comment concerning the common aspects within such studies.

Lumsdaine and Lumsdaine (1995) carried out a study from 1990 to 1993 entailing pre- and post-testing consisting in the administration of the HBDI. This was done before and after facilitating a course on creative problem solving to Engineering students at the University of Toledo, USA. The study was carried out in fall freshmen classes and spring senior classes. The results show that senior classes showed a shift from the B quadrant to the D quadrant (creative thinking). Concerning the freshmen classes as a whole, they could not discern a definite trend to change, despite observing that some students strengthened their



preference for the D quadrant with little support, while others maintained their preference for this quadrant. From these results they concluded that students gain insight into their thinking styles and are able to formulate successful learning strategies. The conclusions they have drawn are that important concepts have to be taught in all four quadrants and that students must be offered opportunities to strengthen all quadrants. Furthermore, they suggest that since society needs engineers who can think globally, it is essential to develop students who can think about thinking, not just plug in formulas.

Observing that for a considerable time educational systems worldwide have focused mainly on facilitating learning and evaluating for left brain learners, De Boer and Van den Berg (2001) decided to carry out a study with Criminology students at the University of Pretoria. The aim of the research project was to determine the students' preferred thinking styles, to determine the distribution of thinking style preferences in them and to introduce a practical whole brain instruction and learning model for lecturers of criminology. The results show that a wide range of thinking preferences exist among the Criminology students. In the same vein the study found that there is a distribution of learning avoidance across the four quadrants. Based on these results, De Boer and Van den Berg advise that it is necessary to move away from traditional teaching methods, which are outdated for the context of whole brain instruction and learning. Hence, they call for exposing learners to a variety of teaching methods in order to minimise "turn off" learning approaches.

Between 2000 and 2002 Steyn and Maree (2003) carried out a study with Engineering and Sciences students at the University of Pretoria. The study aimed at providing students with insight into their own thinking preferences and to measure their preferred thinking styles. The results show the presence of the whole-brain spectrum within the student. Still the majority of Engineering students were found to be A quadrant dominant, which accords with Herrmann (1995) who indicate engineers prefer this quadrant. The study also found that the majority of Science students present preferred modes of knowing associated with the B quadrant. Although research has indicated that peer group learning works well, it appears as if students need to be trained to work in groups and that the classroom should be structured to foster interactivity. Moreover, it points to the requirement to provide learning facilitation of Mathematics to accommodate students' preferences and avoidances.

In a study carried out in Jordania, Bawaneh et al (2011) engaged in a venture seeking to determine the thinking styles held by primary 8th Grade learners and if there are significant differences in their thinking styles. The study entailed the administration of the HBDI to 357 students randomly selected from fourteen primary and secondary schools between 2009 and 2010. Their findings indicated a proportionate assignment of learners with all thinking styles. For them this result was a good indicator that society has to strike a social balance in terms of jobs diversification and opportunities for employment depending on brain preferences and interests of individual job seekers. Concerning education, they indicate that the findings urge educators to adopt diversified approaches when presenting the instructional content and related activities; and curriculum designers to consider individual differences when conceiving the learning material such as textbooks.

My analysis of these and other studies shows that the interest in whole-brain is wide, with studies spanning from general education, Engineering, Criminology and other fields such as Information Sciences (Scheepers, De Boer, Bothma & du Toit, 2011). The significance of such wide interest relies on the fact that it validates the claim that the whole-brain model and LSF are comprehensive and open space for ample exploration. The other aspect that I have observed is that the interest in the HBDI across different countries and continents sheds light on the potential of this inventory to assess thinking preferences or modes of learning quite fairly in different cultures. The last aspect I could advance is that almost all studies I have reported are limited to assess and describe the brain preferences of the students. A slight different is presented by Lumsdaine and Lumsdaine (1995) who see changes in preferences as result of an intervention. In my study I go beyond such limitation since I use the HBDI results as the new knowledge each lecturer gain about his/her way of learning. Hence, he/she can use such knowledge to proceed to his/her action either of making meaning or of facilitating learning. Besides, lecturers working with me use the general knowledge about differences in learning styles or brain quadrant to explain theirs and their students' behaviours, as I will show in Chapter 4.

## **2.7 Multiple intelligences**

Scholars' accounts about academics professional development recognise the need for lecturers to develop acquaintance and accommodate the students learning styles and individual differences (Gosling, 2003; Macdonald, 2003; Webster-Wright, 2009). I take this

idea beyond school learning to say that the professional development efforts per se need to be personalized in a way that the facilitators accommodate the lecturers (as learners) individual differences. Borrowing from Goodnough (2001) I contend that personalized professional development experiences are critical to make the lecturers learning meaningful. For that purpose, as this author advances, we should consider the lecturers knowledge, beliefs, and values, as well as provide them the opportunity to conduct scientific investigation and solve problems of his/her own choice and design.

The multiple intelligences (MI) theory appears to offer educational practice a framework through which to explore the individual learner idiosyncrasies. The MI theory was proposed by Gardner, who appear to surpass approaches that were culturally biased, such as the Binet concept of IQ used to identify students incapable of being educated so that they could be excluded from schooling (Muncy, 2006). Other scholars, such as Spearman or Sternberg proposed models that were nearer to the MI theory. Hence, for instance, Sternberg indicated that one person can possess high intelligence in one environment and low intelligence in a different one (Muncy, 2006).

Armstrong (1994) indicates that Gardner questions the validity of determining intelligence by taking a person out of his/her natural learning environment and asking him/her to do isolated tasks he had never done before. Thus, he views intelligence as situated and suggests that it has more to do with the capacity to solve problems and approach products in a naturalistic context-rich setting (Armstrong, 1994). According to McCoog (2007), originally Gardner has listed seven categories of intelligence namely the linguistic, logical-mathematical, spatial, bodily-kinaesthetic, musical, interpersonal, intrapersonal. Later he noted the *ample evidence for naturalist intelligence; and suggestive evidence as well for a possible existential intelligence* (Gardner, 2003:7). In advancing with this theory, Gardner says

*I was claiming that all human beings possess not just a single intelligence (often called "g" for general intelligence). Rather, as a species we human beings are better described as having a set of relatively autonomous intelligences...While we all have these intelligences, individuals differ for both genetic and experiential reasons in their respective profiles of intellectual strengths and weaknesses. No intelligence is in and of itself artistic or non-artistic; rather several intelligences can be put to aesthetic ends, if individuals so desire. No direct educational implications follow from this psychological theory; but if individuals differ in their intellectual profiles, it makes sense to take this fact into account in devising an educational system (2003:4-5)*

From the quote above, it follows that, as educators, we have to challenge the traditional notion of intelligence from western societies, which is limited linguistic and logical intelligences. Instead, Kezar (2001) says, we have to recognize and nurture the varied human intelligences, providing opportunities for learners to feel expert.

In this study I use MI theory to match efforts to facilitate learning and the ways of learning, to encourage my fellow lecturers to “stretch” their abilities to fully develop all their intelligences, and to honour and celebrate diversity (Goodnough, 2001:182). As illuminated by MI theory, my effort to promote my fellow lecturers’ professional development focus on their achievement so that there can be effective integration of knowledge. I consider that one of the best ways to meet these needs is to differentiate the methods of facilitating the lecturer professional learning (McCoog, 2007). I further accommodate my fellow lecturers’ MI by reinforcing their desire to experiment with new approaches to facilitating learning that develop intelligences formerly not addressed through conventional techniques (Kezar, 2001). In this way, I adhere to the idea that MI theory implies that the lecturer might increasingly individualize the curriculum through independent study, experiential learning opportunities, self-paced learning, among others.

The MI does not exist without criticisms. Gardner (2003) mentions to have noticed a number of misinterpretations of the theory, including the confusion of intelligences with learning styles, a societal domain, and descriptions of different racial or ethnic group in terms of their characteristic intelligences. Despite that assertion, Kincheloe (2004) mentions MI theory aspects that are antidemocratic, subversive of community, insensitive to race and socioeconomic class issues, and Eurocentric, among others. Nevertheless, as Goodnough (2001) says, its greatest strengths is grounded on its capacity to frame the lecturers and professional developers’ work in exploring their styles of facilitating learning and to assist them in making decisions about ways to structure personalized learning opportunities and experiences for learners.

Notwithstanding the criticisms, the impact of MI in learning appears to be significant. Therefore, Kezar (2001) indicates that many schools are increasingly adopting the learner centred approach as a sign of appreciation of each learner’s unique combination of intelligences. Moreover, Goodnough (2001) stresses the recognition of MI potential to

enhance conceptual understanding, encourage positive attitudes toward learning, increase enjoyment of and participation in learning, and create more authentic learning experiences

The relevance of the MI theory for this study draws further mainly from its close alignment with the LSF. Therefore, in the same vein as LSF, the MI theory contends that each intelligence (or preference for LSF) support certain learning strategies. While LSF contends that no thinking preference is better than other, MI theory argues that no intelligence is better than other. Both theories acknowledge the significant role played by non-rational processes within the learning context. In considering the importance of intuition, emotions, among others, in this study, I adhere to both. Therefore, I adhere to the idea that differentiating methods of facilitating learning along these parameters takes creativity and commitment (McCoog, 2007). The ultimate goal is to meet the overall needs of each lecturer (as learner) and therefore might require designing multiple lessons. Learner choice is another parallel aspect of MI and LSF. In this study, I allow my fellow lecturers (as learners) to do their action research projects in the way that most interest them. In most cases, the my fellow lecturers will choose the one that best fits their MI or brain profile.

## **2.8 Critical reflection**

In the previous sections of this chapter I have indicated that many authors (Beaty, 1998; Clegg, Tan & Saeidi, 2002; Harrison, Lawson & Wortley, 2005; Loughran, 2002; Quinn, 2003; Savaya & Gardner, 2012) agree on the centrality of reflection in the professional development. Related to this I have found that reflection and critical reflection are intensely used and studied concepts. A plethora of frameworks appear to co-exist with lack of a consensual and precise definition of these concepts. What is not clear is the direction of the causality within connection. Still within such a profusion of studies, it is possible to identify common themes and issues that surround the field. Literature shows that the main studies within the field of reflection are related to issues such as the definition of critical reflection as confronted with reflection (Ash & Clayton, 2009; Brookfield, 2009; Fook et al., 2006), conditions for reflection (Calderhead & Gates, 1993; Houston & Clift, 1990; Moon, 1999; Van Halen-Faber, 1997), tools to promote reflection (Brookfield, 1995; Crow & Smith, 2005; Glazer, Abott & Harris, 2004; Moon, 1999; Walkington et al., 2001), and critical reflection as connected to non-rational processes (Boud et al., 1985,1996; Clarke, James & Kelly, 1996;

Houston & Clift, 1990; Korthagen, 1993; Leitch, 2006; Moon, 1999; Valli, 1993; Van Woerkom, 2010).

In this section I do not mean to do a thorough review of all these themes. Hence I focus on those aspects that have a bearing on my research questions. Accordingly, I first take a glance at the issue of definition, which is necessary to promote shared understanding (Evans, 2002). Afterwards I will take a look at tools to promote critical reflection. This option is guided by the research question on how can I (we) encourage critical reflection in HEIs. Finally I will concentrate on literature about the link between reflection and the whole-brain. The rationale for this decision is the intention to conceive a model of Learning Styles Flexible Reflection (LSFR).

### **2.8.1 Reflection and critical reflection**

The field of education has witnessed a growing interest in the concepts of reflection and critical reflection. Such interest is confirmed by the existence of specific journals dealing with these issues. These two processes are largely acknowledged to be essential elements of professional learning. Still researchers are far from unanimous about their definition as diverse authors come with their own proposals grounded in their different backgrounds and points of view. Nevertheless, most scholars recognise its roots as linked to Dewey and Schön. For Dewey (1910) reflective thought involves not simply a sequence but a consequence of mutually supportive ideas. It consists of a set of facts, study, scrutiny and revision of evidence, working out the implications of various hypotheses and the comparing of theoretical results. Thus, for him, reflection consists of an

*active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends (Dewey, 1910:6).*

Dewey states that in our daily activities we face situations that require routine procedures and others that, being unexpected, elicit a state of doubt. In response to the surprise, we may engage in the process of reflection, turning the experience in the head in order to identify and recognise facts that will solve the problem behind such perplexity. The occurrence of reflection is associated with three lecturer attitudes: open-mindedness, responsibility and wholeheartedness. Open-mindedness allows the lecturer to be tuned to different sources of information; responsibility means considering the consequences of the

actions while wholeheartedness is implied in the commitment with the decision the lecturer takes (Walkington et al., 2001).

Schön (1983) criticises the technical rationality model. He advances reflection as the new epistemology of professional practice. He points out that, within the professional practice, when something does not go according to expectations and there are surprises, we respond through reflection-in-action, which involves operations such as restructuring of the relevant understanding, reframing of the problem and the development of a new manner of performing. It occurs when the professional reflects on practice while he/she is in the midst of it (Schön, 1983). Thus reflection stresses the need to foster the lecturer's experimental attitude toward practice; and it highlights his/her creativity and holistic functioning in the context (Zeichner & Tabachnick, 1991).

Reflection-on-action encompasses the practitioner reflecting on his/her reflection-in-action. It is a kind of post-mortem analysis, through which the practitioner thinks back on a case he/she has gone through and investigates the lessons that can be drawn out of it (Schön, 1983). In the same vein as Dewey, Schön proposed that reflection-in-action results from a state of doubt, uncertainty or difficulty. For Schön reflection can serve as a corrective to over-learning. Through reflection, the lecturer can surface and criticise the tacit understandings that have emerged and grown around routine activities (Schön, 1983). In the same vein, Mezirow (1990) views reflection as either a pause to reassess what one is doing wrong in the pursuit of the best performance or may involve an *ex post facto* reassessment, looking back to prior learning. For him, *ex post facto* reflection may focus on assumptions, processes or procedures followed in problem-solving.

In the definition of Dewey and Schön I find certain shortcomings, since they appear to view reflection as the process that occurs when the practitioner faces an uncertainty or cognitive discomfort. Moon (1999) indicates that reflection should also be viewed as purposeful and outcome-orientated. Accordingly, in this study, I approach reflection as a term standing for the intellectual and affective activities in which the lecturer engage to explore his/her experiences in order to gain new understanding and appreciation (Boud et al., 1984:19). Such efforts in my view are irrespective of the experience being doubtful or discomforting.



Reflection appears to be useful to cope with constantly changing circumstances in which the practitioner operates (Knowles, 1993). Reflection, being action-orientated and contextually embedded, cannot be purely understood as internal to the lecturer (Kemmis, 1985). Hence in this study and following experiential learning, I engage in efforts to take my fellow lecturers (as professional learners) to observe and reflect on their experience of facilitating learning from diverse perspectives in order to bridge concrete experience and abstract conceptualisation, moving in varying degrees from actor to observer and from specific involvement to general analytical detachment (Kolb, 1984). While facilitating their learning, I also reflect on my practice as facilitator and mentor. In this way I concede that reflection entails either an intrapersonal or interpersonal dialogue in which the facilitator of learning stands back from his/her offerings and accomplishments to examine them against a context of a wider framework in order to predict alternative possibilities (Barnett, 1992).

According to Loughran (as quoted by Fook et al., 2006) the increasing popularity of reflection and critical reflection places them in danger of being used thoughtlessly and in an undiscerning manner. This position is shared by other scholars, such as Brookfield who stresses the following:

*The conflating of the terms 'reflection' and 'critical reflection' implies that adding the qualifier 'critical' somehow makes the kind of reflection happening deeper and more profound (2009:294).*

Therefore, he argues that

*reflection is not, by definition, critical. It is quite possible to practise reflectively while focusing solely on the nuts and bolts of process and leaving unquestioned the criteria, power dynamics and wider structures that frame a field of practice (2009:294).*

Critical reflection is a much more complex and deeper process than reflection, as the ideas of many authors converge. It involves the practitioner challenging his/her customary patterns of beliefs, goals and expectations (Van Halen-Faber, 1997) and the perspectives with which he/she interprets his/her practice (Mezirow, 1990). Hence, I subscribe the contention that critical reflection involves the practitioner exploring the contextual circumstances that surround his/her practice as a foundation to attain forms of action that are personally and professionally more fulfilling (Kemmis, 1985). In doing this the practitioner will question



taken-for-granted conceptions and strive to construct democratic educational communities (Grimmett et al., 1990; Knowles, 1993).

Brookfield (2009) states that throughout our professional career we get to know or develop assumptions about people's behaviours, about problem-solving strategies, and about how to guide our choices, judgments and decisions. Since these assumptions might be disruptive to our effective performance, Brookfield calls us to engage in critical reflection which

*involves us recognising and researching the assumptions that undergird our thoughts and actions within relationships, at work, in community involvements, in vocational pursuits and as citizens (2009:295).*

Understood in this way critical reflection involves questioning, replacing or reframing those assumptions that have been, let us say, passionately taken for granted since they were established by a dominant majority. Hence Brookfield (2009) asserts that critical reflection questions the power with which relationships, being detrimental to a certain set of practices, appear to permit or encourage other practices. Concerning the dynamics of power, he argues that in being aware of the phenomenon the practitioner can notice that forces present in the wider society always intrude into the classroom. Therefore, becoming alert to the oppressive dimensions of our practice appears to be the first step in working more democratically and cooperatively with students and colleagues (Brookfield, 1995).

In this study I invited lecturers to engage in critical reflection intended to encourage transformation of their established way of facilitating learning, which is directed to the traditional rational, logical, analytical thinking student. In this way I agree with Brookfield (1995) who states that reflection becomes critical when it assists the lecturer to question assumptions and practices, such as teaching for the left brained, that seem to make our teaching lives easier but actually work against our own long-term interests of promoting whole-person learning. Besides, being alert to the oppressive nature of traditional research practices, I embrace action research, which allows me to promote freedom, equality of opportunities and a cooperative learning environment.

Informed by Ash and Clayton (2009) I promote lecturers' critical reflection as an evidence-based endeavour that is grounded on examining the sources of and gaps in lecturers' professional knowledge and practice in order to improve both. Therefore I regard critical

reflection as scholarly reflection. This for Du Toit (2010) entails critical reflection as grounded in the literature and evidenced by action research. In this study, scholarly approach requires that my fellow lecturers and I constantly go back to examine literature relevant to our fields of specialisation and other sources critically (Du Toit, De Boer & Bothma, 2010). I contend, like Valli (1993), that scholarly reflection resonate to the need for lecturers to avoid unthinking conformity and the unexamined adoption of research findings. Scholarly reflection, thus, appears to be the core of the scholarship of teaching, since as the following quotation shows, it posits that we should

[as lecturers] ... *respond critically, concerning ourselves both with the social and historical shaping of our ideas, institutions and modes of action and with the organisation of action to emancipate ourselves from past irrationality, injustice and dissatisfaction* (Kemmis, 1985:146).

In this study I further regard scholarly reflection as a process that involves my fellow lecturers deconstructing their practice to examine its multiple constituents. Such examination is conducive to new means of understanding, which in turn guide to reconstruction of that practice. In this regard Shulman (1987:7-9) proposes three sources of knowledge that can inform scholarly reflection, namely scholarship of content disciplines, the materials and settings of the institutionalised educational process (e.g. curricula, textbooks, etc.) and the research on schooling, human learning, teaching and development, among others.

Having van Halen-Faber (1997) as reference, through critical reflection, I seek to foster a spirit of inquiry, which is a feature of a lecturer as a lifelong learner. Accordingly, I encourage my fellow lecturers to engage in efforts to identify the connection between the nature of knowing and the nature of learning. These efforts allow them to become researchers of their own professional practice, which attempts to recognise themselves as professional learners and to understand better their students and their students' perspectives (Van Halen-Faber, 1997). Hence they gradually focus on their belief systems and challenge themselves to examine, at a classroom and personal level, the dynamics involved in the transaction of facilitating student learning (Kraft, 2002).

According to Van Woerkom (2010), despite its popularity, critical reflection is such a contested term that there is no single consistent definition and theory of critical reflection. In

an effort to map the existing traditions of critical reflection, Brookfield (2009) indicates four perspectives that can assist us to understand critical reflection. He explains as follows:

*From a critical theory perspective reflection focuses on uncovering power dynamics and detecting the creation and maintenance of hegemony. From a psychoanalytic and/or psychotherapeutic perspective critical reflection occurs when adults become aware of how psychological mechanisms learned and confirmed in childhood are impeding their full development as healthy adults. From an analytic philosophy perspective, being critical is learning to play language games, recognise forms of reasoning (inductive, deductive, analogical and syllogistic) and practise logic. From a pragmatic and constructivist perspective, critical reflection is evident when people realise how they are active constructors of their own experience in a world of open possibilities (2009:296).*

Despite the distinct presentation of the four traditions, in practice there are mixes between these traditions (Van Woerkom, 2010). Therefore, in this study I adhere to the pragmatic constructivist tradition, with significant inputs from critical theory.

In the pragmatic constructivist tradition, critical reflection helps the practitioners to understand their experience, which entails producing fallible truths and achieving relative security in their knowledge claims as they engage in the process of inquiring into their practice (Cobb, 2002). In this undertaking the facilitator of learning and the learner constitute a community that establishes its own local practices (Cobb, 2002). In the same direction, Loughran (as quoted by Harrison et al., 2005) notes that critical reflection entails extracting sense out of 'what we learn' in order to better understand it. I find McNiff and Whitehead (2006) adhering to the pragmatic constructivist perspective, when they indicate that practitioners carry out their action research having in mind that knowledge, being created by the individual, is uncertain and ambiguous; any answer is provisionally applicable to the context in which is generated and, therefore, open to adjustment.

Borrowing Cobb's words, I contend that in adopting a pragmatic constructivist perspective, I encouraged my fellow lecturers to engage in a reflection aimed at critically analysing our classroom practices by means of ongoing and retrospective analysis of our efforts to implement LSF as an innovative way of facilitating learning. In this process I analysed my efforts as facilitator of their professional learning, while the lecturers analysed theirs, which consisted of facilitating their students learning. The primary purpose of conducting such analysis was to develop insights that could inform us about the improvement of efforts

towards the desired transformation. Therefore our effort is focused on our activities as they take place in realities in which we actually live our lives, namely the classroom. In this way I acknowledge Cobb (2002), when he asserts that the agenda of critical reflection is to produce knowledge that is descriptive of our reality, rather than normative and prescriptive. Still I acknowledge the possibilities for others to learn from our reality.

In the critical theory perspective critical reflection occurs within the frame of reference of an individual, who in turn embodies an internalisation of societal and cultural norms and values (Van Woerkom, 2010). According to Brookfield

*[critical reflection] focuses not on how to work more effectively or productively within an existing system, but on calling the foundations and imperatives of the system itself into question, assessing their morality, and considering alternatives (2009:297).*

In my view the quote above indicates processes of internalising societal and cultural norms and values (Van Woerkom, 2010) and of questioning the foundations and imperatives of the system, assessing their morality and considering alternatives. Brookfield (2009) requires the practitioner to consider and understand his/her reality, where he/she has to put to work such norms and values. Therefore call into action the pragmatic constructivist perspective. Such a perspective implies that the lecturer should be able to make sense of his/her practice considering the broad social issues that have an impact on such practice. This position seems to be clearly established by Rowland when he says that critical reflection

*must consider broader questions. These concern, for example, the purpose of teaching, the values which might underlie it, the kind of academic community and the kind of society we are involved in creating, as well as the immediate questions of what to do with a group of students. To concentrate only on former broader questions may amount to little more than armchair philosophy. To concentrate only on the latter may lead to technical competence but not to professionalism (2003:19).*

### **2.8.2 Towards a model of critical reflection**

The field of reflection is featured by a proliferation of theoretical frameworks and models informed by diverse disciplines (Calderhead & Gates, 1993). Van Manen (1995) proposed one model that appears to be complementary to Schön's. Thus, he distinguishes retrospective reflection (past experiences); anticipatory reflection (on future occurrences) and contemporaneous reflection (present). Within this view 'anticipatory reflection' entails the considerations the lecturer takes before the event has occurred. Van Manen conveys

the idea that this form of reflection is implicit in Dewey when he argues that reflection consists, among others, of conjectural anticipation and tentative interpretation of given elements or meaning of the situation and their possible consequences (Dewey as quoted by Van Manen, 1995).

The concept of anticipatory (or prospective) reflection was additionally developed by Conway who states that

*greater attention to prospective reflection might accelerate and deepen the journey toward reflective practice through more focused reflections as lecturers draw in their prior knowledge in a manner that may be more specifically relevant to anticipate future experiences (...) Reflection is not only about taking the long view backward in time, but also, and this is borne out in experience, about looking forward to the horizon. [It entails] Looking toward the future with knowledge of the past from viewpoint of the present (Conway, 2001:90).*

Although scholars do not pay much attention to this kind of reflection, anticipatory reflection appears to be highly relevant to lecturers' practice, since they are frequently involved in predicting possibilities, defining outcomes and in previewing contingencies in their practice while they are planning their activities. Working on Schön's and Van Manen's perspectives, I advanced a tri-partite model of reflection. This consists on anticipatory reflection, reflection-in-action and reflection-on-action, I depict on figure 2.6.

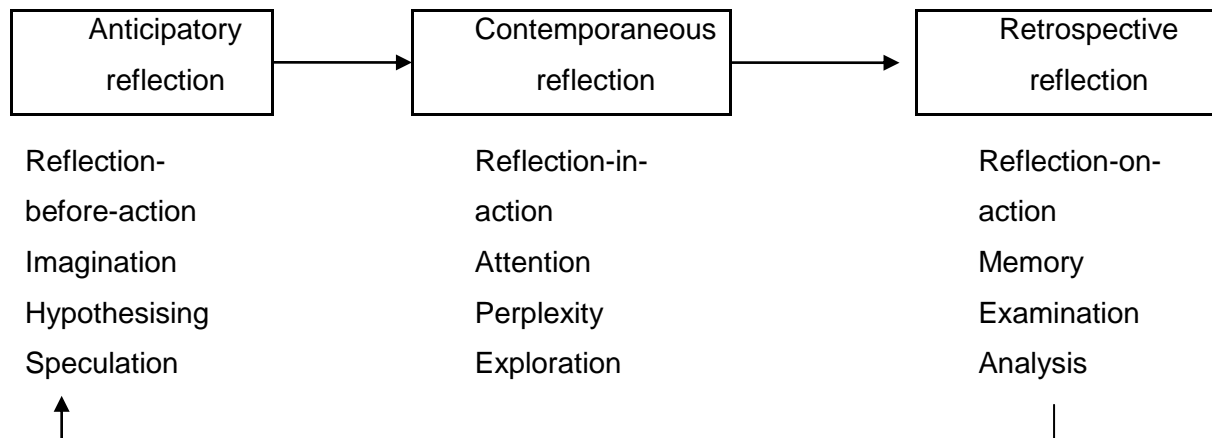


Figure 2.6: Tri-partite model of reflection

The scheme that I present in figure 2.6 suggests that the three types of reflection can work in a circular fashion. Therefore, in anticipatory reflection, I foresee that the lecturer plans and

predicts the activities he/she will carry out, for instance, in a learning opportunity. In this way, using imagination, he/she speculates and hypothesises. The result of his/her planning will be an action carried out in concrete instance. Depending on certain factors, such as the occurrence of surprises, there might (or not) occur contemporaneous reflection. This takes place by means of attention to and exploration of present conditions. After the action has occurred, I envisage certain lecturers engaging in retrospective reflection, which entails examining, analysing, and considering possible alternatives to what has happened. This process leads to the consolidation of previous acquisitions of knowledge and planning for improvement (a new anticipatory reflection moment).

Atkins and Murphy (1993) propose the three-stage model of reflection, which entails awareness of uncomfortable feelings and thoughts, critical analysis of feelings and knowledge, and development of new perspective as a result of the application of previous knowledge to solve the problematic situation. Despite being more akin to reflection-in-action, I find this model to be aligned to that of Boud et al. (1985, 1996) depicted in figure 2.7. Boud et al. (1985, 1996) model presents three components: the experience, the reflective activity based upon that experience, and the outcomes of the reflective activity.

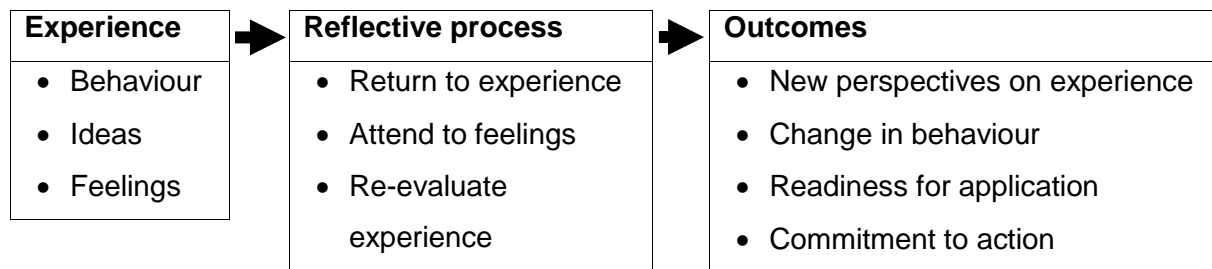


Figure 2.7: Model of reflection in learning (Boud et al., 1985)

I find this model applicable to this study since I envisage the starting point being the totality of experiences of my fellow lecturers (as learners), the behaviours in which they have engaged, the ideas of which they are aware and the feelings that they have experienced. Then they proceed to the process of reflection itself, which entails ‘return to experience’ (recollection of salient events and replay of the experience in the mind), ‘attendance to feelings’ (utilising positive feelings, while eliminating obstructing ones), ‘re-evaluation of experience’ (lecturer’s intent, grounded experience, re-examining, and association with new knowledge and integration into conceptual framework). Finally, they advance to the

outcomes of reflection, which include synthesis, integration and appropriation of knowledge, a new affective state, or a decision to engage in an additional activity (Boud et al., 1996). Further on Moon (1999) suggests the input-reflective process-outcome or purpose model, as I represent it in figure 2.8.

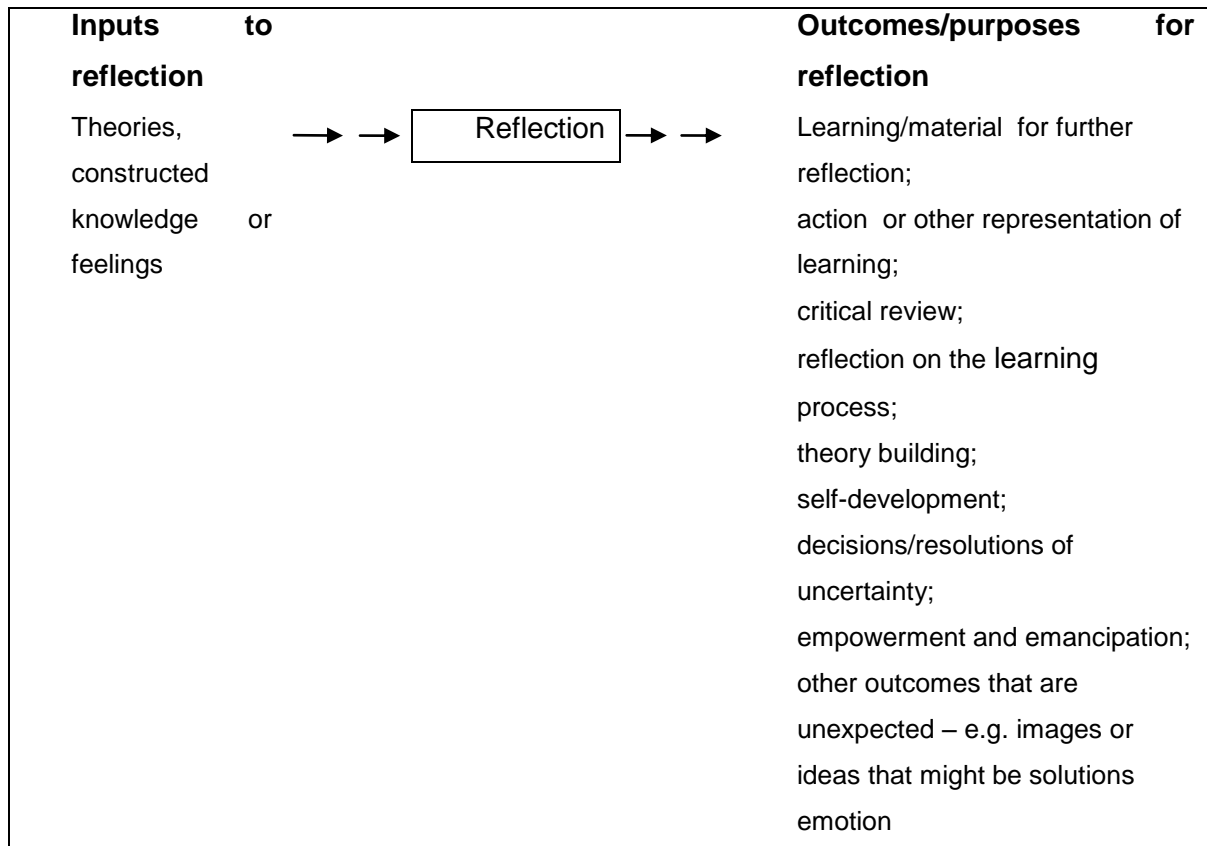


Figure 2.8: Input-outcome model of reflection (Moon, 1999)

According to this model, the input to reflection includes knowledge and material that has been learned. Such material might be factual or theoretical, verbal or non-verbal and emotional. The outcomes would include action or other representations of learning, theory building and empowerment, and a new reflection on the learning process, among others. The models of Boud et al. (1985, 1996) and Moon (1999) are structurally analogous. Both observe the systems pattern input-process-output. Since both appear to be relevant and applicable to professional learning I find that a combination of the input elements they present would contribute to a wider and integrative view of reflection.

I find the tri-partite model of reflection (anticipatory, contemporaneous, and retrospective) applicable to lecturer professional practice. Therefore there is a place and relevance in combining the inputs provided by Boud et al. (1985, 1996) and Moon (1999) and the tri-partite model. This combination would result in the model of critical reflection illustrated in figure 2.9.

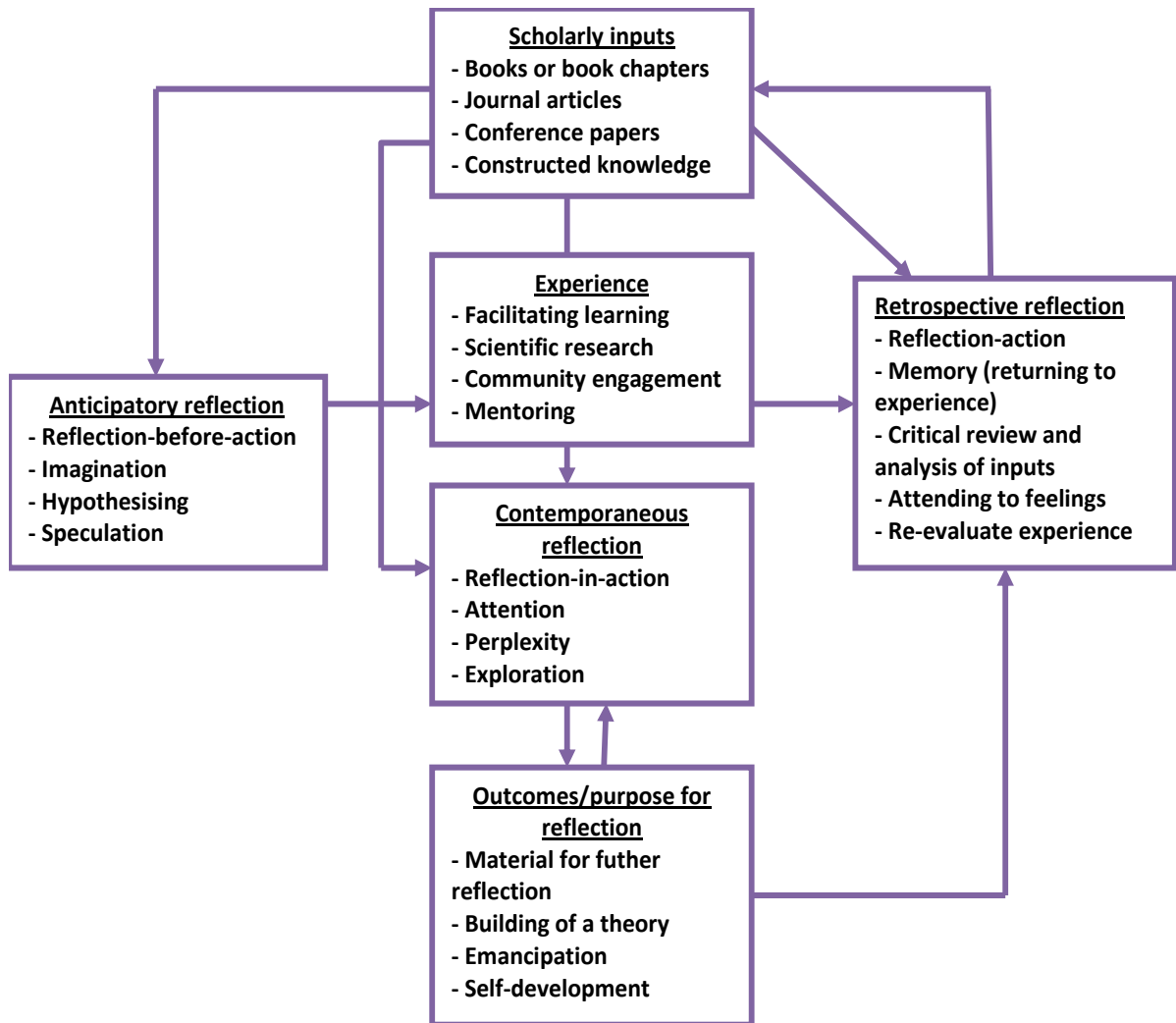


Figure 2.9: Model of critical reflection

Within this model of critical reflection I combine the systemic view of input-process-output, as suggested by Boud et al. (1985, 1996) and Moon and the tri-partite model (1999). I find it aligned with learning-centred approaches to facilitate learning and responds to the need of socially situated PD interventions. Its vertical process illustrates that there are two sources of inputs that might elicit lecturer reflection. On the one hand there are scholarly inputs that



comprise books or book chapters, journal articles, conference papers and constructed knowledge. On the other hand there is the experience *per se*, which covers activities such as facilitating learning, carrying out scientific research, mentoring peers, and community engagement, among others.

The horizontal process entails the anticipatory, the contemporaneous and the retrospective forms of reflection. As a result of the reflective process, I have outcomes of the purpose(s) of reflection. These involve material for further reflection, building a theory, empowerment or emancipation, and self-development. There might be an overlap between certain elements of this model, such as the use of book chapters and facilitating learning. As Moon (1999) states, such distinctions may not be evident in the real-world situations that are typically uncertain and messy although they are important for the purpose of a theoretical examination of subject matter.

### **2.8.3 Tools for reflection**

According to the *Oxford Advanced Learner's Dictionary of Current English* (2005) a "tool" is an instrument that you hold in your hand and use for making things; a thing (like questionnaires) that helps you do your job (research). Corsini (2002), in the *Dictionary of Psychology*, defines "instrument" as a tool or device used in performing specific operations such as display or printing. From these two approaches it becomes apparent that a tool should be a concrete, tangible instrument. However, looking at the literature on reflection and action research, I could find that its use has been extended to metaphorically include intangible devices used to achieve ends, like reflecting. For instance, Rönnerman (2003) mentions the use of educational tools such as diary writing (tangible), observation (intangible) and facilitation (intangible).

One of my research sub-questions is *How can I (we) encourage critical reflection in HEIs?* I organised this section having in mind the need to address this question. Therefore I present a significant portion of the array of tools that are documented as conducive to the promotion of reflection. Then I will indicate, out of such array, those tools I adopt within this study.

There is a variety of possibilities through which the lecturer can engage in reflection. Walkington et al. (2001) propose reflective journals, diaries, portfolios, case studies and

action research. I can integrate these tools within a broader framework as advanced by Crow and Smith (2005). These authors mention reflective mechanisms that include individual self-reflection, reflection on students' feedback, peer observation of teaching, reflective conversations with a mentor, reflective conversations with a 'critical colleague' and joint reflective conversations on shared teaching experience. Hence I regard journals, diaries, and portfolios as modalities of what Crow and Smith call individual reflection, while case studies and action research might be part of group reflection. In fact, there seems to be a range of possible combinations among the diverse reflective mechanisms, framed either under individual or group reflection. Working on the framework of Crow and Smith (2005) and contributions from others scholars (Brookfield, 1995; Moon, 1999; Glazer et al., 2004), I suggest in table 2.4 a set of seven reflective mechanisms, including individual reflection, peer observation, reflective conversation with a mentor, reflective conversation with a critical colleague, co-teaching, group reflection and action research.

I consider individual reflection as the intrapersonal process in which the practitioner re-captures, describes and re-assesses his/her own experience as elicited by a series of tools such as autobiographies, diaries, student feedback questionnaires, journals and critical incidents, among others. Peer observation entails a colleague observing and assessing one's experience of facilitating learning with the aim of providing an outsider perspective and reflection on one's lecturing practice (Crow & Smith, 2005). Reflective conversations with a mentor and with a critical colleague differ in the degree of formality and power differences between both parties. Therefore a mentoring relationship is usually, but not always, provided by a more experienced to a less experienced teaching staff member, whereas reflection with a critical colleague takes place in more informal settings, through telling stories and on-the-spot discussions about issues of concern. Although it might seem reductionist, I consider group reflection as entailing the whole set of activities in which the lecturer is involved with more than two fellow lecturers. Group reflection modalities include small group assessment meetings, participatory action research, short courses, seminars and academic conferences, among others. In this study I make a combination of a personal journal, learningshops and mentoring sessions. The last two have in common the employment of discourse to share and assess beliefs, feelings and values (Cranton, 2010). I summarise the different reflective mechanisms presenting its features, strengths and weaknesses in table 2.4.

Table 2.4: Features, strengths and weaknesses of reflective mechanisms

Reflective mechanism	Features	Strengths	Weaknesses
Individual reflection	Intrapersonal process in which the practitioner re-captures, describes and re-assesses own experience.	Encourage the valuing of personal observation and knowledge. Develop questioning attitude and critical thinking. Increase ownership of professional growth.	Isolated reflection can become ritualised and decayed. Lack of others' challenge. Self-protective attitudes easily occur.
Peer observation	A colleague observes and assesses one's practice.	Feedback provides alternative perspectives on issues that have been taken-for-granted. Colleagues provide more accurate perspective than a student would give.	Do not usually include a continuing relationship between the parties. The relationship may be transient. There is little chance for the observer to see the development over time.
Co-teaching	Two or more lecturers involved in collaborative planning, facilitating learning and assessment of the same students.	Continuous, mutual feedback and encouragement. Increased interaction. Contribute to creating learning community.	Lecturers not believing in its practicality given the pressures under which they work. Lack of confidence in the relationship results in superficial communication.
Reflective conversation with a mentor	Process where a new lecturer seeks knowledge, support and guidance from a more experienced one in order to gain a safe transition.	There is monitoring of the development over time. Contribute to development of self-awareness. Increase knowledge of subject matter and pedagogical skills.	Power difference may hinder freedom and constructive discussion. Lack of mutual and reciprocal activity to promote learning for the mentor.
Reflective conversation with critical colleague	Use of a critical colleague for regular, ongoing reflection and assessment.	Equal status may contribute to greater openness. Source of continuous feedback and encouragement. Source of first-hand experience. Appropriate to confront espoused theories and theories in use.	Absence of reciprocity and mutuality to promote learning for both sides. The random basis of its occurrence might result in lack of structure. The telling story character can decrease its illuminating value.
Group reflection	Discussions that occur in meetings involving more than two professionals to talk about issues related to the field of action.	Increase feelings of autonomy and confidence. Provide practical solutions to real-life problems. Develop and/or sustain positive attitudes about professional challenges. Release stress and the expression of emotions.	Extremely difficult to have the group together. Incompatibility of personalities might be a drawback. Difficulty to compose a group with similar level, needs, and experience. The themes not relevant to all might reduce participation.

#### **2.8.4 Reflection and (or within) the whole-brain model**

My last two research sub-questions are *What is the relationship between lecturers' brain dominance profiles and their styles of reflection?* and *How can I (we) use the principles and practices of LSF to design a model of Learning Styles Flexible Reflection (LSFR)?* I have explained in the introductory chapter that the inclusion of such research questions is aligned to a fundamental reason. The adoption of Learning Style Flexibility (LSF) requires the lecturer to be aware of his/her brain profile, which is provided by the Herrmann Brain Dominance Instrument (HBDI). Having these profiles and possessing the lecturers' reflections recorded was a precious opportunity to establish a link between the whole brain model (through brain profiles) and reflection. In this way the study addresses a felt gap in the study of reflection, which consists on the lack of connection between reflection and non-rational processes, such as emotion and intuition.

Reflective practice has been widely studied from different fields and perspectives. Moon (1999) presents different ways in which scholars have used reflective practice. I find such approaches relevant to this study since they provide insight into comprehending the relationship between reflection and the whole-brain model.

##### ■ *Reflective practice as a set of abilities and skills*

Reflective practice is regarded as being largely a list of abilities set in the context of appreciating the teaching political context and gaining empowerment (Moon, 1999). Calderhead and Gates (1993), who referred to secondary school teachers, say that reflective practice aims mostly at fostering lecturers' appreciation of their working as socially and politically situated and requiring an ongoing critical scrutiny of the surrounding milieu. Accordingly, Atkins and Murphy (1993) state that certain cognitive skills are necessary to engage in reflection, including self-awareness, description, critical analysis and assessment. Hence, reflection appears to be linked to the left hemisphere and implies critical reflection.

##### ■ *Reflective practice as an orientation to problem-solving*

Scholars see reflective practice largely in terms of solving the problems in practice (Kirby & Teddlie, as quoted by Moon, 1999). This can be a pro-active seeking of problematic situations, a conscious process of identifying problematic issues in their practice and pursuing solutions that bring about valued effects on student learning or the seeking of

understanding. Pro-active seeking of problematic situations matches the need for generative learning (Senge, 1997) which requires innovative ways of looking at the practice situation. This perspective implies reflection to be linked to the left hemisphere.

■ *Reflective practice, intuition and emotion*

The relationship between emotion and reflection is sparsely documented. Valli (1993) mentions the absence of any references to emotion and the process of intuition. Although not explored, intuition is recurrently mentioned by Schön who says

*[artistry] may mean intuitive judgement and skill, the feeling for phenomena and for action that I have called knowing in action ... reflection-in-action ... consists in on-the-spot surfacing, criticizing, restructuring, and testing of intuitive understanding of experienced phenomena (1983:241).*

I understand the intuitive and emotional (feeling) aspects of reflection have remained unexplored because the working definitions we currently employ are detrimental to negotiation, contemplation and caring since they are well-built and founded on Western cultural heritage, for which the hallmark resides in analysis, problem-solving, propositional thought and discourse (Houston & Clift, 1990; van Woerkom, 2010).

With regard to the linkage between reflection and emotion, Moon (1999) advances that there seems to be two possibilities that are not mutually exclusive. The first indicates that emotion contribute actively to the process (how) and outcome of reflection. The second shows that emotion could be the content of a reflective process in the same way as cognitions.

Boud et al. (1996), within their model, present the outcomes of the reflective process linked to the whole-brain model. They state that we can make association in writing, through drawings, on tape, with another person or in whatever way seems to be the least constricting at the time. Additionally, they assert that integration can be achieved by means of the generation of brain patterns, concept maps or Venn diagrams:

*These involve portraying visually the links, interconnections and overlaps between ideas, concepts and phrases ... in areas which do not lend themselves to visualization in this way, the use of analogies, smiles and metaphors is more appropriate. In the domain of interpersonal relations repertory grids have been extensively used (Boud et al., 1996:32).*

Description of elements or forms of reflection that are similar to intuition and integrate emotional reactions and cognition seem to complete the whole-brain spectrum of reflection. Korthagen (1993) contrasts 'rational' reflection (associated with the left hemisphere) to 'non-rational' reflection (result of right hemisphere processing). Accordingly he asserts that

*while in the left hemisphere the interpretation of incoming information is mediated by logically structured cognitive schemata, the right hemisphere makes use of gestalts, the principal function of which is to integrate separate stimuli (...) In the right hemisphere the principle of the integration of experience is dominant over the principle of logical ordering, while in the left hemisphere is the reverse case ( ... ) In a gestalt the person's needs, values, meanings, thoughts, feelings and actions are all united into one inseparable whole (Korthagen, 1993:319).*

I find a match between Korthagen's modes of information processing and Herrmann's whole-brain model. The mainly distinctive aspect is that the whole-brain model is more detailed, dividing each hemisphere into two halves. Therefore, Herrmann splits between the A, B, C, and D quadrants. Both A and B quadrants are logical and located in the left hemisphere. This idea is shared by Korthagen. On the right hemisphere Herrmann poses the C and D quadrants. This hemisphere is non-rational and makes use of gestalts, where the needs, values, meanings, feelings and actions are united (Korthagen, 1993).

Clarke et al. (1996) propose *holistic reflection*, which in essence is aligned with the non-rational reflection. With such proposal, Clarke et al. aim to expand the modes of reflection into other forms of grasping, requiring wider (aesthetic) forms of representations of reflection. Such forms include poetry writing, drawing, painting, sculpture, collage, dance, drama or graphic methods. Within this proposal, I find the main limitation residing on the designation, since *holistic reflection* should signify reflection that happens in a whole-brain fashion, not only in one hemisphere. Hence, I find the forms proposed by Clarke et al. matching the C and D quadrants, located in the non-rational, right hemisphere.

Korthagen (1993) proposes alternative approaches to promote non-rational reflection (and rational reflection as well), including metaphors, drawing and painting, photographs and the presentation of pictures. Modes of reflection such as those proposed by Clarke et al. (1996) and Korthagen (1993) are pointed out to bring many advantages. These include assisting learners to know themselves and others and whole persons (Yorks & Kasl, 2002), surfacing tacit thoughts and feelings (Kearney & Hyle, 2004), and encouraging the expression of

multiple truths, which interact to make new, individual and collective meanings and enabling teachers to go beyond the descriptive and analytical modes (Leitch, 2006). Within the current study I invited lecturers to present their ideas using the pathways they deemed most appropriate. Besides, I employed photograph and video-recording to elicit their critical reflection on their practices. These techniques present resemblance to those advanced by Korthagen.

## **2.9 Conclusion**

In this chapter I examined the major theoretical perspectives that appear to underpin the focus of the current study. I started by presenting the synthesis of the contemporary discourses in professional development literature. Since professional development is ultimately a process of learning, I proceeded to visit the main learning theories that appear to be relevant and illuminating to this professional development study. After that I explained the origins and features of the whole-brain model and Learning Style Flexibility and, I discussed it as linked to professional development and the multiple intelligences theory. Finally I reviewed reflection as the vehicle and catalyst for professional development in connection with the Herrmann whole-brain model and the LSF.

In the next chapter I present the research design.

## CHAPTER 3: Action Research Design

### 3.1 Introduction

I carried out the current study guided by the question, *How can I (we) promote critical reflection on innovative practice, contributing to the professional development of academic staff in Mozambican Higher Education Institutions?* For this purpose I had in mind to explore the extent to which reflection is integrated within existing professional development interventions; to advance suggestions about how critical reflection can be encouraged in HEIs; to explore the relationship between lecturers' brain dominance profiles and their styles of reflection; and to explain how we can use the principles and practices of LSF to design a model of LSFR.

In the current chapter I describe participatory action research as the overarching methodology I have adopted. Hence, I describe and explain the methodological procedures I followed and I provide the rationale for its use to answer the question mentioned above.

### 3.2 Research paradigm

Research studies are steered by a basic set of assumptions, which compose the individual researcher's way of looking at, thinking about, and acting toward the world. These assumptions, encapsulating a paradigm, deal with ontological, epistemological and methodological issues (Mertens, 1998). The ontological assumption is about the nature of reality, while the epistemological deals with the relationship researcher-researched and the methodological concerns of the process of research (Creswell, 1994).

To frame a study within the education field is an increasingly tricky task. There are two reasons for this: The first is that education research is caught within a context that only now seems to witness the pacification after decades of paradigm war. The second is the paradigm proliferation era, which makes even trickier the task of framing one's study. However, as Lather (2006) contends, paradigm proliferation, rather than being an epistemological claim, is a historical and ontological one. For her, it is nothing to be erased, but rather something to be considered as add-ons as we work with current models.



A prevailing question concerns the major paradigm to which action research belongs. In this respect, Lather (2006) states that action research can be placed either within the interpretive paradigm or the critical theory, depending on the assumptions guiding it. Kemmis (1985) argues that action research, as framed within critical theory, requires the development of understanding, insights and of practical action, an approach that is emancipatory. Lynch (1995) argues that, being excellent on critique, critical theory appears to be powerless to offer concrete alternative ways of doing. Accordingly, McNiff and Whitehead (2006) put forward that action research, going into action (how can I transform my practice in an accountable way) transcends critical theory, becoming research paradigm in itself (Zuber-Skerritt, 1996; Lincoln, 2005; McNiff & Whitehead, 2006).

In this study I adhere to action research paradigm on the grounds of its assumptions, since my aim is not only to understand the situation (To what extent is reflection integrated within existing PD interventions in the Mozambican context of Higher Education?), but mainly to go to action, which entails promoting my fellow lecturers' professional learning and transformation in lecturing practice, and monitor it. I have documented such monitoring mainly by means of video recording and keeping personal journal. In the journal I recorded thoughts and feelings that I experienced while carrying out the research. It allowed me to verify the progress and reflections that I achieved in my learning process.

While carrying out this study I am sustained by the ontological belief that my research site, the university, is a setting featured by a dialectical relationship between subjects (Guba & Lincoln, 2005). Therefore I observe myself as being in a reciprocal influential relationship with other lecturers in our context of facilitating students' learning. Instead of taking a spectator approach (McNiff & Whitehead, 2006), I engage in collaborative enquiry with other lecturers. Despite the fact that the question, *How can I encourage critical reflection in HEIs?* puts me as the main focus and instrument of the research, I understand and value that to have this question answered I have to involve other lecturers that are influenced by me, while I carry out efforts to encourage reflection on their professional learning and that influence me through sharing their knowledge, experiences, reactions and feedback. We recognise that we are in company and that we compose a community of 'Is' all of whom understand that our *claims to educational influence will be evaluated by others within their range of influence* (McNiff & Whitehead, 2006:25).

I adhere to the epistemological assumption according to which knowledge creation is a constructive collaborative process, not given. My epistemology is that of the experiential and propositional creation of knowledge (Guba & Lincoln, 2005). Knowledge in this study is generated by me in interaction with other 'Is' (McNiff & Whitehead, 2006). Such knowledge presents mere possibilities, since it is uncertain and ambiguous. The multiple answers that our context might pose are provisional. The conclusions we draw on the basis of careful observation of what follows from how we act, on our context of lecturing practice show what is possible in this particular situation of us (Biesta, 2010). For this reason I am not looking for one best way or approach that can be proposed as general rule to others as solution for their problems or an innovation they can adopt with the same results. Rather, I intended to produce my living theory, through inviting my fellow lecturers to learn with me within our particular context. It is my living theory because it is the theory of my practice, generated from within my living practices (Whitehead & McNiff, 2006:2). Labelling it living or personal theory does not imply no being shared. Rather, it serves to highlight that this knowledge is value-laden and exists within our framework of constructivist learning, which does not exclude the linkage between my subjective knowing with that of the others professionals (van Halen-Faber, 1997). Hence, I believe that others can learn and apply the knowledge I generate through this study, although I do not carry it out with the avowed intention to generate transferable knowledge. In assuming that position I am sustained on Kemmis and McTarggart (2005) who assert that

*while recognizing that every practice is transient and evanescent and that it can be conceptualized only in the inevitably abstract terms that language provides, action researchers aim to understand their own particular circumstances, without reducing them to the ghostly status of the general, the abstract, or the ideal (2005:596).*

In accordance with all these assertions, while carrying out this action research I find myself, as Whitehead and McNiff (2006) indicate, cultivating my field with a particular idea in my mind and, in view of that, I am inevitably organizing this field according to my own preferences. Therefore, as Whitehead and McNiff (2006) state, the theory I generate is my own provisional understanding that I have to test constantly against the critical responses of other 'Is' to see if it can be validated, by means of intersubjective validity. Accordingly, this living process *require an openness to new possibilities, and a resistance to closure* (Whitehead & McNiff, 2006:23).

### 3.3 Action research

The origins of action research are traced to the mid-1940s and its history is linked to diverse fields including industry, nursing and education. Its foundation is associated with Kurt Lewin. Lewin was interested on understanding and changing human actions, in the pursuit of reducing prejudice and discrimination against minority groups and increasing democratic behaviors (Carr & Kemmis, 1986; Noffke, 2002). His first publications are related to community action programmes (Kemmis & McTaggart, 2005). Lewin acknowledged the importance of group decision in facilitating and sustaining changes in social behaviour and coined the phrase ‘action research’ to convey the process as composed by planning, fact-finding and execution (Carr & Kemmis, 1986).

Since then action research is widely employed in diverse fields, such as health, social care, community development, and education. According to Noffke (2002) the use of action research has been even expanded to areas which seemingly have disparate, if not antagonistic, assumptions and purposes, such as soft systems, case study research, and quality circles, among others.

I explained in chapter 1 the origin of my study as being the lack of opportunities to share teaching experiences with colleagues, as it happened when I attended induction courses facilitated by the CAD. On the other hand I felt a gap in the opportunities fellow lecturers and I had to attend workshops, seminars, and conferences. Considering such a need, my intention with this study was to implement an experimental professional development intervention as an exemplar of how critical reflection can be facilitated. Besides, I meant to scrutinise my experience as a facilitator of such professional development. Therefore, the option for action research appears to be naturally aligned with the character of the practice I am investigating – it is about a situation that affects my fellow lecturers and me, and entails my intervention. My choice has been detrimental to other methodologies, which could not assist me in this process of constructing my personal theory as a practitioner. While other methodologies are concerned with understanding and explaining the phenomena, action research aims at the promotion of improvement (Kemmis and Carr, 1986).

Furthermore, I find my choice sustained by Beaty and Cousin (2003) who say that in action research those affected by change take up an active role in the process, particularly

concerning its reflective elements. I have found action research with potential to allow me to field test the innovation (learningshops to reflect about LSF) with an eye on the future shifts in practice such testing suggests (Beatty & Cousin 2003). Therefore, action research appeared to offer me the way to theorize my/our current practice and transform such practice through critical reflection (Carr & Kemmis, 1986). In line with this, I find that this study accommodates the three conditions that, according to Carr and Kemmis, are necessary and sufficient for us to say that it is action research

*Firstly, a project takes as its subject matter a social practice, regarding it as a form of strategic action susceptible to improvement; secondly, the project proceeds through a spiral of cycles of planning, acting, observing and reflecting, with each of these activities being systematically and self-critically implemented and interrelated; thirdly, the project involves those responsible for the practice in each of the moments of the activity, widening participation in the project gradually to include others affected by the practice, and maintaining collaborative control of the process (1986:165).*

In line with these authors, my study captures a social practice as subject matter, since any educational act is inherently a social practice whereby me and my fellow lecturers inter-act, sharing meanings, and collaborating throughout all stage of the research process. Secondly, it involves a group of lecturers who stand accountable for all moments of their practice through a collaborative control of the process. Finally, as it is demonstrated in the next paragraphs and chapters, it takes place through an intertwined spiral entailing planning, acting, observing and reflecting. Although there are slight variations in the terms employed, this spiral of cycles is generally described as featuring the process of action research. The transformation of lecturing practice results from a series of cycles of planning, acting, observing and reflecting where each cycle assimilates lessons from previous cycles while defying new ones (McNiff, 1988; Kember, 2000).

There are many definitions of action research. For instance, Zuber-Skerritt who contends that action research is an appropriate paradigm for professional development, defines it as

*A collaborative, critical and self-critical inquiry by a lecturer into a major problem, issue or concern in his/her own practice (1996:3).*

In conforming with Zuber-Skerritt's definition, I carry out the action research in collaboration with fellow lectures with the aim to reflect on the innovative practice encapsulated by the adoption of LSF. What would be considered a concern within our practice is the lack of

opportunities for lecturers to engage in reflection as a way to promote their professional growth. In this way, jointly with fellow lecturers, we are involved in critical analysis of our lecturing practice in an effort to improve such practice by means of adoption of innovative ideas and learning from its outcomes. The above definition by Zuber-Skerritt contrasts somehow with the one advanced by Du Toit, who views action research as

*The vigorous application of eclectic research methods by a practitioner to investigate his/her own practice with a view to innovating or transforming such a practice and constructing new meaning (2010:4).*

Accommodating Du Toit's (2010) definition, in this study we make efforts to apply diverse research methods dynamically, such as video recording, photographs, student feedback and questionnaires, among others to investigate our practice, which as I said is undergoing transformation as we increasingly adopt LSF.

The main divergence between the two definitions above lies in the disposition from which the practitioner starts. Du Toit (2008, 2010) observes that inquiry into a "problem" or a "concern" – as stated in the Zuber-Skerritt definition and others – entails a negative starting point. Hence he calls it a deficit-based approach to action research. Conversely he suggests an asset-based approach, where the lecturer works and tries out an innovative idea in order to transform his/her practice.

Against what I stated in the previous paragraph, I find my study adopting both a deficit-based approach, searching for how critical reflection can minimise the isolation to which young scholars might be devoted, and an asset-based approach, introducing LSF and seeking to link reflection with the whole-brain model. Therefore I consider the research design of my study as a dual action research approach.

The scholar community documents many features of action research. In the next paragraphs, I explain some of them and discuss the extent to which they apply for this study.

Action research is extensively acknowledged as catalyst and vehicle of professional development (Carr & Kemmis, 1986; Pill, 2005; Winter, 1996; Zuber-Skerritt, 1992). As such, Noffke (2002) says it assists lecturers to increase their self-awareness and/or

professional skills and dispositions. It improves the practice of learning, advances lecturers' professional inquiry and professional knowledge (Zuber-Skerritt, 1992). And brings the additional benefit of being responsive to the transformations lecturers go through within their practices, while research is in progress (Webber et al., 2003). My action research catalyses mine and my fellow lecturers' PD since carrying it out I meant to increase mine and my fellow lecturers' knowledge about strategies of facilitating learning aligned to holistic learning styles (LSF) and I aimed to introduce them to action research as a form of practitioner research. Besides, this venture allowed us to achieve other gains which compose the lecturers' intellectual, procedural, and productive growth (Evans, 2002). These include, for instance, our increased ability to carry out research on autonomous fashion, the ability to engage in reflection on on-going basis, among others.

I conceived this study with the aim to promote critical reflection on our innovative practice, which consists on the implementation of LSF. My fellow lecturers and I monitor our efforts by means of action research, which then appears to be a joint venture. In this way I find this study adhering to the postulate that action research is both collaborative and inclusive. Accordingly Carr and Kemmis (1986) assert that action research entails including all participants who are affected by action in the communication intended to promote mutual understanding and consensus in common action. In the same vein, Webber et al. (2003) indicate that action research consists in research *with* those involved, not *on* those involved. They go on to say that action research rejects a view of research in which its 'subjects' become its 'objects' through the distancing of the research from the researched. This kind of research emphasises the objective status of the researched as independent of the researcher. My study is distant from this view that is typical of positivistic educational research. Contrary to this position, in my study my fellow lecturers and I assume ourselves as engaged in a collaborative social process of learning, realised by ourselves as practitioners who join together in transforming the practices through which we interact in a shared social world (Kemmis & McTarggart, 2005:595). Accordingly, although I am central, I should never be understood as in isolation, since I work in social situations and carry out this study with other 'I's (McNiff & Whitehead, 2006). This is a strength since most action is determined by a pluralistic community rather than by a single individual (Webber et al., 2003).

Action research involves learning, not abstract but actual practices of particular people in particular places, leading to real and material changes in what people do, how they interact with the world and with others, and what they mean and what they value (Kemmis & McTarggart, 2005:595). In saying this, Kemmis and McTarggart resonate the pragmatic constructivist tradition to critical reflection which contends that educational practices such as action research assist the lecturer in specifying his/her goals and strategies in terms of human knowing rather than in terms of normative, prescriptive and static knowledge structures (Cobb, 2002). In my study I adopt action research, expecting to promote my learning and my fellow lecturers' professional learning through a process of reflection on own practices supposed to result in the implementation of holistic strategies of facilitating learning, attainment of new ways of interacting with one's practices, students and fellows, and in the increased valuing of people's freedom, collaboration and equality. In this venture I view myself and my fellow lecturers as constituting a reflective and self-reflective community of participant-researchers (Carr & Kemmis, 1986) engaged in efforts aimed at understanding and transforming our local practices. In this way, in this study we show that we live in a world of significance and meaning and our individuals experiences can only be understood according to the interpretations each of us make of his/her teaching contexts (Mann, 2003:83).

Action research is a democratic process, since it requires that all practitioners implicated should have equal opportunities to participate in all its phases (Carr & Kemmis, 1986). McNiff and Whitehead (2006) corroborate indicating that research participants have the same status of research equals who enjoy equal rights in terms of their capacity and opportunities to know and make choices. Hence, they say, action research processes are egalitarian, and require democratic negotiation of relationships. My action research is democratic to the extent that, a part of giving opportunity for my fellow lecturers to participate freely, I provided them with all relevant information concerning the aims and processes of the research. I promote consensual decision-making, shared values, beliefs and goals, equal rights of participation in discussion and shared responsibility for ownership of decisions and practices. These are conditions Cohen et al. (2003) indicate to contribute to the success of action research. Notwithstanding, Carr and Kemmis warns for the fact that

*Action research should not be seen as a recipe or technique for bringing about democracy, but rather as an embodiment of democratic principles in research [and*



*practice], allowing participants to influence, if not determine, the conditions of their own lives and work, and collaboratively to develop critiques of social conditions which sustain dependence, inequality or exploitation (1986:164).*

Action research is scholarly reflection. According to Lomax (as quoted by Ghaye & Lillyman, 2010) all practitioners hold living theories that are continuously created and recreated. Such recreation occurs by means of systematic self-reflection (Carr & Kemmis, 1986). Hence, du Toit et al. (2010), indicate that action research captures the essence of scholarly reflection, which is guided against an accountable theoretical framework and everyone involved in the curriculum development process. In this way, action research as scholarly reflection improves the understanding of our practice, while contributing to advance the body of knowledge. In this study, we examined relevant literature about reflection, learning styles, whole-brain model, etc. Then we discussed our practices under the light of such literature. We tried out new ideas as informed by the reviewed literature. We evaluated our practices against the same literature. And so forth. In this way, we deconstructed our practices to examine its multiple constituents, to reach new means of understanding such practice, which we then reconstructed.

McKernan (1996) claims that action research is an ideology through which the practitioners become producers and consumers of curriculum inquiry. It is the process of a practitioner attempting to have new thoughts about his/her familiar experiences (Winter, 1996). Accordingly, McKernan says that

*Action research is carried out by practitioners seeking to improve their understanding of events, situations and problems so as to increase the effectiveness of their practice. Such research does not have the writing of research reports and other publication as a primary goal (1996:4).*

In this study I adopt action research as an approach to inquiry by means of which, me and my fellow lecturers, we investigate our practice in order to understand its intricacies, problematise such practice and then transform it. We gauge our initial point. We proceed to implement the innovation and then we monitor and evaluate the final results, which for action research do not mean the end point. In this way we are constructing our living theory about how can we promote critical reflection and how holistic learning styles can be accommodated within the context of facilitating learning. In this way action research emerged as a process we could use to stand accountable for our contribution towards new



lecturing practices. Upon the advice of Kemmis and McTaggart (2005), through this action research I find myself and other 'Is' involved in the investigation of our actual practices and learning about our particular practices in a specific context, such as the Eduardo Mondlane University. As such I emphasise that am not looking for certain knowledge that can be transferred to other contexts. Rather my intention is to produce my personal theory to show that I am living in the direction of democratic values such as freedom, equality, and collaboration that underpin my professional learning, critical reflection and LSF. For this purpose I align with McNiff and Whitehead who contend that

*Personal theories are especially powerful for sustainable educational change. These personal theories are also living theories, because they change and develop as people change and develop themselves. The purpose of action research is to generate living theories about how learning has improved practice and is informing new practices (2006:12).*

Action research can be differentiated from traditional educational research in a number of ways. According to Kember (2000), what clearly distinguishes action research from traditional research, is the relationship between the research and what is being researched. While traditional researchers intentionally avoid disturbing their research subject, action researchers engage in the site, if they are outsiders, with the declared purpose of improving their practice, which implies greater involvement with the research subject. Within this study I see myself as inside researcher working with fellow who are interested in improving their practices. Hence, through authentic and situated learning process, we engage in a cooperative process of exploring our practice in view of synthesizing, creating new concepts and/or making meaning out of the our experiences. In this way, we construct our practice theory, which emanates from interpreting our practice and formulating our theory that, strengthened and returned, will return to inform our practice (McKeena, 1999).

Another distinctive aspect of action research is implied in the combination of the words 'action' and 'research' or theory and practice. Hence, action research is praxis, since it is *action which is considered and consciously theorized, and which may reflexively inform and transform the theory which informed it* (Carr & Kemmis, 1986:190). My study entails our research about how me and my fellow lecturers put new ideas into practice in order to adopt action directed to transform our ongoing practice. Therefore it contributes both to transforming educational practice and to advancing theory. More concretely, it is an effort I

carry out with a group of lecturers (other Is), with the aim of encouraging reflection on our transformative practice. Hence, I can say that I/we carry out this action research as part of our professional development, but also as a way of producing knowledge, our living theories, which are in our interest and benefit our practices and those of others who might deem it worth using. In doing this I have the following in mind

*Unlike traditional social science, action enquiries do not aim for closure, nor do practitioners expect to find certain answers ( ... ) we try multiple innovative ways until we find the one that is right for us. We look out for what might be a useful way forward, and try it out. One step leads to another, and one cycle of action–reflection leads to another. Answers are held as provisional because any answer already has new questions within itself. This emphasizes the value of being open to new possibilities, and understanding learning as never complete. Traditional ways of doing research offer a completed story. Action researchers let their own story evolve. It is as much about the storyteller as about the story (McNiff & Whitehead, 2006:30).*

The notion of the researcher as research instrument is established in action research and appears to be a peculiarity of this kind of research. I support that on McNiff and Whitehead's (2006) recurrent questions such as "What is my concern?" and "What do I do about the situation?", among others. These questions convey that action researchers do research on their practices, which are part of a wider social world. The concept emphasizes the function of the researcher's knowledge and beliefs as unique to him/her. That is, as a research instrument I approach the research situation with my own subjectivities, which play a role in my analysis and understanding. Therefore, in order to avoid too much emphasis on myself in the process, as the researcher, I carry out this research in company with others (McNiff & Whitehead, 2006) in order to establish our self-reflective community pursuing mutual understanding and consensus (Carr & Kemmis, 1986). Hence I focus on the transformation of my practice and I seek to achieve intersubjective understanding within this transformative learning process by involving my fellow lecturers in the systematic confrontation and expansion of our understandings. This takes place both in the context of our practices and in explicitly sharing and examining our understandings by means of communication.

Zuber-Skerritt (1992) employs the acronym CRASP to designate five factors through which action research is conducive to increased understanding and improvement of learning and professional development:

- Critical attitude – Critical reflection on one's practice is the main vehicle for action research.

- Research into teaching – Action research is the adequate process for lecturers to develop living personal theories of education which is context-bound.
- Accountability – Through action research, lecturers can contribute to maintaining the university autonomy and freedom from external excessive control.
- Self-evaluation – Self-evaluation is at the very heart of action research.
- Professionalism – Action research contributes to the professionalism of HE lecturers, through their active and accountable participation in the formulation of their professional framework, avoiding outside agencies' arrangement.

These elements are applicable to my action research: one of my aims with this study is to promote critical reflection as the core element of lecturers' professional learning. In carrying out this study I invited lecturers to investigate their practice, which to a certain extent represents a self-assessment aimed at demonstrating that there is transformation in our practices. The movement of action research in Mozambique is still embryonic. Therefore with this study I expect to contribute to its growth so that by having increasingly more lecturers involved there will be contributions for accountability and for the establishment of a professional association.

The other distinctive feature of action research compared to the traditional research lies on its transcendence over such contemporary prevailing research methodologies, which are aligned to the legacy of the Western culture way of thinking. According to Houston and Clift (1990) and van Woerkom (2010), such Western tradition places great emphasis on analysis and problem-solving in detriment of intuition, emotion, negotiation, contemplation and caring. Action research appears to surpass such shortcoming, since it is holistic. It involves not only one's intellect in the learning process but the whole person, including values, emotions, feelings and interpersonal aspects (Zuber-Skerritt, 1992). Later in this chapter I show the link between action research and LSF.

Despite the features of action research I have advanced, this methodology does not stand unproblematic. Scholars point to a certain number of weaknesses or limitations faced by action research. Hence, McKay and Marshall (2001) indicate that action research is criticised for being a little more than consultancy, for lack of impartiality and bias, for the lack of scientific rigour and for the difficulty of generalising its results. Zuber-Skerritt (1992)

indicates that action research can be problematic since it requires developing a team spirit, group collaboration and consensus, getting support from top management. In turn, Webber et al. (2003) mention action research weaknesses that include the difficulty to find an optimal balance between action and analysis, the unwieldy methodology it encompasses, the mismatch occurring between action research aims and those of research on academic development, and the limited involvement of the researching professional. In this study I carried out some measures with the aim to minimise the effects of these problems.

Concerning action research being like consultancy, I surpassed this problem by the adoption of what McKay and Marshall (2001) call dual-action research. Therefore, apart from searching for solutions to a problem, I attach a considerable attention to a research interest cycle, through attuning it to issues such as LSF, constructivism, situated learning, and so forth. I have addressed the potential impartiality and/or bias in action research through the measures I indicated in section 3.11 to have adopted in order to increase validity and reliability. Since generalisability or transferability is not an aim of this study, it does not appear to be an issue of concern. Throughout the study, I indicate that with this study I aim to produce my personal and living theory, as a way to stand accountable for my practice, which entailed the transformation I have gone through along with my fellow lecturers. Regarding the lack of rigour in action research, I surpassed this problem by adhering to the vigorous application of eclectic research methods (Du Toit, 2010:4) in order to gather compelling evidence which could assist me and my co-researchers to evaluate, improve and steer decision making and practice (Corey as quoted in Cohen et al, 2003). Hence, I have adhered to the main principles of rigorous scientific research.

The requirement for the development of a team spirit did not appear to be a problem at all in this study. I show later in Chapter 4 in this regard how aspects such as trust, empathy and power sharing have contributed to the establishment of group collaboration and consensus between my fellow lecturers who participated in the learningshops and me. Getting support from Faculty top management was not a problem. I explained the purposes, features and advantages of action research for me, for my fellow lecturers and the Faculty per se.

Against these weaknesses, action research presents an array of strengths, which appear to sustain that it has much to offer those who believe on its potential as a process of increased

praxis and professional growth. Webber et al. (2003) mentions three strengths of action research. Firstly they indicate that action research is reactive to changes that occur both in people involved and the context in which they occur while research is in progress. Such responsiveness is associated with the iterative nature of action research, which permits issues to be revisited and develops a continuous and increasing understanding. Secondly they contend that action research involves developing innovative ideas, while trying out their possibilities for action. In this way it appears to have a direct influence on professional practice, since the research process is grounded in concrete and 'real' situations. Besides, if we repeat the cycle we have possibility to evaluate the changes to professional practice in systematic fashion. Thirdly these authors argue that action research allows the participation of the broad community involved in the research site. To these strengths, Cohen et al (2003) add the fact of action research going beyond simply problem-solving by means of involving problem-posing. It is motivated by a search to improve and understand the professional practice by transforming and extracting lessons about how to improve it based on the effects of the transformations carried out.

### **3.3.1 Types of action research**

Zubber-Skerritt (1996), working on the framework of Carr and Kemmis (1986), distinguishes between technical, practical and emancipatory action research, as I show in table 3.1.

Technical action research aims at improving the effectiveness of educational or managerial practice and the practitioners are co-opted and depend greatly on the researcher as facilitator. Practical action research, in addition to effectiveness, aims at the practitioner's understanding and professional development. Action research is emancipatory when it seeks to change the system itself or those conditions that impede desired improvement in the system or organisation. It also aims at reaching technical and practical improvement and the participants' better understanding, along with transforming and changing the existing boundaries and conditions. Within this frame I consider the current study as emancipatory since, through it, I provide my fellow lecturers the opportunities to understand the features and potentialities of engaging in critical reflection, the development of critical reflective skills as well as the aptitude to transform their lecturing practice through the adoption of holistic strategies of facilitating learning, such as LSF. As emancipatory action research, I undertake this study as a joint enterprise with my fellow lecturers, were we recognize and take

responsibility for maintaining and transforming our practices (Carr & Kemmis, 1986). Through this study I empower my fellow lecturers to struggle for more democratic forms of education, through promotion of freedom, collaboration, and equal opportunities to learners considering their learning preferences.

Table 3.1: Types of action research and their features (adopted from Zuber-Skerritt, 1996)

<i>Type of action research</i>	<i>Aims</i>	<i>Facilitator's role</i>	<i>Relationship between facilitator and participants</i>
1. Technical	Effectiveness/efficiency of educational practice Professional development	Outside 'expert'	Co-option (of practitioners who depend on facilitator)
2. Practical	As (1) above Practitioner's understanding Transformation of their consciousness	Socratic role, encouraging participation and self-reflection	Cooperation (process consultancy)
3. Emancipatory	As (2) above Practitioner's emancipation from the dictates of tradition, self-deception, coercion Critical enterprise of changing selves Transformation of the organization and the educational system	Process moderator (responsibility shared equally by participants)	Collaboration

McNiff (1988) suggests what she calls *generative and transformational action research*, as depicted in figure 3.1. She expresses the opinion that when one cycle comes to its end there might be the beginning of another cycle.

For McNiff (1988), action research as a system has its own generative capacity. This capacity allows it to be transformed into a more advanced prototype of itself. Moreover, she adds that lecturers as action researchers do not conduct their investigation having in mind a notional perfect end point, since this kind of research, being a living system, always carries the potential to transform into more complex states.

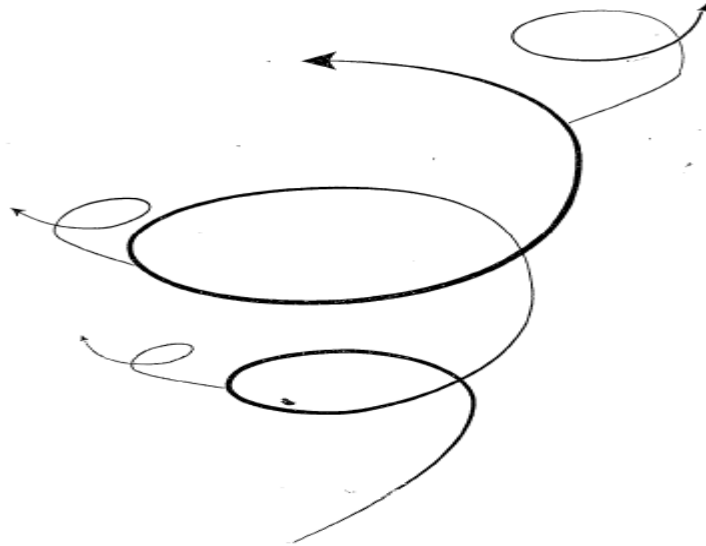


Figure 3.1: Generative transformative action research model (McNiff, 1988)

Du Toit (2010), working on the frameworks of McNiff and Zuber-Skerritt, suggests a visionary action research model, illustrated in figure 3.2. This model is associated with the practitioner's intention to experiment with innovative ideas. In my view this visionary approach does not negate the former ones. Rather, it is complementary and even calls for a balance between all perspectives.

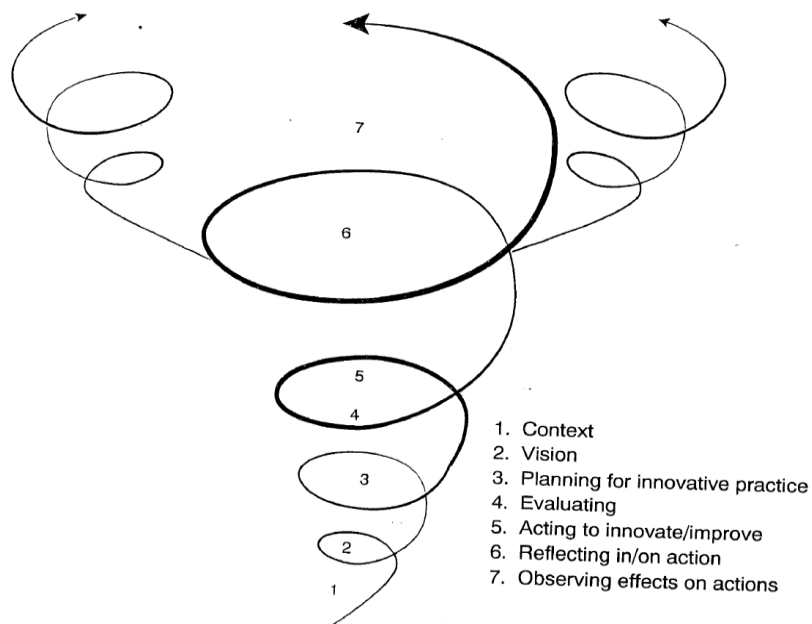


Figure 3.2: Visionary action research model (Du Toit, 2010)

According to Du Toit (2010) the model implies that action research is carried out within a specific context, which might be conducive to a vision for the improvement of the practices occurring within this context. This vision might elicit the occurrence of the next cycles of action research. In my view, herein lies the shortcoming of Du Toit’s visionary model, since it portrays each element (context, vision, planning, evaluating and so forth) as containing in itself an action research cycle. Conversely, I would suggest the introduction of sub-spirals at early phases of the study, since I encourage my fellow lecturers to start their action research cycles earlier than the McNiff and Du Toit models illustrate. Therefore I see my fellow lecturers’ action research as pro-active, while others depict it as re-active, since they begin much later compared to the main action research spiral.

Therefore I suggest a visionary generative action research model, depicted in figure 3.3. According to this model we carry out our action research within the UEM specific context that is characterised by the intention to implement an innovative idea in order to transform our teaching practice.

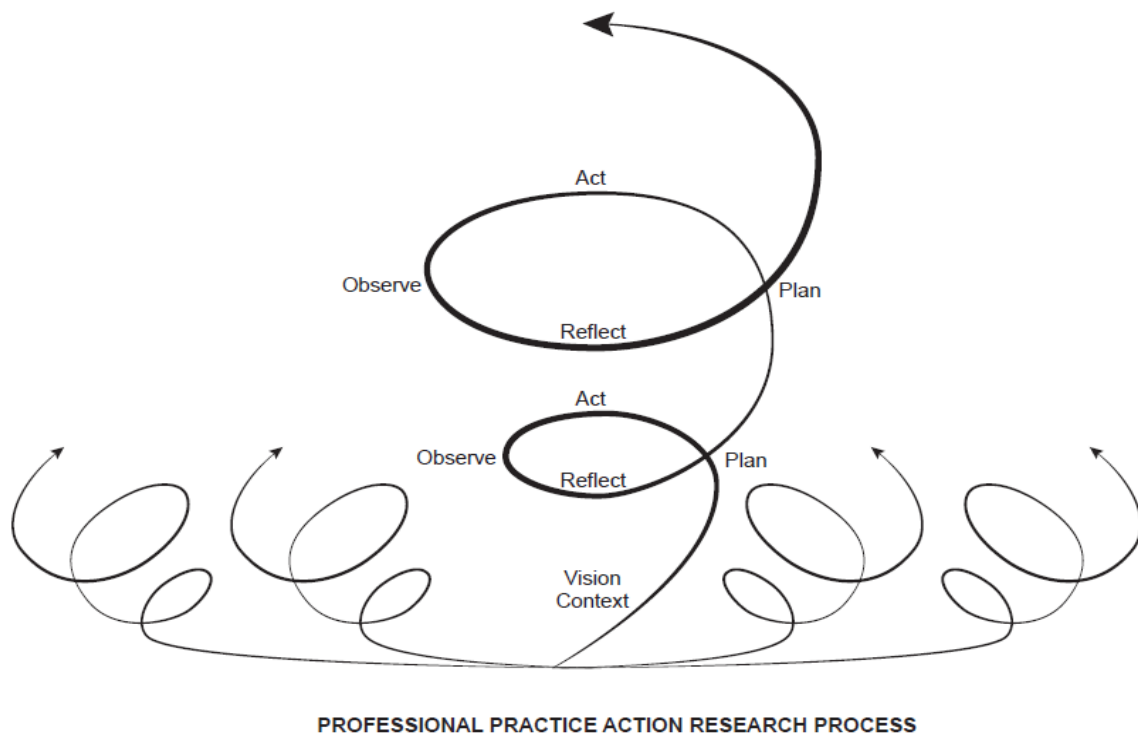


Figure 3.3: Visionary generative action research model



This endeavour is associated with the intention to promote lecturers' professional learning through critical reflection on their practice with the purpose of transforming it from left-brained to whole-brained informed. In this way we are driven by the expectation to be living democratic values of freedom, equality, and collaboration implied on implementation of the principles of LSF. Within this same context there is a visionary idea of promoting excellence in facilitating learning and research.

I foresee that this vision would guide the interaction of the lecturer with his/her working setting while carrying out his/her role as designer of learning programmes and learning mediator. Moreover, it would illuminate him/her in the pursuit of his/her transformative role as promoter of his/her own professional development by means of action research. This transformative process on our meaning schemes was monitored by means of intrapersonal, two-sided mentoring and group critical reflection (in learningshops).

Conducting the research in groups provided space for participants to become aware of unconscious assumptions or false perspectives (Kember, 2000). It offered an opportunity for learningshops as forums where, according to Kemmis and McTaggart (2005), the lecturers and I joined as co-participants to transform practices in which we interact.

Since my visionary generative action research model aims to be pro-active, instead of having my colleagues react to problems I encouraged them to adopt the innovative idea of "implementing LSF within their practices" at the very beginning of the process. In this way, I mentored each lecturer to initiate his/her own action research spiral. Hence I accommodated the idea that action research is generative and enables the group of lecturers to address simultaneously diverse initiatives, while keeping focus on the main one (McNiff, 1988).

I find this study framed by constructivist theory. In practice within this action research study I notice the emergence of a multi-layered constructivism. The inner layer comprises the constructivist students' learning as facilitated by my fellow lecturers participating in the learningshops (LPLs). The middle layer is the LPL's constructive professional learning, which occurs mainly at the learningshops, mentoring sessions and within their action research processes. I describe and analysis this layer of constructivism as encapsulated within the case studies of individual LPLs' action research. The outer layer entails my

constructivist learning about how to facilitate learningshops and to mentor fellow lecturers. In essence this constructivist learning appears to embrace the same understandings as the LPLs' since they are guided by the implementation of LSF within the factice of facilitating learning and mentoring it by means of action research.

As the reader might observe, in this study I make use of a combination of action research and case studies. Scholars indicate that, due its very nature, action research lends itself for mixed-methods. Accordingly McNiff (1988) and Zubber-Skerritt (1992) among others, show their adhesion to this idea by including QUAN and QUAL techniques within their research enterprises, books and articles. Yin (2009) indicates that, differently from what many researches convey, case studies are not carried out within qualitative research only. He goes on saying that some case studies go beyond qualitative research, employing a mixture of qualitative and quantitative evidence. Yin advances four applications of case studies, namely to explain the effects of certain interventions; to describe the intervention and the context in which it has occurred; to illustrate and to explore the situation within which the intervention does not have only one and clear result. On the other hand, I have found that case studies have been for a while adopted in combination with action research with apparently good results (see Beaty & Cousin, 2003; Brown & Macatangay, 2002; Dymond, Renzaglia, Rosenstein, Chun, Banks, Niswander & Gilson, 2006; McNiff, 1988). Against this setting, I can advance at least two reasons to combine action research and case studies within this study. The first would be the very nature of the mixed-methods approach, which seeks to overlap the strengths of different methods or approaches. The second, which is most practical reason, is that within the study I use case studies as evidence of the different employments made of action research by lecturers who have been mentored by me. In this study, to a large extent the case studies serve as the evidence of the extent to which I managed to have my fellow lecturers carrying out their action research within this experimental professional development intervention that I conceived and organised. Throughout the cases that I present one might observe lengthy descriptions and illustrations with the aim to show the idiosyncratic variety of innovative ideas, methods, achievements, and even malfunctioning faced by each lecture participating in the venture. Therefore, before I explain the effects of the interventions, I describe, illustrate, and explore (Yin, 2009). Practical examples seem to work best, and, given that action research is eminently practical,

it makes sense to use case studies to illustrate how my fellow colleagues progressed to conducting their own action enquires.

### **3.3.2 Matching action research and LSF**

The match between LSF and action research has been tentatively established by Du Toit (2008). I stress that it was tentative because in certain aspects he appeared to fall short of the establishment of such a relationship as I will demonstrate in the next paragraphs. Action research is typically represented by a spiral of four (4) steps, namely planning, action, observation and reflection. I agree with Du Toit when he outlines the general idea that these steps are related to the quadrants of the whole brain model. However, I would go beyond his stating that each of these steps is particularly linked to certain brain quadrants and weakly linked to others. This is where Du Toit fails when he intends to show that in the planning he provided handouts (A quadrant), gave learners space to apply theory (B), formed co-operative learning groups (C), and allowed learners to play games and songs (D). All of these activities are framed within the action step. Therefore, working on the framework of Du Toit, I find the match that follows between action research and LSF.

Planning entails defining goals, selecting the research area and determining the methods, steps and procedures to follow throughout the process. Planning appears to be strongly attached to the left hemisphere. Therefore, the component elements of this step demonstrate the strong attachment to the A and B quadrants. Recall that the A quadrant is characterised by logical and analytical thinking. These processes are required when the practitioner is going to determine, for instance, which goal is super-ordinate, what kind of procedure is most likely to be conducive to a certain result, and so forth. On the other hand, the B quadrant individual presents a strong preference for organised and sequential modes of thinking, which are involved in determining the steps of the research process.

Acting appears to be connected to the right hemisphere. It involves intervening, namely implementing the innovative idea and collecting data. In the context of education acting requires interaction with other people. This implies engagement of the C quadrant, which has a strong preference for involvement and sharing experiences with others and hands-on activities (De Boer et al., 2012). However, I find the D quadrant involved here. In this regard

I agree with Du Toit (2008) when he says that experimenting with innovative ideas involves the D quadrant. But I also find holistic thinking and synthesising involved here.

Observing entails the process of documenting the intervention results by using methods and techniques the practitioner finds to be the appropriate. In my opinion this step shows a strong link with three quadrants, namely the A, C and D quadrant. A quadrant learners expect precise and to the point information, proof of validity, facts and data to be logically analysed. These elements appear to be the main targets of the process of observing. As Du Toit (2008) explains, observation takes place by means of collecting and organising visual material, analysing the output learning material (D quadrant), and getting feedback from learners and other participants (C quadrant).

Reflecting appears to aggregate efforts to analyse the data collected, to examine the course of action, to deal with the changes that have occurred as result of the action. It is strongly linked with the C quadrant since the practitioner has to analyse feedback of those others involved in the process (Du Toit, 2008). It has to do with the B quadrant as well, since it is about analysing the findings in the light of relevant literature and theories.

### **3.4 Mixed methods approach**

According to Teddlie and Tashakkori (2003), until the mid 1990s, almost no scholar talked about something like mixed methods, since what predominated was the argument that it was impossible to put together quantitative and qualitative methods. This paradigm war period levelled out with the emergence of mixed methods research as alternative.

Creswell et al. (2003) define mixed method study as involving

*the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research (2003:212).*

These authors go on stating that the main advantage of mixed methods is the possibility to answer to confirmatory and exploratory questions, thus verifying and generating theory in the same study. Corroborating, Johnson and Turner (2003) stress that, considering that all methods have their limitations and potentialities, well-conducted mixed methods provide

complementary strengths and non-overlapping weaknesses. According to them, this principle is followed for reasons such as to obtain convergence or corroboration of findings, to eliminate or minimise key plausible alternative explanations for conclusions drawn from the research data, and to elucidate the divergent aspects of a phenomenon.

Since mixed methods imply different combinations between the two methods, scholars have proposed typologies, which among other advantages, help in the establishment of common language and provide a clear variety of paths that may be chosen to accomplish the studies (Teddlie & Tashakkori, 2003). Therefore Creswell et al. (2003) suggest a typology composed of six varieties of research design.

In this study I present some research questions that call for qualitative research methods. Other questions require quantitative research methods, while one additional set of questions requires both qualitative and quantitative research methods. For this reason, following Creswell et al. (2003), and resulting from the need to make sense of the qualitative data concerning lecturers reflection as embedded within the quantitative brain profile data, the qualitative method is the dominant one, while less emphasis is given to the quantitative method. Therefore I adopt quantitative strategies as supplemental in order to identify the occurrence of some practices such as LSF and professional development activities to provide baseline information to the qualitative part of the study.

Concerning integration, I find that, for one question, it occurs mainly within the interpretation phase, while for others it takes place in the data analysis phase. Hence, to answer the research question *what is the relationship between lecturers' brain dominance profiles and their styles of reflection?*, I employed the HBDI, audio- and video-recording. The HBDI analysed at the Herrmann International Group, provided the lecturers' brain profiles. Then, during the interpretation, I made sense of the lecturers' patterns of reflection (audio- and video-recording) considering the lecturer's brain profile. In this sense I would consider this approach as a kind of concurrent nested design (Creswell et al., 2003).

In order to answer the research question, *To what extent is reflection integrated within existing PD interventions in the Mozambican context of Higher Education?* I employed concurrent triangulation design (Creswell et al., 2003). I carried out semi-structured

interviews and administered questionnaires to lecturers, as I explain in the next paragraphs. Therefore, through interviews, I explored in depth the issues surrounding professional development in Mozambique, collecting opinions from senior lecturers and lecturers occupying management positions. Through questionnaires I sought to explore in depth the occurrence of professional development interventions and of factors associated with it. Then I integrated the results during the interpretation phase.

To answer the research question, *How can I (we) encourage critical reflection in HEI?* I facilitated learningshops and mentoring sessions as an experimental professional development activity and opportunity to collect qualitative data. I collected such data through video-recording, audio-recording and photographing. As supporting material I used data from semi-structured interviews.

### 3.5 Research sites

The sites I approached to collect data are located along the southern, centre and northern provinces of Mozambique. As I summarise on table 3.2, I have gone through eight public HEIs. I left out the private ones due to sharing of many lecturers, which would have resulted in doubling efforts.

Table 3.2: HEIs student and academic staff population

Institution	Student population			Academic staff		
	Male	Female	Total	Female	Male	Total
<b>ACIPOL</b>	417	105	522	100	12	112
<b>ISPG</b>	167	105	272	54	8	62
<b>ISPM</b>	236	84	320	48	18	66
<b>ISPT</b>	444	271	715	31	14	55
<b>ISRI</b>	639	419	1.058	68	14	82
<b>UEM</b>	18262	8988	27250	1222	420	1642
<b>UP</b>	24010	15369	39379	501	120	621

### 3.6 Sampling

Working with the entire lecturer population of Mozambique was virtually impossible and would require employing massive resources to gather roughly the same information that can be obtained with a representative number of persons. Sampling is the method used to select a given number of persons from a population (Mertens, 1998).

*[Action researchers] judge their work not in terms of its generalizability or replicability ... but in terms of whether they can show how they are living in the direction of their educational and social values, using those values as their living standards of judgment (McNiff & Whitehead, 2006:27).*

Working with the perspectives of McNiff and Whitehead (2006) and Mertens (1998) in mind, I would argue that although with the current study I do not intend to generate transferable knowledge, it is important that I make clear the sampling strategy and its associated logic. I therefore explain the inclusion of the quantitative part of this study. Since I conceived it to answer parts of two research questions, I expected not only to complement the data gathered through qualitative methods, but also to employ it as baseline information, concerning, for instance the lecturers' involvement in professional development activities, and their acquaintance with and employment of LSF principles. I divided my sample in three groups. One is composed of senior lecturers and those lecturers who occupy management positions within the university or faculties. The second entails lecturers whom I invited to fill in the questionnaires. The last group involves lecturers who participated in the learningshops (LPLs) and carried out the action research with me.

### **3.6.1 Senior lecturers and lecturers occupying management positions**

I employed criterion sampling, according to which I, as a researcher, must set up a criterion and then identify cases that meet that criterion (Mertens, 1998). The criterion was that the respondents should be academic staff in management positions or senior lecturers within the university and faculties involved in the study. Therefore, for those in management positions I invited the pedagogic and scientific directorate as well as faculty deans, institute directors, heads of department, course directors and coordinators, as well as heads of academic sections. Those were expected to provide, through semi-structured interviews, information regarding their views of the state of art within professional development, how it could be fostered, and the extent to which reflection is/can be accommodated within the institution, among others.

### **3.6.2 Lecturers for questionnaires**

In order to select lecturers to answer the questionnaires, I randomly selected a number. In doing so I tried to assure that lecturers from different categories, ages and gender would have the opportunity to take part in the study. Therefore, to a certain extent we can consider

this as being a combination of a random and a proportionally stratified sample (Mertens, 1998; Kemper, Stringfield & Teddlie, 2003). Although not rigidly employed, there was a separation of the population elements into groups, in the sense that I searched to reach different categories of respondents ranging from junior lecturer to senior professor as well as a balance between male and female respondents.

### **3.6.3 Lecturers participating in learningshops**

For the learningshops I employed convenience sampling since I drew elements from a group that was easily accessible (Mertens, 1998; Kemper et al., 2003). Therefore I invited a number of lecturers, mainly from the faculties of Education, Arts, Agronomy and Sciences, that are located on the main university campus. Firstly I invited lecturers who had recently attended courses namely 'Teaching Methods' and 'Student Assessment' offered by the CAD. Then I extended the invitation to other lecturers and lecturers who are the focal points for the CAD within their faculties and schools. This last group included lecturers from the faculties of Law, Veterinary Science, Agronomy and Architecture, which are not on main campus. As I explain in the introductory chapter, I came to position myself as mentor and facilitator of this venture since I felt the need of this kind of intervention and I collaborated with the CAD. Therefore the assumption of this role is a function of my felt need to contribute to the CAD to expand the range of interventions it has offered so far, which are mainly induction programmes.

It is customary to expect that the position occupied by the researcher might influence the selection of participants. Reflecting on my situation I conclude that my position as lecturer did not influence the selection of participants. Firstly because, from the outset, I thought of having lecturers of different categories, academic degrees, and gender. Secondly, because I widely invited lecturers to attend the learningshops. And those who felt that they had the interest, time, motivation, etc. replied positively. Those who did identify themselves with the approach, or thought that the process was too long, time consuming etc. decided to withdraw from participating after few sessions. In this way I the selection occurred naturally according to the criteria I have just mentioned.



### 3.7 Case studies

As part of the study I included case studies, which are a way of providing coverage for the action research processes carried out by the lecturers who are participants in the study.

*a case study is a formal collection of evidence presented as an interpretive position of a unique case, and includes discussion of the data collected during fieldwork and written up at the culmination of the cycle of action (McKernan, 1996:74).*

Accordingly, it is argued that case studies seek to provide in-depth, holistic, and detailed account of a phenomenon or event observed within its natural environment (Ghesquiere, Maes, & Vandenberghe, 2004; Yin, 2009). Yin (2009) adds that we use case studies when we are stimulated by the desire to answer to *how* or *why* questions in order to understand meaningful and contemporary events that feature certain phenomena over which we have little or no control. McKernan (1996) expands this view saying that

*Case study ... is idiosyncratic and specific; it is process- rather than product-orientated; and it is rich in description, interpretation, explanation and narrative, working more for understanding than for rigorous scientific measurement, prediction and control of setting, respondents, actions, and so on (1996:77).*

The case studies I present evolve around the in-depth study of a series of linked cases over a defined period of time. As the facilitator of the professional learning experience and the main researcher, I tried to locate the story of implementation of LSF and action research in a specific setting, which is the UEM – Mozambique, and the factors influencing the situation. The situation became the focus of attention (Hitchcock & Hughes, 1995).

Following Hitchcock and Hughes (1995) I would argue that the preference for case studies within this study is associated both with the fact that I had little control over events (lecturers' efforts of facilitating learning) and that I aspired to provide alternative ways of facilitating learning and monitoring of the lecturing practice to the lecturers.

There are different categories of case study, depending on the purpose and focus. Therefore Stake (2005) distinguishes between *intrinsic*, *instrumental* and *collective* case study. The researcher undertakes *intrinsic case study* when he/she desires improved understanding of a particular case. Rather than being guided by the fact that it represents other cases or it illustrates a particular trait or problem, the steering force is the interest in

the case for itself. When a particular case is under scrutiny primarily to gain insight into an issue or to redraw a generalisation, it might be considered an instrumental case study. The case is of secondary interest, it plays a supportive role, and it facilitates our understanding of something else. Collective case study is considered when there is even less interest in one particular case. In my view the designation matches the cases being followed within this study, since I present a number of cases that are studied jointly in order to investigate a phenomenon or general condition (LSF implementation, through action research). I chose individual cases because I believed they would lead to better understanding, and perhaps better theorising about a still larger collection of cases.

### **3.8 Data collection techniques**

The focus of my action research is on encouraging critical reflection for professional development of academic staff. Aligned to that, the sub-question embedded in the core of the study is *How can I (we) encourage critical reflection in HEIs?* For McNiff and Whitehead (2006) action research questions are informed by intent of learning and are constantly associated with the idea of improvement. Accordingly, and following these authors, I assert that underlying the above sub-question is a deeper question, namely how do I learn to help my fellow lecturers to learn to reflect on their practice as part of their professional development? Hence, in the pursuit of the answer to this question, I involved my fellow lecturers in my learning. Since it is a synchronous process, they involved their students in their learning. Their students' learning provided evidence of their learning as associated with my efforts to promote such professional development. To a certain extent their students' learning evidenced and validated my claims to have gained knowledge.

My decision about which methods and techniques to employ was guided by the need to make them consistent with the assumptions, objectives and research questions that guide this study. Accordingly, I recall that I regarded the university as a setting that is characterised by a dialectical relationship between active subjects, including others and me. Therefore the lecturers' professional development within such a situation should be guided by a relational approach, where lecturers-as-learners engage in discourse to co-construct knowledge for themselves in the context of their practice by means of confronting or applying new knowledge. Such a process of learning should be situated within a practice

and be context-driven. Guided by these tenets I sought a methodology that would respond to my queries.

In the previous pages, I explained that the issues that I address through this study pertain to my practice and to the practices of my fellow lecturers. Therefore, finding ways to solve those concerns implied taking action that rigorously implied our involvement in exploring our practices and trying to explore how to improve our interactions by transforming the acts that constitute us (Kemmis & McTaggart, 2005). Hence, action research emerged as the most appropriate approach to address the study. Apart of the features of action research to which I have explained my study to adhere, I would advance three more reasons that emerged to sustain such a conclusion. Action research has the potential to allow us to reflect critically on our emerging understanding of our constructivist practice of facilitating learning. First, through researching our practice, me and my fellow lecturers, we reaffirm the value of our professional autonomy, pursuing to become more than technicians who rely on other practitioners' initiatives (Kraft, 2002). Hence, I find action research embodying the need for an ongoing, continuous, cyclical process of coming to know and of improving practice, and thus of integrating theory and practice (Zuber-Skerritt, 1992:89). Second, action research acknowledges no pre-eminence of theory over practice or vice-versa. Rather, theory and practice are found informing each other through an iterative, cyclical and reflexive process in such a way that leads to both enhancement of theory and practice (Mann, 2003:83). For me, this implies that engaging in praxis, within this study, meant ensuring that the me and my fellow lecturers were acting wisely and prudently on basis of our understanding of the contexts in which we are practice and commitment to transform such contexts (Carr & Kemmis, 1986).

The other reason sustaining my choice for action research is its holistic character. In the previous pages I have explained that action research is holistic process of engaging in scholarly reflection. Therefore, in this study it involves the lecturer as a whole person being committed to logically analyse facts pertaining to our practices and contexts (A quadrant), to plan, organize and act methodically in order to implement our ideas (B quadrant), to engage in interpersonal relationships and being emotionally involved (C); and to experiment innovative ideas, integrating new knowledge and conceptualizing (D).

Action research allows an unlimited variety of re-active and non-reactive data-gathering methods and techniques (McKernan, 1996), which range from traditional techniques to more unconventional ones such as camps, workshops or collective trips (Babbie & Mouton, 2001). McNiff and Whitehead (2006) mention sources of data or evidence that include among others exam results, memos, email and record book. These must be adapted to each specific situation including time constraints, human and material resources, without losing sight of research fundamental components such as validity and reliability.

Considering the research questions that guide my study I selected and adopted a number of data collection techniques, including semi-structured interviews, questionnaires, audio-recording, video-recording and HBDI, among others. Table 3.3 shows how I match those data collection techniques to the research questions.

Table 3.3: Matching research questions and data collection techniques

Research questions	Data collection techniques					
	Semi-structured interview	Audio- recording	Visdeo-recording	Questionnaires	Personal journal	HBDI
To what extent is reflection integrated within existing PD interventions in the Mozambican context of Higher Education?	X			X		
How can I (we) encourage critical reflection in HEIs?	X	X	X	X	X	
What is the relationship between lecturers' brain dominance profiles and their styles of reflection?		X	X			X
How can I (we) use the principles and practices of LSF to design a model of Learning Styles Flexible Reflection (LSFR)?		X	X	X		X
<b>TOTAL</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>		<b>4</b>

In this study I have adopted a mixed-method approach. Hence, I have combined data from semi-structured interviews and questionnaire on innovative practice to answer the research question *To what extent is reflection integrated within existing PD interventions in the Mozambican context of Higher Education?* This part of the study allowed me to gather baseline information about the context of professional development in Mozambican HE. The remaining questions were answered by means of the action research per se. For the

research question *How can I (we) encourage critical reflection in HEIs?* I partly use data gathered by semi-structured interviews and questionnaires on innovative practice. Then while implementing the action research data was gathered by means of video-recording and photographing learningshops, mentoring sessions and learning opportunities. Besides these, I employed audio-recording for mentoring sessions. In order to document certain critical incidents, lessons learned, and reflections I employed a personal journal. The lecturers participating in the learningshops (LPLs) employed video-recording and photographing as the main techniques to collect data within their action research processes.

In the next paragraphs I explain each of the data collection techniques and discuss its strengths and weaknesses, along with indicating the measures I adopted to minimise the instruments limitations.

### **3.8.1 Semi-structured interviews**

Interviews represent a move towards viewing knowledge acquisition as generated through conversations (Kvale, 1996). Interviews aim to see the world through the eyes of the participant and to obtain rich descriptive data that helps in understanding the participant's construction of knowledge (Nieuwenhuis, 2007).

As framed by constructivism, interviews imply that both interviewer and interviewees are actively engaged in a process of mutual constructing meaning (Silverman, 2011). For Cohen et al. (2003) it is a process that entails the interviewer displaying open-mindedness for new ideas, rather than relying on his/her predetermined schemes of interpretation. To complete its mutual nature, these authors indicate that as result or correlate of being interviewed, the interviewee may gain new understanding and awareness in a way that he/she may come to operate transformations within his/her accounts about the topic being discussed. Therefore, Kvale (1996) contends that interviews allow the knowledge to be constructed 'inter the views' of the interviewer and the interviewee with alternation between the knower and the known.

I employed semi-structured interviews (see appendix C) to gather respondents' opinions, feelings concerning the opportunities available for lecturers to engage in professional development and reflection. The interviews also allowed me to collect the respondents'

suggestions concerning how professional development and reflection can be optimized in the context of Mozambican HE. For this purpose I invited the Pedagogic and Scientific Directorate as well as faculty deans, heads of department, course directors and coordinators, as well as heads of academic sections to provide information regarding their views on professional development, critical reflection and LSF. My main purpose was to collect their knowledge, preferences, attitudes and beliefs concerning professional development in Mozambique.

Despite their widespread usage interviews are not free from problems. They have been indicated to embody disadvantages that include the potential for subjectivity and bias, their high cost and time-consuming nature, and lack of anonymity (Cohen et al., 2003; McMillan & Schumacher, 2006). To minimise these potential pitfalls, following McMillan and Schumacher (2006), I engaged in efforts to show the respondents that I was a neutral medium through which information should be exchanged. For this purpose I never assumed to have a predefined idea concerning the issues under discussion, despite showing my awareness of these issues. Moreover, I made an effort to eliminate power imbalances by identifying myself as lecturer.

I experienced two main advantages of interviews. On the one hand, and following McMillan and Schumacher (2006), I find interviews to be flexible and adaptable, since they can be used with many different problems and types of persons. They allow for noting non-verbal and verbal behaviour. On the other hand, interviews have a higher response rate compared, for instance, to questionnaires since they allow respondents' involvement and, hence, motivation (Cohen et al., 2003; McMillan & Schumacher, 2006).

I employed semi-structured interviews to confront or corroborate data emerging from questionnaires and, to a lesser extent, to support or confront ideas generated in learningshops. Upon participant acceptance I audio-recorded interviews, since this kind of data gathering is not easily retrieved and audio-recording captures all nuances of the conversation (McNiff, 1988). Though, during and after the interview had been conducted, I took down written notes of the interview. It helped me in the recording of visual information, the social atmosphere and personal interaction; moreover, it allowed me to filter the data in order to retain what was essential (Kvale, 1996).

### 3.8.2 Audio- and video-recording

Borrowing from experiences with Participatory Action Research practices (Babbie & Mouton, 2001) I worked with a group of lecturers through a series of learningshops. These followed the sequence depicted in figure 3.4 below. They consisted of participants meeting periodically during assembly (Babbie & Mouton, 2001) when we shared our thoughts and findings from the daily lecturing practice.

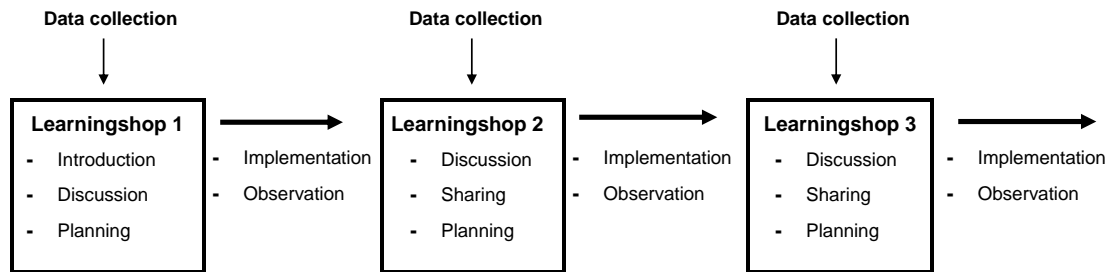


Figure 3.4: Sequence of learningshops as data collection opportunities

Learningshops fulfil the conditions of participation and collaboration, advanced by Carr and Kemmis (1986) as characteristics of action research; and, according to these authors, they create the following conditions to promote separate levels of reflection:

- Lecturers' substantive reflection on LSF.
- Lecturers' self-reflection on the processes by which they promote LSF and engage in their action research.
- My reflection on the practices involved in taking them to take part in this research venture.
- My reflection on these practices as educational practices within the broader framework of Professional Development.
- My self-reflection on my own processes of reflection and enquiry.

In the beginning I facilitated a learningshop which entailed managing a set of activities I explain extensively in chapter 4. In the learningshop I found dialogue to play a key role as long as I perceived participation in terms of "continuous dialogue" and considered it as reflective and empowering (Babbie & Mouton, 2001). Like focus groups, the learningshops combine oral data with observation as data gathering technique. Therefore, with the lecturers' permission and informed consent, these meetings were photographed and video-

recorded, since they are sources of objective knowledge of facts and help to capture the group discussion and non-verbal elements (Babbie & Mouton, 2001; Nieuwenhuis, 2007).

After the lecturers had started with their action research processes, I engaged in facilitating peer mentoring sessions, involving me and one of the lecturers at a time. These sessions were an opportunity for us to analyse the application of the LSF principles in practical contexts, for me to helping them to analyse and reflect on what happened and to compare this to what was intended, for both of us to learn from the experience since learning can be a uniting and mutually beneficial process (Klasen & Clutterbuck, 2002). Beyond that the mentoring sessions were as well opportunities for me to collect data. Therefore, upon their consent, through mostly audio-recording and, sometimes, video-recording, I could collect data on LPLs reflections. I used such reflections for comparison with the HBDI results in the pursuit of LSFR.

### **3.8.2.1 Video-recording**

Video has been widely regarded as a useful resource for training, education and for research purposes. Heath, Luff and Svensson (2007) contend that researchers are increasingly conscious that bodily behaviour and gestures require their analytic attention, a part of offering ample possibilities to enrich the interpretation and understanding of interactions that occur within a single lecture. Therefore, video is increasingly used in order to assist the researcher to present, more than words, visual narratives that show the transformations one is carrying out within his/her practice (McNiff & Whitehead, 2006). For these authors, video can be especially powerful when we come to generate evidence to support the practitioner claim to have produced or gained certain knowledge. In the light of this, Heath et al. go further, saying that

*there is a growing body of video-based field research that draws on ethnomethodology and conversation analysis to address the ways in which organisational activities are accomplished through the interplay of talk, the visual and material, including the use of tools and technologies (2007:110).*

The use of video to collect data presents a number of advantages. Heath et al. (2007) mention the following advantages: Firstly, it is a reliable technology that allows recording activities as they naturally take place in the classroom. Secondly, it provides records that can be subject to detailed scrutiny, since they can be repeatedly observed and analysed.



Thirdly, video allows access to details of classroom behaviour and interaction that are not available when one uses more traditional data collection techniques. Fourthly, video captures the experience as it occurs. It provides opportunities to record aspects of social practices in real-time, with immense possibilities to play back in order to reframe and refocus the activities of the participants. To these advantages I would add a number of others as advanced by Cohen et al., when they say the following:

*Comprehensive audio-visual recording can overcome the partialness of the observer's view of a single event and can overcome the tendency towards only recording the frequently occurring events. Audio-visual data collection has the capacity for completeness of analysis and comprehensiveness of material, reducing both the dependence on prior interpretations by the researcher, and the possibility again of only recording events which happen frequently. Of course, one has to be cautious here, for installing video cameras might bring the problem of reactivity (2003:313).*

The problems that stem from using video are mainly associated with the need to ensure confidentiality, anonymity and informed consent, taking into account that video recording imply a certain loss of privacy (Donaldsen, 2001). Additional problems stem from the obtrusive nature of the video camera (Cohen et al., 2003). Scholars indicate the problem of reactivity that may be caused by video recording, as it happens with taking photographs (Donaldsen, 2001; Cohen et al., 2003). Concerning the ethical issues that appear problematic in using video recording, in this study I gave full information to participants about its nature, objectives, procedures, and benefits. I made it clear about how anonymity and confidentiality are difficult to maintain when taking photographs. In order to minimise the obtrusive nature of video recording as well as its reactive effect, I agreed with the lecturers that the students or one assistant lecturer would operate the video camera while recording the learning opportunity.

Within this study I employed video-recording not only as evidence, but especially as a tool for collecting data for further analysis and for lecturers' reflection on their transformative practice. Information I gathered through these video-recorded learningshop sessions was matched to lecturers' brain profiles in order to find the patterns of reflection typical for each brain quadrant.

Lecturers participating in the learningshops (LPL) video-recorded their learning opportunities were as well. These video-recorded learning opportunities were later analysed by lecturers

within their action research in order to reflect, for instance, on the extent to which one had succeeded in implementing LSF, going beyond his/her comfort zone while facilitating learning, and the students' receptivity regarding a certain strategy of facilitating learning. The lecturers' reflections in the peer mentoring sessions about these learning opportunities were registered mostly by means of audio-recording and sometimes video-recording. In this way I collected ample data regarding lecturers' reflections on their innovative practice.

### **3.8.2.2 Audio-recording**

Audio-recording shares many traits of video-recording, except for the advantages presented by the images in video. According to McNiff, Lomax and Whitehead (1996), audio-recording might be the most popular data collection device for action researchers. Apart from being used to evidence the occurrence of an event and as the focus for deconstructing personal memories, McNiff et al. find in audio-recording the advantage of being a kind of talking diary or as a way to catch discussions about my research or, in my case, about lecturers' reflections.

### **3.8.2.3 Photographs**

The use of photography as a method of data collection is rooted in the tradition of ethnographic observation. It was expanded for surveillance and categorisation, where the images are seen as objective, unbiased evidence that can be used in legal proceedings (Close, 2007). Nowadays photographs are extensively used in fields such as sociology, psychology and education. In such studies

*visual documentation becomes a part of research triangulation, confirming theories using different forms of data. In these instances, the photographs argue that visual traces of the world adequately describe the phenomenon under question (Harper, 2005:748).*

Despite their recent and still scarce use for research, photographs pattern a number of strengths when employed as a data collection technique. Firstly, it provides images, which are considered to be objective and unbiased evidence (Close, 2007; Ray & Smith, 2012). Moreover, photographs enable the researcher collect data that can be less restrictive and, sometimes, more accurate than other methods (e.g. interviews, diaries, surveys) and the possibility to compare educational phenomena across time (Ray & Smith, 2012).

The main problems faced when the researcher employs photography as data collection technique are associated with the need to ensure confidentiality, anonymity and informed consent. These are the same problems that are associated with video recording, although photographs are also used in reports, which implies an additional problem with the participants' confidentiality and anonymity. In order to address these problems I relied in the same procedures that I explained in the section on video recording. Therefore I gave full information to participants about the study's nature, objectives, procedures and benefits. I made it clear about how anonymity and confidentiality are difficult to maintain when taking photographs. As a result certain students did not accept to have their pictures included in the report, while others showed their acceptance by means of written consent that included the subjected picture. To minimise the obtrusive nature of photography as data gathering method as well as its reactive effective, I assured that the lecturer or an assistant, or the students themselves could take the photographs.

In this study, I used and stimulated lecturers to use photographs as evidence that would help them to interpret and understand the activities that had occurred during the learning opportunities they facilitated. Besides, the photographs were used to examine how/what students' body language seeks to convey. Borrowing from Donaldsen (2001) I find photographs to be used to clarify findings related to lecturers' attitudes and perceptions of the learning environment.

Basically I asked the lecturers to take the images themselves, since I did not attend most of the lectures in order to avoid disrupting the normal class environment. Therefore the photographs were taken by the lecturers themselves or an assistant lecturer (where it applied) or by a student. Leaving the task to them is sustained by the belief that the meaning of a photograph is not inherent to the image itself but is a negotiable property that lies within a conceptual triangle formed by the subject, the filmmaker and the audience (Banks, as quoted by Close, 2007).

Concerns about ethics in visual research most often focus on what will happen to the image after it has been produced, rather than on the involvement in the research process as a whole (Close, 2007). Therefore the students gave their informed consent on the basis that they were assured the image would not be used for more than this research purpose.

### **3.8.3 Questionnaire on innovative practice**

I developed the questionnaire on innovative practice (see appendix A) to collect data concerning the respondents biographical information, their professional development and to ascertain the extent to which they are acquainted and engaged with holistic learning strategies. I developed questions about professional development based on my review of literature on this topic. The questions about holistic ways of facilitating learning were inspired to the HBDI. Therefore, most of these questions address the extent to which the respondent accommodates the learners' preferences or challenges his/her avoidances. Mainly this questionnaire aims to get baseline information. A baseline study seeks to identify the characteristics of an educational context before the introduction of an innovation that is meant to produce change (Wall & Horák, 2007). For the purpose of this study I consider the baseline as the description of the context in which the innovation is taking place. Furthermore, the administration of the questionnaire started after the beginning of the innovation. Thus, following Wall and Horák (2007), although the results of this baseline study might help policy-makers, HEIs' managers and unities for professional development to think and shape the Mozambican HEIs, they cannot be transferred to other context since this was not my intention. Still, I acknowledge that those interested, might extract lessons from this experience.

Since I intended to collect survey information I saw questionnaire as useful. I was further encouraged by its advantages, which include its easy administration, provision of direct responses of both factual and attitudinal information, and the facilitation of the tabulation of responses (McKernan, 1996; Cohen et al., 2003). Other advantages are greater honesty linked to anonymity and its economical nature when compared to interview (Cohen et al., 2003; McMillan & Schumacher, 2006).

The disadvantages of questionnaires include too low a return rate and their difficult to apply to people of limited literacy or blind people; frequently questionnaires are filled in hurriedly (Cohen et al., 2003; McMillan & Schumacher, 2006). Concerning their return rate it appears that little can be done to surpass it. For instance, in this study I distributed nearly 1 000 questionnaires and I got 447 back. The problem of literacy was not an issue in this study, which is directed at higher education lecturers. Concerning speed of completion, I allowed

the lecturers to fill in the questionnaires at their most convenient time and period of the day, which might have had a direct impact on the return rate.

McKernan (1996) distinguishes mail (postal) questionnaires, group administered questionnaires and personal contact questionnaires. Cohen et al. (2003) mention structured, semi-structured and unstructured questionnaires. For my study I used structured questionnaires.

During the conception of this questionnaire I followed thoroughly the principles Johnson and Turner (2003) consider fundamental in order to have a reliable and valid instrument. According to Johnson and Turner such principles include

- Making sure that the questionnaire items match the research objectives.
- Understanding the research participants.
- Using natural and familiar language.
- Writing items that are simple, clear and precise.
- Avoiding the use of leading or loaded questions.
- Avoiding double-barrelled questions.
- Avoiding double negatives.
- Determining whether an open-ended or a closed-ended question is needed.
- Using mutually exclusive and exhaustive response categories for closed-ended questions.
- Considering the different types of response category available for closed-ended questionnaire items.
- Using multiple test items to measure abstract constructs.
- Developing a questionnaire that is easy for participants to use.
- Pilot-testing the questionnaire.

Looking at the principles suggested by Johnson and Turner (2003), I find all of them observed during the construction of my questionnaire on innovative practice. Therefore, and starting from the end, I would say that the English version of the questionnaire was piloted to six lecturers (postgraduate students at the University of Pretoria) who provided useful feedback concerning diverse aspects. One draft and final version in Portuguese was piloted as well to a total of 23 lecturers, mainly from private universities, which were not included in

the study. Piloting the questionnaire allowed me to respond to most of the principles advanced by Johnson and Turner. For instance, the feedback from piloting the questionnaire helped me to employ natural and respondent familiar language to present the questionnaire items in precise, clear and simple terms and to avoid double-barrelled questions, double negatives, leading or loaded questions. The length of the questionnaire and the fact that questions concerning the innovative practice were conceived based on the HBDI items, determined my decision to keep the whole questionnaire closed-ended. As a result both the process of piloting and applying the questionnaire showed that filling in the whole questionnaire would take between 8 and 10 minutes, which seems to be acceptable. I administered this structured self-administered questionnaire to lecturers within seven HEIs spread across the south-centre-northern regions of the country, allowing triangulation with interview data. The questionnaire was composed of questions concerned with PD in general, relating to the acquaintance with reflective tools and the adoption of LSF within the lecturing practice. Therefore it was divided into three sections, including biographical information, Professional Development in Higher Education and ways of facilitating learning.

Apart from piloting the instrument in order to guarantee validity and/or reliability, I adopted certain measures to minimise the questionnaire disadvantages mentioned by Mckernan (1996). Therefore an extensive review of instruments used in this field (including the already mentioned HBDI) helped me address the difficulty to get a list of good questions together, assuring that the respondents' anonymity was guaranteed and explaining to them how important it was to have their responses. I stressed the benefits of the research outcome to all with a view to elevating the response rates and to obtaining honest answers.

#### **3.8.4 Herrmann Brain Dominance Instrument**

I asked the lecturers participating in the learningshops (LPL) to complete the Herrmann Brain Dominance Instrument (HBDI). This is an inventory developed by Herrmann to measure the individual degree of preference or avoidance for each brain quadrant. It entails questions that span education, work, use of discretionary time, self-perception and values (Herrmann, 1995). According to Herrmann (1995), despite the strong relationship between thinking preferences and competencies, the HBDI displays mental preferences, not competencies or abilities. The HBDI does not measure brain wave activity, nor competence or performance. Therefore it is not a test. Rather, it is an inventory. Its scores cannot be

interpreted as good or bad. They merely indicate the high or low preference for different ways of acquiring and processing information; these preferences can be translated into quite predictable behavioural outcomes (Herrmann, 1995).

The HBDI entails blind questions whose implications are not generally known (Herrmann, 1995). For instance, it questions the period of the day in which the respondent appears to have more energy to work. It also asks if the respondent has ever experienced motion sickness. Both of these questions are not clearly linked to any of the brain quadrants and contribute to increasing the likelihood of an honest response.

The HBDI inventory shows the respondent's brain profile in a four-digit numerical code, indicating the number assigned to each quadrant, with the following meaning:

- Primary or strong preference is represented by code 1, which stands for achievement of 67 or more points.
- Preference code 2 stands for secondary preference, indicating neither preference nor avoidance. It stands for scores between 34 and 66 points.
- Tertiary preference or area of potential avoidance is represented by preference code 3 and indicates that the respondent has achieved fewer than 33 points.

Having filled in the HBDI, the LPLs had access to their results, which depict the brain profiles and explain the avoidances, preferences, predictions and descriptors associated with each profile. Hence my brain profile is represented by the code 1-1-1-2. This indicates that I have triple dominance (for quadrants A, B and C) and a secondary preference for the C quadrant. Accordingly, I am strongly related to activities such as planning, implementing, writing, expressing and dealing with technical and financial matters. My preference indicates the need for me to develop the D quadrant, namely my experimental self (intuitive, holistic, and integrative thinking). My descriptors are controlled, conservative, critical, quantitative, factual and emotional. These descriptors represent a general overview of my mental preferences in everyday life.

Inventories and tests like the HBDI are indicated to have weaknesses such as their high costs of administration, concentration on results rather than on process, lack of direct focus on variables of interest in the study or not being tailored to institutional or local contexts or

needs (Cohen et al., 2003; McMillan & Schumacher, 2006). Contrary to some of these criticisms, Coffield et al. (2004) indicate that the HBDI is more focused on the process than on results. This is explained by the fact that the HBDI is about predicting how people behave in the learning process. Such prediction might inform the individual how to approach his/her learning process. Accordingly, Herrmann (1995) stresses that the HBDI does not measure competence. Concerning the lack of direct focus on variables of interest in the study or not being tailored to institutional or local contexts or needs, Cohen et al. (2003) indicate that the golden rule in order to decide on using these instruments is the demonstration of fitness for purpose. Since my intention when administering the HBDI was to determine the lecturers' brain profiles, I found this inventory to fit my purpose. Coffield et al. (2004) indicate other weaknesses that are specific to the HBDI. These include the fact that some respondents may find the HBDI hard to read and understand. Apparently this was not the case with my fellow lecturers, since very few reported difficulties and were promptly assisted by Dr Du Toit, who is HBDI registered practitioner.

Despite these problems, inventories in general and the HBDI in particular appear to have more strengths than weaknesses. One of the strengths of the HBDI is that careful attention has been paid to the nature of the norms, reliability and validity (McMillan & Schumacher, 2006). The other strengths of the HBDI as aligned with tests are that the results tend to be objective and relatively uninfluenced or distorted by the person who administers it (McMillan & Schumacher, 2006). These instruments come complete with instructions for administration; they are often straightforward and quick to administer and to get the scores; and they spare researchers the task of having to devise, pilot and refine the test (Cohen et al., 2003). As I indicate in the section about validity and reliability, these two indicators of research quality have further been indicated to be present by Bunderson (1985) and Coffield et al. (2004).

Coffield et al. (2004) point out the specific strengths of the HBDI, some of which I present in the next lines. The first strength they mention is the usage of the instrument for more than 20 years. The second is the compatibility of the HBDI with several other models of learning styles. The third is that it is based on theory that, despite being originally brain-based, incorporates growth and development.



Informed by these advantages, but also bearing in mind the inventory weaknesses, I administrated the HBDI as part of my action research process. Hence the HBDI results have been generated within my action research process. As I recurrently indicate, the HBDI results offer predictions of the individual's preferred way of learning. For this reason I link this with metalearning since they allow one to know one's preferences and avoidances and, accordingly, organise and approach one's learning process. In this study the HBDI results allowed lecturers participating in the learningshops (LPLs) to get to know such preferences and avoidances and served as point of departure for each one to approach the process of facilitating student learning. For instance, if a certain LPL appeared to be A quadrant dominant he/she would know, according to De Boer et al. (2012), that his/her preferred way of facilitating learning is through learning opportunities based on researched topics that reflect logical argumentation and quantifiable evidence. But he/she would keep in mind that he/she faces as challenge to his/her profile the need to promote co-operative learning groups and activities in which students can reflect on their learning experiences and share their reflection with others.

Therefore, the information provided by the brain profile served as basis for many of the actions the LPLs carried out from then onwards. For instance, they reflected on the results against to their self-perception and they reflected as well on how they could facilitate their students learning and monitor their own professional learning, considering their preferences and the need to challenge their avoidances.

Then I matched each LPL's HBDI profile with the data obtained from the interventions in video-recorded learningshops and from the peer mentoring sessions. In this way I was seeking to find out if there were different patterns of reflection (consistent with the LPL brain dominance).

### **3.8.5 Personal journal**

A journal is a continuous record of the thoughts, attitudes and feelings that determine decisions made during the research (McMillan & Schumcher, 2006).n this stuldy I employed a personal journal following McMillan and Schumacher in order to support the researcher to justify adjustment he/she deems necessary within the study, sustained by the available information. Lecturers participating in learningshops kept a personal journal as well. This

process, according to Kemmis and McTaggart (as quoted by Cohen et al., 2003), allowed them to document two parallel sets of learning, namely their learning about the practice of implementing LSF and learning about the process of their professional learning during the learningshops and mentoring sessions.

The process of keeping a personal journal provided us with some of the several advantages attached to it. For instance, as Towndrow, Ling and Venthan (2008) point out, journaling allows us to produce information that is temporarily organised, which is a way to generate evidence of transformations occurring throughout the process of carrying out the research. Moreover, the study benefited from two additional advantages indicated by Shepherd (2004) as connected with keeping a journal. Firstly, it showed to be a cathartic process which helped us to articulate our feelings and emotions more fully and, hence, it appeared to be a useful way of de-mystifying incidents that occurred. Secondly, it demonstrated to be a useful means of verifying that we, as co-learners and co-researchers, had understood the diverse elements of this learning venture more fully. The weaknesses of journals that we experienced and overcame include the need for certain training, since novices can approach them in a superficial fashion. Therefore, after some time had elapsed and practice had occurred there appeared to emerge improvements in the way we produced the journal entries. However, it proved to require highly disciplined behaviour since we, as researchers, had to enter them almost all the time, so that we could register the ideas, facts, and feelings on an on-going basis.

### **3.9 Data analysis**

As has been stated, this study combines elements of qualitative and quantitative approaches. The quantitative analysis of data derived from questionnaires administered to lecturers entailed mainly descriptive statistics about the demographic characteristics and professional features of the lecturers involved in the study, the methods of facilitating learning they employ as well as their assessment methods. Questionnaire data analysis was carried out with the assistance of STATOMET, employing the SAS 9.2 statistics software package.

The second source of quantitative data was the HBDI, which produced the lecturers' brain dominance profiles. The HBDI was analysed by the Ned Herrmann International Group. The

scoring resulted in a code of lecturers' preferences for each brain quadrant, where the individual's profile was expressed as a four-digit numerical code indicating the strength of preference for that quadrant (Voges, 2005). Therefore I worked on the resulting information, which was expected to allow the description of the sampled group of lecturers in terms of their brain profile.

To analyse audio and visual data from learningshops and mentoring in order to reveal patterns of reflection, I used an initial coding system that helped me to identify themes, according to the features of the whole-brain model (Coffey & Atkinson, 1996). Then I identified patterns of reflection associated with the whole-brain model, which provided me with a means of organising data sets (Coffey & Atkinson, 1996).

Concerning the analysis of data obtained from semi-structured interviews, I created categories in order to encode all the data. To do so I reduced the data to equivalent categories in order to be able to retrieve textual segments that share a common code (Coffey & Atkinson, 1996). Then I proceeded with code-and-retrieve procedure using it to

*treat the data in quasi-quantitative ways by, for example, aggregating instances, mapping their incidence, and measuring the relative incidence of different codes (Coffey & Atkinson, 1996:28).*

Then I created a thematic conceptual matrix, which is a visual format that depicts the information in a systematic way, allowing me to draw valid conclusions and take needed action (Miles & Huberman, 1994). As illustrated in table 3.4, it allows the reader to view a full data set in the same location, and it is arranged in a way that might allow the answering of the research questions at hand. This data analysis process had started early on in the data collection process and had been ongoing parallel to this process, allowing the development and refinement of some instruments and discussion about what was being found in the research sites (Cohen et al., 2003; Babbie & Mouton, 2001).

Table 3.4: Thematic conceptual matrix: state of affairs, causality and solutions

<b>Theme</b>	<b>State of affairs</b>	<b>Cause</b>	<b>Proposed solutions</b>
<b>Guidelines for professional development</b>	<ol style="list-style-type: none"> <li>1. There is lack of PD guidelines.</li> <li>2. Historically and formally there are university guidelines to which the division adheres, but guidelines are not functional.</li> </ol>	<ol style="list-style-type: none"> <li>1. High dependence on offer.</li> <li>2. Lack of organisation.</li> <li>3. Lack of political will.</li> </ol>	<ol style="list-style-type: none"> <li>1. Creation of functional teams.</li> <li>2. Conception of strategy for promotion of professional development.</li> </ol>
<b>Lecturers' pathways to pursue postgraduate studies</b>	<ol style="list-style-type: none"> <li>1. Through institution partnership with donors and funding agencies.</li> <li>2. Through enrolment in internal Master's course.</li> <li>3. Through lecturer's individual search.</li> </ol>	<ol style="list-style-type: none"> <li>1. High dependence on scholarships.</li> </ol>	NONE
<b>Lecturers' participation in short courses</b>	<ol style="list-style-type: none"> <li>1. Lecturers participate in courses about HE pedagogy and research methods.</li> <li>2. Lecturers participate in training courses related to their specific field provided by partners.</li> </ol>	NONE	NONE
<b>Lecturers' participation in scientific events</b>	<ol style="list-style-type: none"> <li>1. Low participation in either locally or internationally organised events.</li> <li>2. High participation in locally organised events.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of funding capacity.</li> <li>2. Lack of initiatives.</li> <li>3. Lack of policy within the institution.</li> <li>4. Lack of political will (political people take many trips).</li> <li>5. Lecturers are busy with other employment.</li> </ol>	<ol style="list-style-type: none"> <li>1. More involvement of academic staff in discussion of issues of national concern.</li> <li>2. There should be regulation associated with decentralisation of power to organise events.</li> <li>3. Establishing or increasing contacts and networks with other HEIs.</li> </ol>
<b>Lecturers' involvement in research</b>	<ol style="list-style-type: none"> <li>1. There is reasonable research, although most is requested research.</li> <li>2. There are lecturers who are strongly and seriously devoted to doing research, although there are no conditions.</li> <li>3. Research is scarce.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of skills, mentality and habit.</li> <li>2. Lack of funding and transparent investment.</li> <li>3. Lack of legal instruments that stimulate research.</li> <li>4. Lack of facilities and functional infra-structures.</li> <li>5. Concern with satisfaction of basic needs.</li> <li>6. Viewing research as complex issue.</li> <li>7. Workload with administrative tasks.</li> </ol>	<ol style="list-style-type: none"> <li>1. Subsidies to reward research and publication.</li> <li>2. Training staff, furnishing libraries, and supply with sharable laboratory equipment.</li> <li>3. Concentration on doing simple and applicable research to solve issues within national agenda.</li> <li>4. Organise scientific groups as unities to carry out research, manage students' research and delineate research lines.</li> <li>5. Lecturer appraisal and promotion system emphasising research.</li> <li>6. Transparent open fund grants for research scheme.</li> </ol>
<b>Integration of reflection within activities occurring at the division</b>	<ol style="list-style-type: none"> <li>1. Unsystematic fashion.</li> <li>2. Performance appraisal system (self-assessment and student feedback).</li> <li>3. Informal conversations with students.</li> <li>4. Evaluation meetings, seminars and discussions.</li> <li>5. Peer-lecturing, peer-mentoring and class observations.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of supportive environment.</li> <li>2. Lack of adequate use of existing reflective tools.</li> <li>3. Lecturer burdened with lecturing appointments.</li> </ol>	<ol style="list-style-type: none"> <li>1. Creation or exploration of the existing lecturer performance appraisal system potential (SFQ, self-assessment and folder of evidence).</li> <li>2. More debate at the section or subject group.</li> <li>3. Promotion of lecturer readiness to value criticism.</li> <li>4. Promotion of action research.</li> </ol>

### **3.10 Triangulation**

One of the ways to ensure that the study meets higher validity is through triangulating data, sources, instruments or theories. Borrowing from Cohen et al. (2003) I define triangulation as the combination of several methods of data collection in the study of the same aspect of human behaviour. With such a combination the researcher hopes to surpass the weaknesses, problems or biases that may be associated with the employment of a single method, observer or theory. Hence the main feature of triangulation is to offset the weaknesses of one method with the strengths of the other in order to provide more comprehensive data (McMillan & Schumacher, 2006). The result of this combination spans from increasing confidence in data, opening space for alternative ways of understanding a phenomenon, challenging findings, providing a clearer understanding of the phenomenon, identifying areas of convergence and divergence (Cohen et al., 2003; McMillan & Schumacher, 2006; Scandura & Williams, 2000).

In the study the researcher can triangulate data, theory, method and observers (Scandura & Williams, 2000). Multiple methods compose the most commonly applied form of triangulation (Silverman, 2011). In this study I engaged in triangulation in diverse ways. I combined semi-structured interviews and questionnaires on innovative practice in the pursuit to understand certain features of professional development. The aim of this triangulation was to gain a deeper understanding of certain features of PD, and to find explanations for certain deviations or weaknesses within the context. In addition alternative ways of understanding professional development were sought. I combined HBDI results with lecturers' reflections collected by means of audio- and video-recording. This combination aimed at providing deep understanding of different patterns of lecturer reflection, according to the differences in brain quadrant. Since I audio- and video-recorded the lecturers' reflections in more than one session, I understood that time triangulation occurred within this study as well.

### **3.11 Validity and reliability**

Validity is a concept that is subject to much dispute in educational research, as the emergence of diverse kinds of validity appears to evidence. The issue becomes even more complex when one embarks on a mixed-method approach. In this study I collect and analyse qualitative and quantitative data separately. Separate standards are determinants for QUAL and QUAN strands (Teddlie & Tashakkori, 2009:209). Hence I approach these

two issues separately. To assume this position I am sustained by the assertion that *if the QUAL and QUAN are valid and credible, then the mixed study will have highly overall data quality, except for the mixed methods research that involves the qualitzing or quantitizing processes* (Teddlie & Tashakkori, 2009:209).

Ensuring validity is crucial for me to claim to have carried out useful research for me, for my fellow lecturers and for whoever might be interested in it. Valid research complies with the rigorous methodological procedures required for it to be plausible, authentic, credible, trustworthy and defensible (Johnson & Turner, 2003; McNiff & Whitehead, 2006). Within this study, I adopted measures to ensure quantitative data validity. Hence, I conceive validity as the extent to which the instrument measures the construct it is attempting to capture (Teddlie & Tashakkori, 2009).

To ensure validity of the quantitative data within the current study I followed thoroughly the set of procedures I describe in the next lines. Hence, in order to ascertain questionnaire validity and reliability, I reviewed relevant instruments used in this field. For instance, I adopted the items from section 3 concerning ways of facilitating learning from the questions entailed on the HBDI. I assured the respondents' anonymity, explained the importance of their responses and stressed benefits of the research for all involved in this research (Mckernan, 1996).

Concerning the HBDI, Bunderson (1985) carried out a study aimed at finding out its reliability and validity. The study concluded that the HBDI aggregates criterion, face and construct validity. However, Bunderson recommends standards that the practitioners must follow as conditions for validity. Those include explicitly informing users that the HBDI is not a test, establishing clear communication by means of providing materials free of technical jargon, supplying evidence of the quality and usefulness of the instrument, and making explicit that no profile is to be evaluated as being good or bad. I followed all of these standards in the current study.

Considering the qualitative approach I find that the concept of validity assumes different meanings. It appears to be conducting research in a rigorous and systematic manner in order to minimise the impact of researcher biases (Hammersely & Gomm, as quoted in

Rooney, 2005). It is seen as the extent to which the research captures accurately the participants' understanding of the phenomenon or constructs (Teddlie & Tashakkori, 2009). In line with the last conception I adopt the concept of credibility which expresses the extent to which my writings are credible to the constructors of the original reality (Denzin and Lincoln, as quoted in Cohen et al., 2003).

In this study I followed prolonged engagement in the field, persistent observation, triangulation techniques and member checking. These procedures are indicated as important in determining the trustworthiness of the study (Lincoln and Guba in Teddlie & Tashakkori, 2009). Trustworthiness is a concept introduced by Lincoln and Guba as represented by four criteria namely credibility, transferability, dependability and conformability. Trustworthiness is analogue, or substitute, for both validity and reliability (Teddlie & Tashakkori, 2009).

Besides contributing to internal validity, prolonged engagement in the field is associated with ensuring theoretical validity. I achieved this by means of my length engagement in facilitating learningshops and mentoring sessions. Therefore, I facilitated 10 learningshop sessions and have been involved in many mentoring sessions with the LPLs. This process took two years and five months. Within the learningshops I promoted constructivist and cooperative learning environments. My role usually shifted from facilitator of learning to that of co-learner. I usually asked LPLs questions, provided space for discussion and checked for agreement on different issues.

Video-recording learningshops and mentoring sessions allowed me persistent observation. As we know, vide-recording captures the nature of the interactions occurring in the natural setting in a way that verbal reports cannot and provided the visual narrative that shows transformation of attitudes and behaviours (McNiff & Whitehead, 2006; Whitehead & McNiff, 2006). In this way video-recording contributed to establishing the relevance of the characteristics for the focus (Cohen et al., 2003).

Member checking serves to offer the participants the opportunity to add further information, to assess intentionality, to correct factual errors, to provide summaries and to check the adequacy of the analysis (Cohen et al., 2003:108). I followed this procedure with both semi-

structured interview transcript and the case studies of action research. Concerning the latter LPLs had very high interaction with the data, since it was generated and analysed jointly with them. Cohen et al. (2003) indicate the use of participant researchers and peer examination of data to be associated with both internal validity and construct validity. Therefore I can say that these kinds of validity may sustain my claim to have carried out useful research for my fellow colleagues and for all those who might be interested in adopting similar practices.

Catalytic validity is, par excellence, one of the correlates of action research. It ensures that research leads to action (Cohen et al., 2003), helping participants to understand their world in order to transform it, thereby empowering them. Within this study I made effort to ensure catalytic validity through having the lecturers conceive and carry out their own small-scale action research processes aimed at monitoring the transforming of their lecturing practice, deemed to be achieved through LSF. Concerning action research, I find my study accommodating some of the procedures McNiff and Whitehead (2006) advance as necessary to ensure validity in this kind of study. During the study I got feedback from critical friends located in Mozambique (work colleagues), South Africa (lecturer) and the Netherlands (former fellow student and work colleague). Their feedback proved to be constructive and enhancing.

In order to ensure both descriptive and interpretive validity (Cohen et al., 2003; Johnson & Turner, 2003) of the semi-structured interviews I used either participant language through rephrasing the respondents' ideas or reviews through asking them to read the interview transcript in order to modify it if not accurate. These procedures, along with audio-recording the interviews and triangulating interview data with questionnaire findings contributed to internal validity.

Validation groups have different tasks from those of critical friends (McNiff & Whitehead, 2006). For this purpose, within the Development of Research Culture and Research Capacity (DERECCA) project where this study is framed we used to have annual evaluation meetings including all the PhD students and their supervisors. There I had the opportunity to present my study and this validation group could listen to me, scrutinise my data and evidence, consider my claims to knowledge and offer critical feedback.



While validity is about accuracy, reliability deals with consistency and accuracy as well. Cohen et al. (2003) term reliability as signifying the degree to which the results of a measurement consistently and accurately represent the true construct's magnitude. Silverman (2011) views reliability as expressing the degree to which the findings of the study are free of accidental circumstances of their production. While Teddlie and Tashakkori (2009) state that it is the extent to which variation in a phenomenon can be explained consistently using the "human instrument" across different contexts.

While in quantitative studies the issue may not be problematic, in qualitative studies there seems to be some dispute since the nature of such studies is uniqueness that seldom can be replicated. However, this should not be an excuse for qualitative research to give up the pursuit of replication in generating, refining, comparing and validating constructs (Cohen et al., 2003:119). Hence those authors go on to say that in qualitative research reliability can be regarded as the correspondence between the researcher's interpretations and the actual meaning conveyed by the participants.

As I have stated in previous paragraphs, in this study I accommodate the demand for prolonged engagement, persistent observation, use of triangulation techniques, member checks and a reflexive journal. Besides these I took careful measures while using each of the techniques to collect data.

Concerning interviews, I trained myself as interviewer and before each interview I used to rehearse the questions in order to ensure that I would select the right wording that would make the questions clear (Silverman, 2011). I audio-recorded the interviews and took additional notes while analysing them afterwards.

With regard to questionnaires Teddlie and Tashakkori (2009) indicate four methods of evaluating reliability, including test-retest reliability, split half reliability, parallel forms of reliability and interpreter reliability. I did not perform any of these evaluation tools, I followed a number of steps that several authors indicate to increase questionnaire reliability. As I have mentioned in section 3.8.3 regarding questionnaire on innovative practice, I piloted the questionnaire. This process allowed me to re-write items so that they became simple, clear and precise and to attune the wording in order to match natural and familiar language

(Johnson & Turner, 2003). Apart from I stressed the importance and benefits of the questionnaire and the study; I worked out issues such as length and ease of completion, and whenever possible I used a critical friend to encourage lecturers to fill in the questionnaires (Further, Hudson & Miller as quoted in Cohen et al., 2003).

### **3.12 Ethical considerations**

Trustworthy educational research addresses ethical issues, not only because they contribute to achieve goodwill and collaboration (Cohen et al., 2003), which might increase the response rate and honesty, among others, but especially because it is required to consider and respect all those involved or affected by research as human beings with rights to comply with. Research studies are faced with the need to observe ethical demands inherent to the relationship between the study and the elements surrounding it. Since I carried out this study in close relationship with lecturers and students, there was a need to follow certain ethical procedures. These are thoroughly described in the application that allowed me to be granted ethical clearance by the Ethics Committee, Faculty of Education, University of Pretoria (see appendix D).

Before I approached potential participants, in order to interview, administer questionnaires and run the learningshops, I discussed with the top of the division (normally faculty or institute) and informed him/her about the research, its purpose, as well as the benefits for the university (Oliver, 2003). In parallel I asked and was granted permission to have access to the faculties and departments involved (see appendices F & G). Then I did the same for the faculties and departments in order to approach lecturers. I did it in order to comply with requirements of some persons in positions of authority who appear to be concerned with the potential impact of the research on their institutions and, thus, with need to be informed about what is going on (Oliver, 2003).

A fundamental issue in research ethics is that participants should have the opportunity to have their identity hidden (Oliver, 2003) and be sure that the information they provide is kept secret (Mouton, 2001). Therefore the questionnaires were completed anonymously. Concerning confidentiality of information, I assured them that data would be used (analysed and interpreted) by me, and only the supervisor and the STATOMET staff would have

access to it. Moreover, I informed them that after the data analysis the data would be stored in a safe place for a time determined by the rules established by the University of Pretoria.

Participants are often cautious about making comments on the organisation and, in order to make an informed decision about participation, they need to understand and be confident about the positive attitude of the organisation towards this research (Oliver, 2003). Therefore I explained to them the purposes of my research and its benefit for them, and showed them that their division's top managers had already given their consent. Alongside I presented some ethical rules of data collection, such as the right they had to withdraw from the interview process, to refuse to be interviewed or to answer any question as well as the fact that I was only going to interview them at moments they considered appropriate (mostly by appointment) and that the interviews would not last for long periods (Mouton, 2001).

Learningshops, as professional development interventions are framed within the activities of the Center for Academic Development (CAD), at the Faculty of Education of the UEM. For this reason I negotiated the joint organisation of the learningshops with the Faculty of Education directorate and the issuing of an attendance certificate to participants. Once again I explained the purposes and the advantage of the study, namely the incorporation of such PD intervention within the set of the CAD activities.

In order to gain cooperation of persons who were going to assist and/or participate in the research (Cohen et al., 2003), I asked for written informed consent (see appendix J) from all lecturers participating in the learningshop and students. I informed them about the purposes, contents and procedures of the research, their right not to participate or to withdraw from the action research process, my commitment to preserve their anonymity as well as to manage the information with confidentiality, and the benefits derived from the research. I have done all of this through a letter of invitation I submitted to them (see appendix I). I informed the potential participants in the learningshops that they would be awarded an attendance certificate.

Concerning the HBDI, which was filled in only by those lecturers who attended the learningshops and carried out their action research with me, the issues of anonymity and confidentiality were not problematic since their brain profiles were going to be handed to

them after being processed by the Herrmann International Group. Therefore I informed them that I would use fictional names to designate them. I identified these lecturers with the acronyms LPL1, LPL2, LPL3, etc. that denotes Lecturer Participating in the Learningshop and the number assigned sequentially to each of them.

In action research, one of the significant issues to deal with regards the power difference between the researcher and the participants. Power is omnipresent in human interactions and constitutes an active ingredient of any process of change (Brookfield, 2009; Somekh, 2006). Not being inherently something positive or negative, only its impact can be labeled as such (Somekh, 2006). Its flow can be named and redirected or made to serve the interests of the many rather than the few, but it can never be denied or erased. (Brookfield, 2009:300). In order to ensure that the differential power relationship between my co-learners and me did not have a negative impact on the quality of my research findings I followed a set of procedures, some of which are encapsulated in the ethical guidelines I have outlined in the previous paragraphs.

One of the main procedures I adopted was always to identify myself first as a lecturer at the Faculty of Education who collaborates with the CAD. Identifying myself as a lecturer rather than researcher may have contributed to increased acceptance as one of them or insider. In doing so I was illuminated by what Cohen et al. (2003) indicate to be the effect of participants' understanding the researcher to be of less or more power than them. Hence they indicate that participants might feel demeaned when confronted with a researcher of less status (whom they sometimes judge) or may keep relevant information undisclosed when they perceive him/her as of higher status (and hence as a threat).

The other procedure I followed consisted on my continuous effort to explain to them that, contrary to traditional researchers, this action research was going to serve to advance their and my interests, concerns and methods and was going to benefit them and me. I explained this in the first learningshops sessions as I describe in section 4.6 on learningshops and throughout the process. The other procedures that are linked to this one can be explained under the framework of Bishop (2005). This author indicates five aspects that should be considered in this kind of research, including initiation, benefits, representation, legitimacy and accountability.

The other procedure I followed consisted of adopting what Bishop (2005) calls lecturer driven research. Hence I guided and drove the research process according to my fellow lecturer's interests and preferences. Beforehand I tried to ascertain that there was common understanding and a common basis for such an understanding, where my concerns, interests and agendas (encapsulated in the need to adopt LSF and scholarly reflection) would become theirs and vice versa (Bishop, 2005). Hence I gave them the possibility to define the research questions and emphasised that they could focus on whichever aspect of their practice that interested them (Barr-Ebest, 2001). I allowed them to determine the likely benefits, to delineate the design of what had to be done in order to collect data, and to decide with whom they would share the knowledge. In this way, I was sharing power with them, since I was recognizing them as potentially able to speak for themselves, to exercise their own agency, and to talk with me on those terms (McNiff & Whitehead, 2006:42).

From what I have said I conclude that through allowing the lecturers participating in the learningshops to develop into a research group that had the power to define its rules, that was aware of the rights and benefits in undertaking this process I encouraged them to constitute an autonomous and responsible self-reflective learning community. Such a learning community could monitor and support each member's definition of relevant research questions and methods of research, adopting a collaborative approach to make meaning of the learning experience. Such a community enjoyed enough space to cooperate, to experience equality and, and specially freedom to share its lessons with me. Substantiating the claim that there was enough freedom is that some lecturers withdrew from the process after some sessions and others did not proceed to carry out their action research, despite having attending all learningshops.

Validity might be addressed through the honesty, depth, richness and scope of the data achieved (Cohen et al., 2003). To capture these elements there had to be honesty, trust and openness between me and the participant (Rooney, 2005). Since my study was not aiming at capturing particular kind of data that required hidden approaches or agendas, there were no major ethical issues that would negatively affect the validity.

*Achieving goodwill and co-operation is especially important where the proposed research extends over a period of time* (Cohen et al., 2003:54). Since the learningshops were going

to last long I thoroughly explained to the potential participants beforehand the objectives, the features, and the benefits of this experimental professional development intervention. I was honest enough regarding this. Concerning their right to withdraw, I was clear enough as well since some participants decided to benefit after some sessions.

I was afraid that the issue of privacy would have impacted on the quality and hence the validity of the data. According to Cohen et al. (2003) the right to privacy may easily be violated during the research or denied at the end. This can happen in three perspectives: collecting sensitive information, doing observations in a private setting and dissemination of private information. I took the necessary measures to minimise the threats posed by each perspective to collect valid data.

Concerning sensitive information and disseminating private information, I thoroughly informed the participants that I would manage the information with confidentiality. Regarding the photographs I opened the possibility to withdraw them or to render faces unidentifiable. Since they found that facilitating learning and attending learningshops were not issues of concern in terms of privacy, they gave me their authoriation to publish it. Moreover, within participant validation they had the possibility to check information gathered at all stages.

One might consider a classroom as a lecturer (and student) private setting. Therefore, in order to respect such possibility I allowed the lecturers to define which leaning opportunities to video-record. Moreover, except for one, all learning opportunities were video-recorded and photographed by the lecturers assisted by students or an assistant lecturer. In this way I could not be there in the classroom as an intruder in a private setting.

### **3.13 Conclusion**

In this chapter I presented the features of the action research design I adopted in this study. Hence I presented the definitions, features and types of action research and discussed the applicability to this study. Then I outlined the mixed methods approach as the main strategy. Afterwards I discussed issues such as sampling, data collection, data analysis, validity and reliability as well as ethical issues.

In the next chapter I will present the findings from the empirical study.

## CHAPTER 4: Findings from empirical study

### 4.1 Introduction

I carried out this study driven by the question, *How can I (we) promote critical reflection on innovative practice, contributing to the professional development of academic staff in Mozambican Higher Education Institutions?* More specifically, with the study my intention included exploring the occurrence of reflection within professional development interventions that take place in the Mozambican context of Higher Education; exploring how we can foster critical reflection within that working context. Therefore I promote lecturers critical reflection about their transformative practice. Such transformation is encapsulated on adoption of learning styles flexibility. Besides, I seek to find out if there are different patterns of reflection within individuals with different learning styles or brain quadrant dominances.

Within this chapter I present the findings from the empirical study. I divided the chapter into four sections, following the research sub-questions that guide the study. This way of presenting allows for the visualisation of the extent to which data gathered through different methods answers the different research sub-questions of the study. Initially I present a biographical description of the respondents, which may help the reader form an idea of the Mozambican higher education lecturer.

The questionnaire on innovative practice serves as a baseline, informing the study about the features of the Mozambican HE context in which it was carried out. I analysed questionnaire data with the assistance of STATOMET staff, employing the statistical package SAS 9.2. Analysis of questionnaire data entailed mainly descriptive statistics about the demographic characteristics and professional features of the lecturers involved in the study, the tools of reflection they might employ, and the methods of facilitating learning they employ.

### 4.2 General information of Mozambican higher education lecturers

General information about the sampled questionnaire respondents embraces characteristics of the participants that entail their location, the institution to which they belong

I administered the questionnaire along six (6) provinces: in the southern (3), centre (2) and northern (1) regions of Mozambique. Figure 4.1 indicates the provinces in which I administered the questionnaire as well as the number of respondents per province.

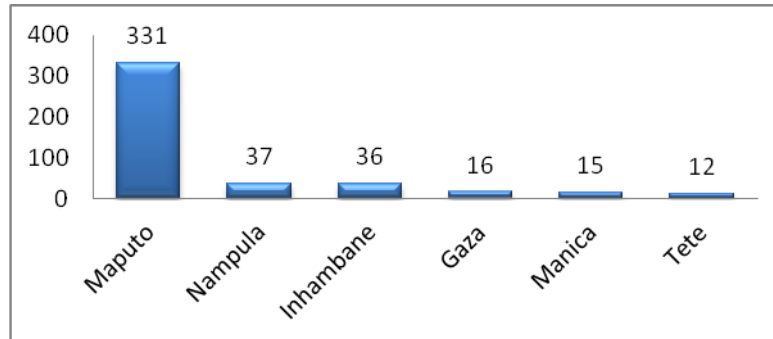


Figure 4.1: Provinces in which the samples of lecturers are located

There is a notable imbalance in the respondents' distribution per province. This has to do with the distribution of both institutions and academic staff across the country. Hence I found for instance that provinces such as Tete and Gaza have just one small HEI, Manica has two, while Maputo has more than five, two of which (UEM and UP) are the largest in the country. Out of 2.376 lecturers, nearly 91% were located in Maputo (Directorate for the Coordination of Higher Education, 2006).

Lecturers from seven (7) HEIs participated in the study. Only the UEM and the UP had lecturers located in two provinces each participating in the study. Figure 4.2 presents the distribution of lecturers who responded to the questionnaire per HEI, as well as the location of such institution.

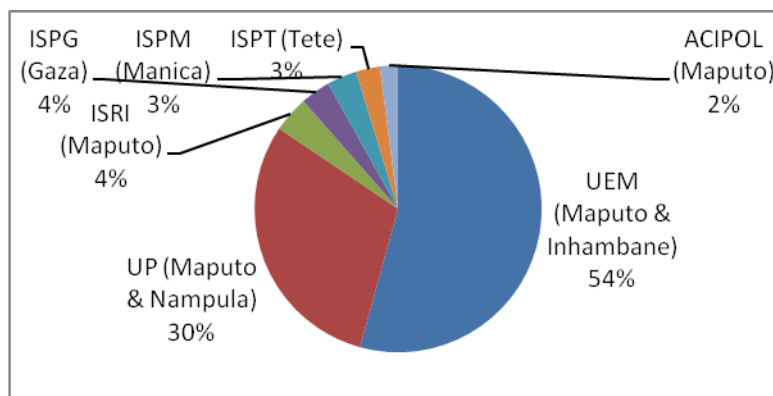


Figure 4.2: Distribution of respondents per institution and province



In accordance with what I postulated in the previous paragraph, I observe that jointly the UEM and the UP provided nearly 84% of the respondents in Maputo. The explanation for that fact dwells not only on the institutions sizes, but also on the ease with which I could gain access to them. Their size made it easy for me to deliver the questionnaires mostly with the assistance of local staff. In the other institutions, with administrative structures somewhat less complex, I had to deliver and collect all the questionnaires myself. That aspect limited the return rate. For instance, in the ACIPOL I had only 9 questionnaires completed, while at the ISRI, where I was assisted by local staff, I managed to collect 19 completed questionnaires. Of course, I cannot assume this to be the only reason behind this fact, since the staff size, their availability and willingness to respond should be considered. HEIs located out of Maputo are essentially small in staff, so that the numbers gathered are not much lower than the institution actually has.

Concerning the respondents academic degree, depicted in figure 4.3, I find that 232 lecturers (52%) hold only a Bachelor's degree, while 168 (38%) have a Master's and 47 (10%) have attained a doctorate. This scenario resembles the country context where more than 60% of the lecturers have only a Bachelor degree (Campos, 2011; Directorate for the Coordination of Higher Education, 2006).

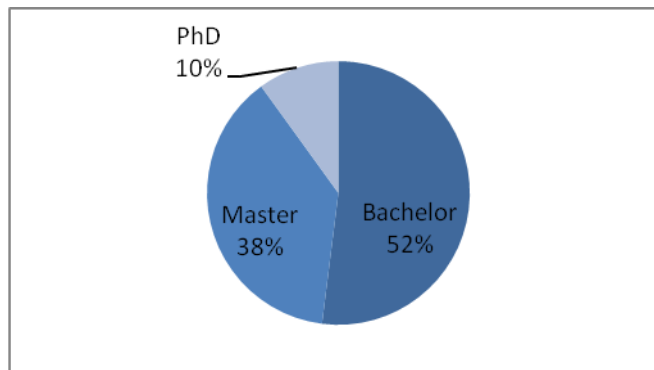


Figure 4.3: Lecturers' academic degree

Concerning the respondents' academic category, 212 (47%) respondents indicated that they were junior lecturers, 177 (40%) indicated to be lecturers, 41 (9%) said they were senior lecturers while 14 (3%) indicated to be associate professor (12) or senior professor (2). This situation to certain extent is consistent with the academic degree, where the majority is composed by lecturers with Bachelor (Licenciatura) degree. In fact most if not all lecturers

with this level are hired as junior assistant lecturers. In order to get promotion to become lecturers they have to comply with a number of requirements which, in certain cases, imply attaining the Masters degree. That is for me the reason why there is such balance between the prevalence of academic degrees and academic category.

The questionnaire respondent's age ranges from 22 to 68 years. The mean age is 37 years. I found the major concentration to occur between the ages of 26 and 50 where there are 364 respondents.

Lecturers years of experience range from 1 to 40 years. Grouping this information I could observe that the majority of lecturers are those who have between 1 and 10 years of experience in HE, with a total of 383 lecturers (86%), as table 4.1 illustrates.

Table 4.1 Lecturers' years of experience at HE

<b>Work experience years</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Not known</b>	33	7
<b>1 – 4</b>	189	42
<b>5 – 9</b>	110	25
<b>10 – 14</b>	48	10
<b>15 – 19</b>	36	9
<b>20 – 24</b>	10	2
<b>25 – 29</b>	11	3
<b>30 – 34</b>	3	1
<b>35 – 40</b>	7	2

In chapter 1, I explained that Mozambican HE is featured by mushrooming of HEIs. This process is accompanied by hiring more and more lecturers, with particular incidence to those recently graduated from HE. That might sustain why more than 50% of the inquired lecturers have between 1 and 10 years of experience. Besides, I find this information consistent with that of academic degree and academic category I presented in previous paragraph. At the outset, I visualise this information as meaningful for HEIs which have to think of their academic staff professional development needs and expectations. With this respect, I recall that most young scholars enter the profession full of expectations, dreams and desires not only concerning material compensation, but also regarding professional growth.

### 4.3 Integration of reflection within existing PD interventions in the Mozambican context of Higher Education

In the first chapter I mentioned that there are not studies mapping the context of PD in Mozambique. Therefore, I realise that finding out the professional development interventions offered in the Mozambican context of HE would be important step before finding out how critical reflection is integrated within these interventions. Therefore, in order to answer to that sub-question I employed concurrent triangulation design (Creswell et al., 2003). I administered questionnaires to lecturers with the intent to explore the occurrence of professional development interventions and the adoption of tools for reflection. Besides, I carried out semi-structured interviews with senior lecturers and those lecturers occupying management positions. With semi-structured interviews I sought to collect opinions and interpretations of issues surrounding PD in Mozambique.

The semi-structured interview questions allowed the identification of typical features of PD in Mozambique. While carrying out the coding process I was able to identify diverse categories associated with the main themes, which I have presented through the thematic conceptual matrix. Relevant to the sub-question concerning the integration of reflection within existing PD interventions in the Mozambican context of Higher Education is the identification of patterns of response that I present in Table 4.2. In the following paragraphs I elaborate more on such patterns and, wherever applicable, I triangulate the semi-structured interview data with questionnaire data. In this way I am putting into practice parallel mixed analysis, according to which I separately perform both sets of analysis and interpret and write them up in an integrated manner (Onwuegbuzie & Teddlie, 2003).

Table 4.2: patterns of response regarding PD and integration of reflection

<b>Guidelines for PD</b>	<b>PD interventions</b>	<b>Integration of reflection within the PD interventions</b>	<b>Measures to increase reflection</b>
1. Absent	1. Degree courses	1. Seminars and discussions	1. Exploring performance appraisal instrument
2. Existing regulations are not functional	2. Short-courses 3. Scientific events 4. Scientific research	2. Short-courses 3. Research group work 4. Performance appraisal system 5. Peer lecturing and mentoring 6. Natural reflection	2. Promoting discussions 3. Promoting lecturer readiness

### Theme 1: Guidelines for professional development of academic staff within divisions

Professional development of academic staff within a complex organisation such as universities should be based and regulated by adequate plans, guidelines or strategies. As Blackwell and Blackmore (2003) posit, structural arrangements should be derived from strategy. And Zuber-Skerritt (1997) claims that an institutional staff development policy contributes to assuring the maintenance of high quality teaching. Commensurate with this, two patterns of response emerge. One is linked with those respondents who indicated that there is a lack of guidelines to orientate or regulate lecturer participation in PD interventions. The following is a sample of responses I got from respondents concerning this issue:

Respondent	Response
MPR 7:1	<i>The situation is precarious; there is no programme or plan for lecturers' PD.</i>
MPR 22:1	<i>Ideally there should be a strategy, but the lack of own funding capacity implies that we must rely on opportunities' occurrence.</i>
MPR 23:6	<i>There is nothing systematic. We are struggling in order to have money to sponsor our staff attendance of postgraduate courses.</i>
MPR 26:2	<i>... does not have a well defined and clear policy that allows lecturers to interact with their colleagues in the field either locally or abroad.</i>
MPR 29:1	<i>It would be a big ambition to talk about a strategy ... it is difficult to talk about adoption or existence of a strategy.</i>
MPR 30:1	<i>There is no strategy for PD. A strategy of this kind should link the lecturer PD with the development of the HEI profile. For me everything that is made is occasional.</i>
MPR 32:1	<i>I would like to say there is a strategy but it is complicated.</i>

I find the lack of guidelines to be associated with two consequences. On the one hand, it might cause the institution to be under turmoil, since all the lecturers are struggling to have access to diverse opportunities. It might cause a kind of 'survival of the smartest'. On the hand, it is associated with developing the lecturers pro-active attitude since the context requires them to search for such opportunities.

The second pattern of response within this theme is linked to those respondents who pointed out the fact that historically and formally there is a university regulation or guidelines to which their divisions adhere, but they are not functional. This state of affairs might predominantly be attributable to reasons such as a lack of hands-on posture of the institution and financial dependence on partnerships and/or donorships. Some respondents conveyed their ideas in the following way:

<b>Respondent</b>	<b>Response</b>
MPR 5: 1-3	<i>A specific strategy would be related to the university ... It used to happen in the past, but now it is getting worse to the point that today there is no scholarship provided by the institution.</i>
MPR 15: 1-2	<i>One of the main things that we have done when we entered here in polytechnics was the development of a training plan ... Now the main problem is how to put this plan to work.</i>
MPR 26:6	<i>In the beginning there was a regulation according to which every individual hired by the university, after two years was supposed to present a training plan conducive to a Master's degree and after certain years should start his/her PhD. I think this was lost probably due to a lack of financial resources - by the time there had been lots of financial sponsorships for that.</i>

The historical review below carried out by one of the respondents appears to complement the contributions above:

<b>Respondent</b>	<b>Response</b>
MPR 27: 1	<i>If we look at a 30 year horizon, i.e. from the beginning of the 1980s to now we may find that there has always been a great concern of the UEM to accelerate and create opportunities for its academic staff development, especially at the postgraduate level. Clearly the opportunities for postgraduate studies were diverse according to the socio-political evolution of the country. Therefore our option for training at the postgraduate level is marked by offers made by the former socialist countries ... Gradually we witnessed the changes in that situation, with some western countries taking the lead on the offer of such opportunities. Probably the end of the decade 1990 and the beginning of 2000 is marked by the trial to construct realities of internal post graduation - Master's courses start to appear, some with strong dependence on external sources and others with little dependence. But these are the first and real steps for internal postgraduate studies which is a developmental phenomena and there are first PhD steps, which are still meaningless since there is only one faculty (of arts) offering a PhD.</i>

## **Theme 2: professional development interventions occurring in Mozambique**

With regard to this theme I observed the emergence of four pattern of response. Accordingly, I could find that the main professional development interventions occurring in Mozambique entail pursuing post-graduation courses, attending short-courses, the scholarship of teaching, and scientific research per se. In the next lines, I elaborate on each of these categories, discussing certain of its correlates as indicated by the respondents.

### **Lecturers' access to postgraduate studies**

From the conversations I carried out during the semi-structured interviews with senior lecturers and lecturers occupying management positions it is apparent that in Mozambique, when we talk about PD, the first idea that emerges is postgraduate studies. This has to do

with the high prevalence of lecturers with a Bachelor's degree followed by a reasonable number of those who possess a Master's degree, as questionnaire data has shown and literature review sustain (Mário et al, 2003; Direcção de Coordenação do Ensino Superior, 2007; Campos, 2011). This situation is conducive to a high demand for postgraduate studies. From this remark, and considering the almost unanimous perspective that there are no functional guidelines or strategies for PD, I question how lecturers proceed in the pursuit of opportunities to get their Master's or doctoral degrees. As response to that question, I found the emergence of three categories of response.

The first category is encapsulated by those respondents who indicated that lecturers look for PD opportunities by themselves. In some cases the lecturers commence the search by individual initiative and in other situations they are urged and supported by the institution, as the following respondent statements sustain:

<b>Respondent</b>	<b>Response</b>
MPR 4: 3	<i>Some lecturers search for training opportunities through external financing.</i>
MPR 5: 3	<i>... the strategy we adopted is to urge lecturers to find the scholarships by themselves in other institutions, such as the Ministry of Technology, Ministry of Education, and organisations from other countries.</i>
MPR 29:6	<i>In other cases, lecturers search by themselves. In this case the UP seeks to give supplemental support to them.</i>
MPR 32: 2	<i>Due to a lack of a clear strategy for staff training, many have looked for their own an opportunity to continue their studies.</i>

The second category regarding lecturers pursuit of postgraduate studies is composed by the institution initiative to frame such a need within a joint project with a partner. Therefore, the respondents indicated that when there is a partnership or offer from donors and funding agencies, the institution attributes it to eligible lecturers. This pathway is linked to the happening that many international development agencies provide scholarships for third world country staff to further their studies or, within a specific field, establish partnerships with the whole university or a specific division seeking to solve a particular problem within the country and area. These doors are explored by Mozambican HEIs to provide further education to their academic staff, as the following statements show:

<b>Respondent</b>	<b>Response</b>
MPR 3:1	<i>There are few real opportunities. Those that appear more are scholarships offered by agencies and embassies.</i>
MPR 9:3	<i>The majority get scholarship via the project of the institution. When we conceive a</i>

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	<i>project, it is established that a certain number of staff members should do a degree in connection with that project.</i>
MPR 29:6	<i>... is the offer directed to the university. Here the UP proceeds to selection of candidates who will comply with such requirements.</i>

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The last category entails a pathway that historically appeared later than the two previous ones. It is linked to the opening of Master's courses within the faculty, which in Mozambique started to be offered in 2000. In this respect part of the respondents asserted that when the institution opens a Master's course it determines that certain positions are for internal academic staff. Such Master's courses can either be opened purposefully to provide training to the division's academic staff or to respond to external demand. In this case, it is seen as a window to giving lecturers an opportunity for their professional development, as the following sample responses convey:

<b>Respondent</b>	<b>Response</b>
MPR 4: 3	<i>Some lecturers are attending their Master's courses within and outside the country. For instance, three lecturers are attending a course that is locally offered by this faculty.</i>
MPR 11: 3	<i>There are those who seek for themselves when they are motivated to improve their skills, because if we wait for the university initiative we will stagnate.</i>
MPR 29: 5	<i>It opened Master's courses through getting support from established universities abroad and in diverse areas. It created Master's courses in which 90% of the students are university lecturers.</i>

My analysis of data shows that post-graduate studies appear to be the main vehicle for academics professional development in Mozambique. I find such prominence of post-graduation related to the high prevalence of lecturers holding a Bachelor's degree (Licenciatura) as their highest academic degree. Besides, I find the significance of post-graduation to be attached to research the individual has to carry out at this level. Normally such research has to be relevant to the individual's field of specialisation, apart from the expected or desired alignment with national policy, as the Strategic plan for HE teachers' training (Ministério da Educação, 2009b) advances. The expectation is that these post-graduate studies will provide the individual with rich learning and networking experiences with fellow students and opportunities to acquire new and applicable knowledge of the area in which the lecturer will work. Therefore, pursuing post-graduate studies is conducive to lecturer improvement in facilitating learning, in carrying out research and other related activities such as community engagement.



### Lecturers' participation in short courses

Short courses compose the second dimension of lecturers' professional development in Mozambique. I have found the need for this kind of PD effort associated with the HEI's focus on recruitment, development and mentoring of the new generation of academic staff as underpinned by both the mobility and retirement of lecturers (Groccia, 2010). Questionnaire data have shown that there are many young lecturers within the academic staff in Mozambique. Literature review sustains that most of the hired lecturers does not have access to such kind of qualification as Postgraduate Certificate in Higher Education (PGCHE). Therefore the institutions need to offer courses that can be either about teaching methodology, research methodology or linked to a specific issue within the lecturers' field. Here the new lecturers are exposed to a body of knowledge that should enable them to cope with their initial steps of lecturing practice (Moon, 1999). In this way the institution guarantees the maintenance of high quality teaching (Zuber-Skerritt, 1997). Concerning lecturers' participation in short courses, semi-structured interview respondents indicated that lecturers participate in courses about HE pedagogy and research methods; this is sustained by the sample responses presented below:

<b>Respondent</b>	<b>Response</b>
MPR 5: 4	<i>We attend mainly short courses offered by the university. The scientific directorate offered recently courses in Research Methodology and Qualitative Methods.</i>
MPR 16: 1	<i>At the beginning of each academic year we have short courses about competence-based teaching, teaching methods, and student assessment.</i>
MPR 23: 3	<i>... we organise seminars for lecturers, since they lack some pedagogical skills. So we ask someone from another university – UEM and UP – to provide training on teaching methods, student assessment.</i>
MPR 32: 4-5	<i>There were some initiatives at the Faculty ... with the support of a Dutch institution. It had to do with teacher training. Nowadays other institutions engage in efforts to qualify the academic staff providing courses of teaching methodology in HE.</i>

According to questionnaire results, the most attended short course is Teaching Methods (80% of the respondents). This is followed by Research Methodology (64%) and Student Assessment (63%). Laboratory courses (14%) were the least attended short courses, probably due to lack of laboratory facilities in Mozambican HEIs. This happens against 43% of the respondents lecturing in the Behavioural and Social Sciences. Table B1 (See Appendix B) depicts the distribution of respondents' attendance of short courses, either by institution or by course, including the totals by course.



On looking at institution respondents I find that the highest rate of attendance of courses of Teaching Methods occurred at the ISPG (93%), the ISRI (83%) and the ACIPOL (89%). This result might make sense taking into consideration that, except for the ISRI, these institutions have, to a certain extent, been recently established and thus their staff in most cases are freshly graduated and employed. Therefore there is a need to equip them with basic skills of HE pedagogy. Concerning Student Assessment and Research Methodology, there are no marked differences between the institutions' respondents.

Apart of short courses offered by the institutions, I noticed that lecturers seek to increase their knowledge within their field of training. In this regard there were respondents who stated that lecturers participate in training courses related to their specific field and provided by partners, as the sample responses below show:

<b>Respondent</b>	<b>Response</b>
MPR 14: 4	<i>Besides, there is a window opened from the institution, where the lecturer identifies a certain short course which is relevant to him/her. Depending on the financial conditions, there is openness to fund the attendance of such a course. There are examples of lecturers who have gone abroad within such conditions.</i>
MPR 15: 6	<i>... I cannot consider the situation as bad because as what I have seen many colleagues have been going out to China, Brazil, Tanzania, etc. for short courses related to their fields of action.</i>
MPR 17: 4	<i>Some lecturers with particular training interests look for relevant short courses and attend them.</i>

I visualize the lecturers' pursuit of their specific field short courses as guided by the belief that specific field courses have such an impact as the transformation one makes to ones professional practice (Moon, 1999). Since lecturers gauge the impact of a course he/she has attended by looking at the difference it makes to his/her practice, the willingness to attend is likely to increase. Therefore question raises as to how such attendance can be made possible in a context that recurrently the claim is that no financial recourses are available to grant participation in professional development interventions. The answer for data question might direct us to the need for innovative approaches, including indoor thematic seminars, round table discussions, and so forth.

### **Lecturers' participation in scientific events**

A valuable intervention to promote PD entails active problem-solving and discussion, especially when the lecturers are confronted with situations of uncertainty and new problems

for which there is no formula (Zuber-Skerritt, 1997). Such opportunity is provided by events including conferences, seminars and workshops. With regard to lecturers' participation in scientific events, a number of respondents indicated that there is low lecturer participation in events organised either locally or internationally:

<b>Respondent</b>	<b>Response</b>
MPR 13: 3	<i>Lecturers do not attend to events, such as workshops, seminars, etc. due to lack of funding.</i>
MPR 23: 2	<i>Concerning workshops, seminars, etc. there is a problem here at national level. Generally when it takes place the organisers just invite people from that field.</i>
MPR 24: 3	<i>The attendance is low due to lack of funding. This activity does not have the priority the lecturers think it should have.</i>
MPR 25: 4	<i>When they occur abroad there are not always sponsorships for attendance.</i>

Although highly recommended, involvement in locally organised events is still low. This might have to do with a weak incidence of events organised and with low financial capacity to attend. Therefore I found that some respondents indicated moderate participation in national events. Hence, they indicated the following:

<b>Respondent</b>	<b>Response</b>
MPR 4:1	<i>Lecturers used to attend events organised locally or used to be co-organisers of such meetings.</i>
MPR 25: 4	<i>When they take place within the country many lecturers attend them.</i>
MPR 28: 3	<i>We attend and present communication in many conferences nationally.</i>

Despite these indications, I have found in the questionnaires that the three activities with the highest incidence were attendance of scientific events (85%), attendance of short courses (69%) and mentoring (68%). Here I observed an apparent contradiction between the semi-structured interviews and questionnaire findings. One might observe that a lecturer attends once in his/academic carrier each short course (either teacher methods, research methodology or student assessment) while attendance of scientific events takes places throughout his/her academic life.

Regarding the attendance of scientific events by institution respondents, the Higher Institute for International Relations (ISRI) (95%), the Higher Polytechnic Institute of Tete (ISPT) (92%), the Eduardo Mondlane University (UEM) (88%), the Higher Polytechnic Institute of Gaza (ISPG) (87%) and the Higher Polytechnic Institute of Manica (ISPM) (87%) register the highest rates. In turn mentoring occurred more often at the ISPG (87%), the ISPM (80%),

and at the UEM (75%). Joint activity(ies) with other institution(s) is/are indicated to have been carried out by 52.8% of the respondents, which might denote that the linkage or insertion of the HEIs within the community is still half-way from desired.

The respondents' activity reflecting the lowest incidence is publication of articles and/or books (chapters), where only 40% of the respondents indicated to have performed. This contrasts with carrying out scientific research (63%). The data might indicate that there is considerable research data being stored in drawers and on memory sticks (as some respondents said in the interviews).

I regard participation in scientific events, such as conferences, seminars, and workshops as providing diverse opportunities for individual lecturer growth. Such opportunities include the confirmation of the adequacy of one's ways of performing. Here the lecturer can understand that his/her way of working, facilitating learning and carrying out research is echoed in practices carried out by fellow lecturers working in different contexts. On the reverse side, by observing/listening to different experiences, the lecturer can identify gaps within his/her practice and perhaps find solutions to enduring problems he/she has been facing. The other opportunity provided by these events involves the room it creates for the lecturer to open his/her mind to new perspectives brought by fellow participants. Networking creates space for the individual to establish partnerships conducive to joint ventures with fellow lecturers facing the same or different challenges. For all these reasons I regard participation in scientific events as a strong vehicle and catalyst of academics' professional development.

### **Lecturer's engagement in the scholarship of teaching**

The HEIs cannot be found to be islands in the society in which they are integrated. In any society many remarkable and prominent natural and social phenomena occur that require a certain degree of analysis for the society to understand them. Frequently it is expected that the university would contribute to gaining such comprehension. This implies that the university is expected to play a more active role in the promotion of the understanding of phenomena that occur within the society. Accordingly, Groccia (2010) asserts that lecturers' involvement in dialogue, communication and reflection with collaborating colleagues is conducive to overcoming developmental challenges. Therefore the respondents suggested that although there is some, professional development would be significantly enhanced with

more involvement, through invitation, of the academic staff in discussion of issues of national concern. In this way, there would be contribution to increase the lecturers' engagement in the scholarship of teaching, as it is sustained by the following two statements:

<b>Respondent</b>	<b>Response</b>
MPR 23: 2-4	<i>... there is a tendency not to invite academic staff for activities organised by the government. If you find academic staff in the event, there is a high likelihood that it has been organised by academics. Universities should be invited to all events. If someone is there, he might have achieved that by his own efforts ... When they say that the President or Minister is visiting/travelling to another country and he is going with a staff, there is the technical part, which should include the university lecturers.</i>
MPR 27: 3	<i>... due to a lack of academic vision, due to our cultural revolution, after independence, the experience of liberation, let us say that the freedom fighters have looked at the university with suspicion – first due to class conflict which represented the scientific aspiration of the more bourgeois. Then we lost the opportunity to use the university to promote the scientific development of the society.</i>

Another perspective that has emerged from responses is that in order to increase lecturer participation in scientific events, there should be an item within the regulation mechanisms asking lecturers to look at and attend a minimal number of events within a certain period. Such a regulation would be aligned with a performance appraisal system that requires a lecturer to list the events attended, with evidence. Apart from this, lecturers have suggested that there should be decentralised organisation of such events, since in certain instances putting this endeavour to practice has to go through an amalgam of bureaucratic network that makes it hard to organise even a one-day seminar. Thus there is a reduction of opportunities for lecturers to attend such events. Therefore, there were respondents who proposed regulatory mechanisms associated with the decentralisation to organise events. Below there are two sample respondents statements:

<b>Respondent</b>	<b>Response</b>
MPR 10: 9	<i>The dilemma and scenario presented has to do with the high centralisation of power and dependence on Maputo headquarters. For us to do anything we have to wait for orientation even for seminars, coming from Maputo.</i>
MPR 29: 10	<i>We have to create a system according to which it is mandatory for a lecturer to attend a number of short courses and seminars within a certain period. We cannot keep lecturers who are academically dead – who don't attend anything, and don't write anything either.</i>

### Scientific research within HEIs

HEIs should be particularly well-equipped to facilitate the production of knowledge as a way to promote the country's growth. Such endeavour is normally facilitated by lecturer engagement in carrying out scientific research. The participation in research activities, as professional development, can be understood here in different perspectives, including carrying out research, being a member of research group, and supervising students research. Besides, scholars (Ferman, 2002; Frick & Kapp, 2009; Quinn, 2003) indicate research as a valuable way to promote the academic professional development. There would be a number of reasons sustaining that position. However, for me, two motives advanced by Scott (2005) appear to suffice. The first is the need lecturers have to effectively engage in their disciplines and the second is the increased focus on evidence-based practice, which require more systematic interaction between research and the lecturer practice. With regard to the state of research within the country, some respondents indicated the occurrence of reasonable research, as the response extracts below illustrate:

<b>Respondent</b>	<b>Response</b>
MPR 6-9	<i>At the department and faculty level there is some research and publication. But it happens more in co-authorship, rather than individually, because it takes place within joint projects within the departments and/or sections.</i>
MPR 24: 5	<i>The Centre for Strategic Studies does some research, but nothing compared to what the expectations concerning this are.</i>
MPR 29: 11	<i>There is research in the country. Not little research. We find lots of lecturers busy with administrative issues. But it does not mean that there is no research. Many times we have the reports stored in the memory sticks and drawer.</i>
MPR 30: 7	<i>In the last 15 years or so, I have realised that there is some progress, but in general it is not satisfactory in terms of planning and carrying out research.</i>

A second category that has emerged is linked to those lecturers who said that research is limited, due to reasons such as a lack of grants, symbolic or material stimulus, limited research skills of many lecturers who hold only a Bachelor's degree, and a shortage or absence of facilities, among other reasons. Hence there were other respondents who stated that research is scarce. Below are three sample responses within this category:

<b>Respondent</b>	<b>Response</b>
MPR 1: 5	<i>Scientific research is insufficient due to a lack of resources. However, some research is carried out at individual level.</i>
MPR 6: 5	<i>Is there any research in here?</i>
MPR 32: 8	<i>Now, research conceived by the university for the university is very difficult and limited due to a lack of financial resources.</i>

The third category entails those respondents who acknowledge the whole range of limitations, but still believe that much and serious research is being conducted, even if it is under request or lecturers' individual endeavour. Hence, the respondents established that much research is being done under request of private institutions and lecturers who are strongly and seriously devoted to doing research, although it is not available in publications. That position can be justified by the following respondent statements:

<b>Respondent</b>	<b>Response</b>
MPR 8: 6	<i>The lack of funds hinders attainment of some research efforts. But we witness a huge interest in lecturers to carry out research. Therefore we can see some publications. I think that research might be reduced but lecturers would like to do research, some of them using their own resources.</i>
MPR 14: 5	<i>There are individual initiatives from colleagues who, through partnerships with institutions, carry out research such as identifying native plants with medicinal and dietary usage. Others, in partnership as well, are involved in testing liquids, fertilizers, and cotton varieties. Most of the research carried out is linked to institutions.</i>
MPR 25: 5	<i>Research is not so strong, but we cannot generalise it. We have some lecturers who are seriously involved in research and they have the opportunity to present their findings/papers/articles at conferences.</i>
MPR 29: 11	<i>We find that many lecturers carry out research for NGOs by request. So this is the issue. Simply the reports end up in drawers or in NGO's shelves.</i>
MPR 32: 8	<i>There is research in the country. But when it is carried out by Mozambican lecturers or staff, almost always it is done with the budget of other institutions. Therefore, the research results go first to those institutions. Many university lecturers have been doing research of this kind.</i>

### **Measures to increase scientific research**

According to Zuber-Skerritt (1997) one of the main priorities of professional development in HE consists in maintaining and constantly improving the quality of teaching and research. For her this can be assured through a reward system and climate in which high quality teaching is valued and rewarded. Despite the discussions on the relationship between teaching and research, there are arguments for continued lecturers involvement in carrying out scientific research, apart of the reasons I have already mentioned, due to the need to maintain and enhance the quality of student learning and teaching, as well as the need to increase the lecturer and institution reputations, among others as indicated by Scott (2005). Therefore it appears that a system that rewards teaching should previously have rewarded research and publication. In order to increase scientific research, respondents advanced the conviction that HE in Mozambique should have a lecturer appraisal and promotion system



emphasising research and publication, a part of rewarding it through subsidies and salaries.

Below are sample responses of this category:

<b>Respondent</b>	<b>Response</b>
MPR 3: 6	<i>Research should be rewarded. The lecturer ... has to feel that he is not suffering with research as if it is a personal issue because it is framed within the system. Therefore when he/she needs any component it must be provided, not having to look for it him/herself, and make lobbies for acquisition.</i>
MPR 12: 5	<i>The criteria for lecturer promotion ought to stimulate research. They [would] ask for ... quantity of projects approved or reports published, and the like.</i>
MPR 22: 3-5	<i>There should be remuneration for articles published by lecturers ... We must think of promotion based on publications ... It should be stimulated by means of significant subsidy for lecturers carrying out research.</i>
MPR 27: 5	<i>It can be achieved by combining a system of intelligence and a competitive system, i.e. a system of intelligence –the scientific directorate within the UEM should have the human capacity to assess the gradient of potential to carry out research within the university. Then to compare this gradient of potential with the government policies, regional policies and developmental goals and promote the development of certain nucleus in a selective way based on concrete principles. That would be interesting ... We have never been able to establish a system that promotes research, rewarding the groups that do good and useful research and eliminate from the system those groups that opportunistically misuse the resources for research.</i>

Aligned with the limitations faced in the daily activity and stressed by literature (Fry & Utui, 1999; Ministério da Educação, 2009a), the respondents proposed that scientific research can be increased by the provision of conditions such as training staff, transparent open fund grants for research, furnishing libraries with books and journals, and the supply of sharable equipments. Below are sample responses framed within this category:

<b>Respondent</b>	<b>Response</b>
MPR 7: 6	<i>On the other hand, it seems that there should be transparency at the Ministry of Science and Technology.</i>
MPR 11: 5	<i>We must create conditions, such as a comprehensive campus with theatre rooms, library and other facilities.</i>
MPR 19: 11	<i>There should be an effort to finding people who could increase the capacity of the lecturing staff's research skills.</i>
MPR 24: 5	<i>Libraries should be equipped at the maximum level possible: there should be specific funds for libraries.</i>
MPR 26:16	<i>We should reactivate the open-fund for research and put all the university fighting for the same fund aside, defining quotes for the faculties.</i>
MPR 27: 6	<i>... we should allocate, obtain and direct more resources for research. In this sense we should maximise the university platform of common usage equipment. It is useless to have certain equipment for the sake of just having it.</i>
MPR 30: 6	<i>... we observe that only those lecturers who have good linkages receive grants ... There should be more transparency in access to grants.</i>

Research in HE as a means of promoting professional development cannot rely on abstract approaches. It has to be context-grounded, adopting practice-orientated approaches (Zuber-Skerritt, 1997; Ferman, 2002). Accordingly some respondents thought that lecturers should concentrate on doing simple and applicable research to solve issues within the national agenda. This would contribute to increasing research carried out in the country, as the following sample responses appear to convey:

<b>Respondent</b>	<b>Response</b>
MPR 8: 9	<i>If it is not possible to carry out classic research ... There are various social events that occur, which do not require a lot of funds to write an article about.</i>
MPR 23: 7-8	<i>There are small-scale researches that we could carry out here ... Another example is that the government implemented the rural development funds, which was a good idea, but it apparently failed because the academic staff was not involved in this (carrying out research and giving advice).</i>
MPR 29: 14	<i>We should start by identifying the major problems in certain areas before we proceed. What happens is that we carry out research on matters that do not impact on our life.</i>

The idea of doing simple and practical research seems to embrace the need to respond to the crisis context in which the world appears to be submerged, which, according to Groccia (2010), manifests itself through, among others, rising student tuition costs and decreasing both public funding and investments in HE. The justification for this point of view was advanced by a Head of Department who said the following:

<b>Respondent</b>	<b>Response</b>
MPR 8: 10	<i>I am convinced that the knowledge we produce here results from what we live and it is useful for the society in which we live. What we do here is inextricably linked to what we live. Lecturers should have many more opportunities if the society could understand that it needs us. What I feel mostly is that, the question is not a lack of money. I think that research should not be about classical issues, but about social practices that occur in day-to-day living. I feel that the society used to need our contribution, but it does not use us enough. And that society has funds to sponsor such research. I am talking for instance research concerned with whatever ... the government should recommend research carried out by the universities, rather than asking private institutions to do such research. Paying attention we observe that these institutions again hire university lecturers (who are then underpaid) to carry out such research. Society should reach a point in which it understands that universities are useful for solving society problems. What we expect from ministers is that they recommend universities to find solutions for the country's problems, but some ministers just come to hear what we are doing, clap their hands and go away.</i>



Within the present research context in which it is increasingly acknowledged the power of the group, community research is not longer an option. Research in HE has to proceed from individualistic approaches to adopting collaborative and collegial approaches (Zuber-Skerritt, 1997; Ferman, 2002). In this regard the semi-structured interview respondents stated that there should be the organisation of scientific groups to work as a division responsible for carrying out research, managing student research and delineating research lines. Below are sample responses framed within this category:

<b>Respondent</b>	<b>Response</b>
MPR 2: 5-7	<i>It is important that we create divisions that work with role models and idols. There must be an embryo within the system, to be linked with some research groups so that we can be involved in some research by ourselves ... We have to create conditions so that the project is managed here, the teams are here and include partners from other countries. Than we have a better environment, we can develop a thematic area and the lecturer himself even if is a PhD can improve his skills. He can be part of this scientific niche.</i>
MPR 26: 6	<i>This should be done by creating, within the faculties, a team that would be devoted to supporting lecturers in this matter. For instance, when some donors launch a call for proposals, there should be a team capable of organising and responding to such a call.</i>
MPR 27: 6	<i>We must provide conditions for the creation of scientific groups. In many universities this is the nucleus of development ... we never had the opportunity to promote the genesis of the scientific group, which is the soul of the university... which is in charge of a specific thematic ... Its performance indicators are the publications in peer-reviewed journals, its presentations in seminars and at international conferences.</i>
MPR 30: 5-7	<i>The full professor has to guide the research groups in his/her field ... There must be scientific discussion ... especially within the disciplines. This discussion must be focused by the head of such a discipline group ... there is strong research carried out by students both at the Bachelor's and Master's level.</i>

### **Theme 3: Integration of reflection within PD interventions carried out at the institution**

Critical reflection brings only immediate benefits to the individual lecturer, since he/she can stand outside his/her practice to see what he/she does in a wider perspective (Brookfield, 1995). However, working with others appears to be supportive since it can facilitate mutual learning and create space for deep and broad reflection. In working together with fellow, the lecturer finds out that he/she is not alone in the limitations and feelings he/she faces. Colleagues help one to learn more about practices, phenomena and about oneself (Glazer et al., 2004) and has the opportunity to pose challenging questions based on his/her experience and perspectives (Moon, 1999). Accordingly, some respondents indicated that evaluation meetings, seminars and discussions among lecturers carried out within their divisions contribute to encourage reflection, as the following samples answers show:

<b>Respondent</b>	<b>Response</b>
MPR 8: 9	<i>We usually have round table discussions about, for instance, the riots organised by the population.</i>
MPR 10:9	<i>With the recent reform we started to have a new pedagogical project, within which is included the concepts of seminars, debates, etc.</i>
MPR 14:14	<i>There are lecturer block meetings aimed at analysing what happened in previous blocks and thinking about how to overcome certain problems that occurred and capitalise on what went well.</i>
MPR 15: 12	<i>All blocks have to be evaluated: mid-term and end of module evaluation. Afterwards there is a group of lecturers who do the processing of the filled forms and by the end of the academic year there is a meeting between the responsible for academic issues and the president of the installing committee to discuss, according to parameters such as the quality of handouts, interaction with students, punctuality, lecture structure, etc. There is discussion of what could be done in order to improve in the following opportunities.</i>

The array of meetings mentioned by the respondents above appear to be conducive to the collection of the evidence of HE impact required from universities under the term *accountability* (Groccia, 2010; Zuber-Skerritt, 1997). Besides, such discussions represent the opportunity for academic staff to reflect critically on their lecturing practice, establishing the nexus between reflection and professional development (Glazer et al., 2004). They encourage collaborative relationships based on dialogue, communication and reflection (Groccia, 2010).

Short courses, especially when facilitated within situated and constructivist environments, lend themselves to moments of reflection, since as Moon (1999) says, many activities used in these courses encourage reflection. Moon further indicates to use reflection, within guidance of short courses, through initially focusing discussions on current behaviour and then proceeding to discussing how such behaviour in practice can be different. Accordingly some respondents indicated that short courses open the space for reflection. Of these contributions, the following three appear to be worth sharing:

<b>Respondent</b>	<b>Response</b>
MPR 25:3	<i>All of ours lecturers have attended the Centre for Academic Development courses. They find them very useful, they observe that what they usually did was not in accordance with the recommendations of the pedagogical principles.</i>
MPR 26: 20	<i>In fact, when we are invited to attend these short courses ... we find out that the course provides us with competences and skills that we did not realise we did not have – thus we feel the enthusiasm for the acquisition of new knowledge. It is like a book which suddenly reveals something interesting.</i>
MPR 27: 2	<i>The more consistent ones are provided by the CAD... This has been consistent experience throughout the years and the generations of lecturers who attended these courses showed to have gained from them.</i>

Research is deemed to surpass the reality mismatch through bringing practical and effective solutions. However, just importing ready-made solutions often does not seem to be effective. As Brookfield (1995) says, critically reflective lecturer researches his/her practice enough to know that experiences imported from outside rarely fit snugly into the contours of their context. Therefore, the lecturer has to question his/her working context to gather as much data as possible in order to scrutinise it in the pursuit of working solutions. Respondents indicate that being a member of scientific research group provides with challenging and enriching experiences, which require the individual to constantly frame and reframe his/her knowledge, beliefs, and attitudes. With the increased acceptance of the situated and social character of knowledge, working in groups is ever more recommended approach to achieving useful results in professional practice.

Working within a lecturing team allows the contribution of personal experience to colleagues' learning, it facilitates members' exploring the socially constructed nature of meaning and provides an environment of mutual support (Taylor, as quoted by Moon, 1999). Within group work, while listening about the colleagues critical events, one becomes aware that what seems to be one's own individual crisis is after all collectively experienced dilemmas (Brookfield, 1995). Sharing within groups opens lecturers' horizons to ideas and possibilities concerning solutions they can adopt towards transforming their practice. Moreover, group work provides space to have one's ideas, assumptions and habits challenged by others. This might take place through observation, comparison and the association of lecturers comparing their experiences to those of peers.

The idea of carrying out simple and applied research as conducive to occurrence of deep reflection, especially within a context of collaborative research was advanced by a number of respondents. Those respondents, however, acknowledged that such practice occurs in scanty fashion in Mozambique. Below are exemplars of such category.

Respondent	Response
MPR 26: 5	<i>The huge problem is that UEM is not producing knowledge ... Research has an advantage. The lecturer can read books, absorb what he/she as read and try to convey what he/she finds in the book, but this is not enough. How, for instance in education, students organise their studies, how they organise their working day, how do they read the material, what strategies do they use (at the post graduation level, e.g.). We know that there are such problems, but we do not do research that can solve them. I am not blaming the university at all. But I think that production of</i>

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	<i>knowledge should be more stimulated, because as soon as a person starts to do research he/she begins to learn more. And his/her learning about that issue/field is widened, and is more practical than theoretical and easily conveyed to students.</i>
MPR 27: 5	<i>This (scientific group) is for me the building-block of PD ... Without scientific groups we cannot attend events such as presenting at conferences, discussing in seminars, even the attendance of thematic seminars.</i>
MPR 30: 3	<i>Monthly, let us say, there could be meetings to discuss issues that are of interest to the subject group in terms of how we teach a certain concept, for example. Increasing the capacity and professional competences ... must happen within the groups of lecturers presenting the same subject matter.</i>

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The hypothetical questions posed above by MPR 26 are not per se action research questions. But they convey the respondent's awareness of the possibilities there are to advance students' performance through improving their organisation of studies or their working day. I envisage in such questions, the respondent notice to the possibility to solve, in a systematic way, curriculum embedded problems, in improving the lecturing practice (Zuber-Skerritt, 1997). This happens mainly with adoption of action research. In Brew (2010) words, it is a possibility to turn the challenges posed by academic practice into questions for investigation. Therefore, with advice or mentoring, he would probably rephrase his question to, "How do I improve my students' organisation competency?" or, "How do I improve my students' learning strategies?" Both these questions emerge to be as simple and practical as the respondent intended them to be. Paralleled to that position, Brew (2010) suggests that, for instance, a lecturer could depart from a complaint about workload to investigate how research and teaching goals could be fulfilled simultaneously. In this way, she advances, the scholarship of teaching would become the scholarship of academic practice.

Performance appraisal, when adequately employed, informs the lecturers about the aspects of one's practice that need improvement. It might identify and inform the lecturer about his/her shortcomings concerning elements such as learning opportunity preparation, class environment management, dominance of instructional and assessment strategies, willingness and availability to give additional support to students, among other skills (JEM, 2007). Performance appraisal should propagate accountability and professional development (Koster & Dengerink, 2008). Therefore they play a diagnostic role since there are instruments that appear to serve as auxiliary for those who have the responsibility of deciding which faculty members are to be promoted (Brookfield, 1995). Below are sample responses framed within this category:

<b>Respondent</b>	<b>Response</b>
MPR 4: 13	<i>Student assessment is already done within the implementation of the SADE.</i>
MPR 6: 11	<i>The lecturer assessment forms by students are well used.</i>
MPR 9: 7	<i>We usually employ student assessment</i>
MPR 12: 8	<i>The lecturers' annual performance appraisal instruments contain a form for students to give their opinion about lecturer performance.</i>
MPR 9: 8	<i>Within the SADE the lecturer is required to have a folder with the evidence of what he says (in self-assessment form) he did.</i>
MPR 12: 8	<i>The lecturers' annual performance appraisal instruments ... entail the lecturer self-assessment.</i>
MPR 28: 13	<i>While filling in the SADE instrument he has to present the evidence of his performance.</i>

As stated in the previous category, feedback from students is acknowledged as a significant tool to trigger lecturer reflection, since a number of conditions are provided. Within this study there were respondents who indicated that lecturers have informal conversations with students. These conversations appear to be a sub-type of a student feedback questionnaire. They provide the opportunity to collect the students' perspectives, attitudes, responses and feelings (Beaty, 1998). These elements trigger lecturer connections between own personal theory and practice, principles and behaviours (Walkington, Christensen & Kock, 2001). However, informal conversations require many more conditions than student feedback and encapsulate a series of risks. They require evidence of lecturer openness to criticism and the assurance that such a lecturer will not present vengeful behaviour. Even with such evidence there is always the fact that students are reluctant to be too honest with lecturers, since they have learned that it can backfire horribly (Brookfield, 1995). With regard to informal conversations with students, the following statements emerged:

<b>Respondent</b>	<b>Response</b>
MPR 5: 14	<i>Some lecturers ask students to give feedback on their lecturing.</i>
MPR 10: 13	<i>I ask students to talk about positive and negative aspects of my practice.</i>
MPR 14: 12	<i>By the end of the module, the lecturer asks students to give feedback on how it was organised. In general, together they assess the module facilitation.</i>
MPR 17: 9	<i>At the end of the module some lecturers ask students to give written or oral feedback on their teaching.</i>

While individual reflection is valuable, sharing one's experience with peers and having their support is conducive to learning beyond that of the individual lecturer's intrapersonal reflection (Walkington et al., 2001). Working in isolation might often result in operating in a vacuum, constantly doubling efforts rather than relying on the wealth of experience of fellows (Walkington et al., 2001). An experienced colleague, acting as a mentor, can be

coach, counsellor, facilitator and guardian at different moments, based on the need of the lecturer, acting as a mentee (Klasen & Clutterbuck, 2002). Since he/she brings different experience and perspectives, a peer can aid learning. He/she can as well be able to stand in students' shoes, imagining their reactions to alternative ways of acting, being an important focus for lecturers' reflection (Beaty, 1998). In regard to this issue I found that some semi-structured interview respondents indicated that within their divisions lecturers are engaged in peer-lecturing, peer-mentoring and class observations as one can see from the following sample responses:

<b>Respondent</b>	<b>Response</b>
MPR 5: 13	<i>Normally the courses are taught by two lecturers, who are supposed to observe each other and discuss the colleague's performance.</i>
MPR 9: 8	<i>The senior lecturer observes a junior lecturer's lesson. When a lecturer is being inducted to teaching in HE there is a senior lecturer observing and monitoring his performance.</i>
MPR 14: 10	<i>Another thing we do is to observe each other's lecture. Then we have meetings in order to give feedback, pointing out what was good and what needs to be improved.</i>
MPR 17: 10	<i>When we have two staff members lecturing the same module, they usually do mutual observation.</i>

According to Moon (1999), there should not be a distinction between reflective and non-reflective professionals. Rather, for her, the distinction should be between more and less reflective lecturers or more and less reflection, since lecturer (as adult) reflects to some extent. Wildman et al (1990) appear to corroborate with Moon, when they state that there are many teachers who exhibit a natural propensity to engage in reflection, although such reflection might be unintentional, unfocused and unsystematic. This very position seems to be echoed by the respondents who think that although occurring in unsystematic fashion, reflection is naturally framed within lecturer practice. I found this point of view among some respondents, as the two sample accounts below appear to express:

<b>Respondent</b>	<b>Response</b>
MPR 3:11	<i>There are conditions to implement reflective practice, but I don't think there is motivation.</i>
MPR 6: 10	<i>There is no self-criticism. Therefore we legitimise what others say about us.</i>
MPR 7: 14	<i>Very few lecturers engage in reflection.</i>
MPR 32: 11	<i>A lecturer must by instinct be reflective, must always know what he/she is doing and verify if he/she is doing his/her duties well. Afterwards, the reflective lecturer and assessment in general terms are very closed. A reflective lecturer assesses what he/she is doing and the results of that. When we now talk about the reflective lecturer as a new trend, it sounds strange for me because we have</i>



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*always lived like that. I cannot be teaching without thinking about how things are going on, if I am performing well or not. There has always been a need for a reflective lecturer. Therefore the assessment of one's own work can be framed according three levels: student, process, and performance assessment. And this is carried out by the reflective lecturer.*

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In connection with such natural and unsystematic occurrence of reflection, Moon (1999) states that sometimes we engage in reflection once we are provided with a purpose for reflection, while at other times we do so because we decide to reflect on something for our own reasons. Apart from discussions concerning purpose, content, and motivation to reflect, it is clear that for reflection to occur, a set of conditions should be provided, including a supportive environment, such as collaboration culture within the division and involvement in decision-making (Calderheads & Gates, 1993; Tann, 1993). These and others may be the conditions that some respondents might be feeling to be missing within their contexts.

Some of the categories that emerged from the *theme Integration of reflection within PD interventions* carried out at the institution appeared to be corroborated by findings from a questionnaire I administered. Therefore, having asked lecturers about the frequency with which they adopt different elements of reflection, I found the array of responses that I present in Table B3 (See appendix B). These show that the majority of the respondents analyse their classes with a co-lecturer (66%). This category was mentioned by semi-structured interview respondents and I can explain its high occurrence by the fact that in many universities, since the academic staff is mostly composed of young lecturers, there used to be a senior lecturer monitoring the process of integration of the new staff within academic life. The second most adopted tool for reflection is keeping record of critical incidents (51%). On the reverse side the least employed elements are video-recording own classes (4%), to ask a colleague to observe one's classes and give feedback on it (27%), developing a professional teaching portfolio (35%) and asking students' written comments about own classes (37%). These tools were not mentioned by semi-structured interview respondents. It might have to do with the fact that their adoption is more at the individual level, while I gathered the semi-structured interview data from senior lecturers and lecturers occupying management positions, who might have presented information from the formal perspective of the organisation or division. Besides, methodologically if I had asked them about the occurrence of such tools as keeping record of critical incidents and video-recording own classes, they probably would have considered their application.

Reflection is elicited by the occurrence of a situation of uncertainty or surprise that challenges the practitioner to think and act through not routinely procedures (Mezirow, 1990). It entails either a pause to see how one is going to do in the pursuit of the best performance or may involve an ex post facto reassessment, looking back to prior learning. In line with this, through questionnaires, I asked lecturers what they do after they have faced a challenge in their classes. Data presented in Table B4 (See appendix B) indicates that lecturers indicated reading related literature for comparison (85%), engagement in on-the-spot talk to a trusted colleague (73%) and/or presenting in regular meetings they have with a fixed peer (65%). Although reading was not mentioned by semi-structured interview respondents, it is clearly apparent that it is one of the ancient ways lecturers use for reflection. Engagement in on-the-spot talk with a trusted colleague and presenting in regular meetings they have with a fixed peer are matched with seminars and peer-lecturing and peer-mentoring as indicated by semi-structured interview respondents. Since they did not respond positively, what they appear to do least in this regard is to document reflections in a professional teaching journal for later analysis (41%). This tool for reflection does not appear within the categories of semi-structured interview data for the same reasons I advanced in the previous paragraph.

#### **Theme 4: measures to increase reflection**

Semi-structured interview respondents indicated that the HE system should create a new or explore the potential of the existing lecturer performance appraisal system (SFQ, self-assessment and folder of evidence). A system of assessing teaching performance, including assessment by students, self and the head of the department contributes to achieving internal and external accountability (Zuber-Skerritt, 1997). Moreover, its component parts, such as student assessment and self-assessment, appear to be powerful in promoting the lecturer reflection on his/her practice. However, Brookfield (1995) warns against the danger of using student feedback as an index of student satisfaction, leaving the lecturers unaware of the dynamics and rhythms of their learning. Moreover, Brookfield points out the intrinsic problem of self-assessment that he associates with denial and distortion in order to produce an image of a good lecturer. The following are some of the statements made by respondents within this category:

<b>Respondent</b>	<b>Response</b>
MPR 12: 7	<i>The lecturers' yearly appraisal instruments contain a form for students to give</i>



	<i>their opinion about lecturer performance. The same tool considers the lecturer self-assessment. But this instrument is not well explored as a reflexive tool. It should be better explored.</i>
MPR 13: 12	<i>Student assessment is tough as well: some students may not like certain lecturers or may fear the lecturers' reaction. Therefore the likelihood of biased assessment is very high ... we should use properly the instruments available.</i>
MPR 27: 9	<i>Within the university performance appraisal system there is an instrument which is the lecturer assessment by the student. I think that there is a lot to be done in order to improve this tool.</i>

Educational issues and concerns are both individual and social matters that require lecturers' collective and common action to be satisfactorily resolved (Carr & Kemmis, 1986). Having lecturers devoted to discuss freely and openly their understandings of educational theories and experiences of lecturing is one way of promoting space for empowerment. Gaining awareness of colleagues' views, within dialogue, provides the lecturer with a more attuned idea of what he/she has to improve within his/her practice. It informs the lecturer about the need to engage in deep and broad analysis of usually taken-for-granted specific issues of one's practice. Therefore debate occurring within sections of subject matter groups brings together the lecturers for the purpose of their own enlightenment and creates a model for a rational and democratic social order (Carr & Kemmis, 1986). Aligned with this perspective, other respondents advanced the point of view that we should promote more debate at the section or subject group level. Two of these respondents said that:

<b>Respondent</b>	<b>Response</b>
MPR 1: 8	<i>... introducing and increasing scientific journeys, debates – where one lecturer introduces a theme and it is discussed, meetings requested by junior lecturers, and meetings for discussing supervision of end of course dissertations.</i>
MPR 30: 4	<i>This must happen within the groups of lecturers of the same subject matter.</i>

The kind of reflection that should take place with involvement of others – linked for instance to student feedback and peer assessment – implies certain conditions. According to Brookfield (1995), such conditions include moral and political culture typified by openness to diverse perspectives irrespective of seniority or status of the person who advances it. In connection with this, the respondents suggested that there should be promotion of lecturer readiness to see criticism as enriching:

<b>Respondent</b>	<b>Response</b>
MPR 6: 9	<i>Lecturers must be ready to hear criticisms made by others.</i>
MPR 7: 10	<i>There is fear culture: students are afraid of lecturers' 'prosecution', while</i>

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	<i>lecturers are afraid of criticism. They have to see criticism not as personal attack.</i>
MPR 19: 8	<i>Student feedback or class observation is not common to many lecturers who still have to deal with this situation.</i>

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**Summary: integration of reflection within existing PD interventions in the Mozambican context of Higher Education**

Semi-structured interview data shows that concerning guidelines for the promotion of professional development, Mozambican HEIs feature a two-patterned situation. On the one hand there are institutions where there are not clearly established guidelines and/ regulations and on the other hand, there are institutions with formally established regulations and guidelines, but these are not functional. The main reason for such a lack of functionality lies in the shortage of financial resources to support the PD activities and the reliance on opportunities offered to the institution by donor or foreign partner who supports capacity building activities. The consequence of these two situations is institution turmoil, where the smartest appear to thrive, since they are fast to get opportunities. This situation is likely to be solved or at least minimised, since the Strategic plan for HE teachers' training (Ministério da Educação, 2009b) determines that all HEIs should conceive a detailed training plan, which should be aligned with the country, institution and individual lecturer's needs.

With regard to professional development, from semi-structured interview respondents I found the emergence of five kinds of intervention that feature HE in Mozambique, namely the pursuit of post-graduate studies, short-courses, participation in scientific events, the scholarship of teaching and scientific research. Questionnaire respondents indicated to attend scientific events, short courses, mentoring, carrying out scientific research, carrying out joint activity (ies) with other institution(s) and attending meetings.

**Pursuit of post-graduate studies**

The first idea that comes to mind when we talk about PD is the pursuit of post-graduate studies. This makes sense when I consider that the Mozambican context of HE is characterised by a high prevalence of Bachelor's (Licenciatura) degrees. However, since most post-graduate studies require the individual to undertake research, these represent an opportunity for the lecturer to deepen his/her understanding of relevant issues within his/her field of specialisation or action. This might be conducive to his/her improvements either in facilitating learning or in other activities that are inherent to his/her professional practice.

### **Participation in short-courses**

Short courses are the second vehicle for the promotion of lecturers' professional development in Mozambique. Hence 69% of the respondents indicated to have attended short courses about teaching methods, student assessment, etc. as well as specific short-courses relevant to their field of teaching. The prominence of short-courses is associated with two sets of factors. Firstly, there are not in Mozambique equivalents for the Postgraduate Certificate in Higher Education (PGCHE). Secondly, the Mozambican sub-system of HE is steadily growing and expanding, which implies continuous recruitment of young graduates, most of them without any experience of facilitating learning. Therefore short-courses appear to be the main way to provide them with craft knowledge in this field.

### **Participation in scientific events**

Lecturers' participation in scientific events, such as conferences, seminars and workshops appears to be a highly effective vehicle for professional development. It brings many benefits such as the possibility to confirm the adequacy of one's way of performing, identifying gaps within one's practice and, perhaps, finding solutions for enduring problems, among others. 85% of the questionnaire respondents indicated to have attended to scientific events. However, semi-structured interview respondents indicated that lecturers' participation in such events ranges from low to moderate. There is an apparent contradiction here, which I might explain on methodological grounds. Firstly, it might happen that most of the sample lecturers for questionnaires happen to be actively involved in scientific events. Secondly, the semi-structured interview respondents might have been giving their global perception of institution participation, while the questionnaire might have been giving their personal information.

### **The scholarship of teaching**

Universities are not islands isolated from the whole of society. They must be integrated. This process might occur, among others, by means of exchange of information, critical analysis the HEI might carry on the problems occurring in such society, as well as assisting the society to find solutions for problems. I recall that Brew (2010) conceives scholarship within an array of meanings, including the meticulousness and rigour associated with carrying out good academic work and reporting, i.e. preparation for research, the reading and groundwork, creating, integrating, and disseminating new knowledge. Although the concept

of scholarship is rather encompassing, I understood from semi-structured interview respondents that such meticulousness and rigour can be developed through continuous engagement, through dialogue, communication and reflection with the society. This would happen for instance, through invitation of the academic staff in discussion of issues of national concern as opportunity for networking, debate and exchange. These are situations that require from the lecturer the development of scholarly attitudes associated with good academic work.

### **Scientific research within HEIs**

Semi-structured interview respondents agreed that involvement in scientific research, either as an individual researcher/member of a team or as a student supervisor is conducive to professional development. 62% of the questionnaire respondents indicated that they had previously carried out scientific research. Once again I found a certain imbalance with semi-structured interview respondents. Therefore these respondents indicated, due among others, to the always mentioned lack of financial support, three perspectives. There are those who affirm that research is scarce, others contend that there occurs reasonable research, while a third group thinks that there is much research being done as a request of private institutions and there are lecturers who are strongly and seriously devoted to doing research, although it is not available in publications.

Since they are aware of the potential of research, either for professional development or for the institution's/country's growth, the respondents indicated that certain measures should be adopted in order to increase research undertaken in Mozambique. These include attuning the appraisal and promotion system in order to emphasise research and publication, a part of rewarding it through subsidies and salaries; provision of conditions such as training staff, transparent open fund grants for research, furnishing libraries with books and journals, and the supply of sharable equipments, and encouraging lecturers to concentrate on doing simple and applicable research to solve issues within the national agenda.

### **Integration of reflection within PD interventions carried out at the institution.**

Integration of reflection within PD interventions is the essence of the sub-question addressed in this section. It should be kept in mind that semi-structured interview and questionnaire respondents provided, not contradictory, but somehow different and to some

extent complementary responses. Therefore, in the semi-structured interviews I found that seminars and discussion meetings, short-courses, research group work, performance appraisal systems and peer lecturing and mentoring encourage reflection within the institutions. Another group of respondents indicated that inherently reflection occurs naturally within the lecturing practice. From the questionnaires on innovative practice I found that lecturers adopt tools for reflection that include co-lecturing, keeping record of critical incidents, developing a professional teaching portfolio, class observation and feedback, students' feedback, video-recording, reading literature, peer meetings and professional teaching journals, among others.

Since the respondents recognised that lecturer reflection is absolutely necessary, they advanced that certain measures should be adopted in order to increase it. Such measures include the need to create a new or explore the potential of the existing lecturer performance appraisal system (SFQ, self-assessment and folder of evidence) in order to promote reflection. The other measure implies the promotion of more debate at the section or subject group level. Another measure appears to lay the ground for lecturer engagement in deep and critical reflection. This implies the need to promote lecturer readiness to regard criticism as enriching. This measure is sustained by the observation that to engage in reflection, especially those forms of reflection elicited by others views, requires willingness to hear criticism and see one's practice as requiring improvement.

#### **4.4 How can I (we) encourage critical reflection in HEIs?**

To answer the research question, *How can I (we) encourage critical reflection in HEI?* I facilitated learningshops and mentoring sessions as an experimental professional development activity. Meanwhile, I collected data through video-recording, audio-recording and photographing.

The learningshops and mentoring sessions that I facilitated are the essence of the action research I carried out within this study. It is composed of one main spiral of two cycles and five spin-off spirals of action research carried out by my fellow lecturers, which I designate as LPLs. Within the next lines I show how we (the LPLs and I) managed to approach action research as a collaborative, critical and self-critical inquiry (Zuber-Skerritt, 1996:3) in our transformative practice. Within such transformative practice I challenged the LPL to adopt

learning styles flexibility (LSF) as the innovation that would contribute to improving students' learning. In this way we would be living in the direction of the democratic values of freedom, equality, and collaboration, as I find both LSF and action research to be their catalysts.

This study is framed by constructivist theory and in practice I have noticed the emergence of a multi-layered constructivism. The inner layer comprises the constructivist students' learning as facilitated by the LPLs. This process is not subject to my analysis. Rather it is object of LPLs' reflections as part of their action research. However, I describe and present this learning process as evidence of the engagement of LPLs in implementing the lessons from this experimental professional development.

The middle layer is the LPLs' constructive professional learning, which occurred mainly in the learningshops, mentoring sessions and, thus, within their action research processes. I describe and analyse this layer of constructivism as encapsulated within the case studies of individual LPLs' action research.

The outer layer entails my constructivist learning about how I facilitate learningshops and mentor my fellow lecturers. In essence my constructivist learning appears to embrace similar transformations as the LPLs' constructivist learning, since they are guided by the implementation of LSF within the practice of facilitating learning and mentoring. Therefore, in my constructivist learning I intend to construct a better understanding of how, as facilitator of learning, I can approach my fellow lecturers' professional learning. In turn, my fellow lecturers seek to understand their efforts to facilitate students' learning with the focus on learning styles or different modes of thinking.

Since LSF is an innovative way of facilitating learning, as part of my baseline study, through questionnaires on innovative practice, I sought to find the extent to which lecturers adopt this holistic strategy of facilitating student learning. In this regard I asked lecturers how often they accommodate and, concomitantly, promote different student descriptors. Looking at the frequencies and percentages of lecturers' responses to this question as I present in Table B5 (See Appendix B) most lecturers responded positively to the promotion of critical thinking (83%), activities that involve following precise procedures (70%) and examining parts of the problem when taking a decision (62%). Looking at the whole-brain model and

guidelines for promotion of LSF, I find that these activities are linked to the left hemisphere, namely the A and B quadrants.

The least preferred activities, as indicated by lecturers not responding positively, include a preference for activities that involve music (7%), guidance by intuition when taking decisions (22%) and guidance by emotions and feelings such as happiness and surprise, etc. (24%). On looking again at the whole-brain model and guidelines for the promotion of LSF, I find that these activities are linked to the right hemisphere (C and D quadrants).

Different strategies of facilitating learning are associated with the promotion of activities directed at the promotion of specific brain quadrants. Based on this, there was a question aimed at finding out the extent to which the respondents employed such techniques.

Respondents' rate of implementing different methods of facilitating learning (in Table B6, Appendix B) shows that the activities to which the lecturers responded positively were group discussions (87%), the use of textbooks and manuals (86%), lectures (77%) and action-orientated activities (77%). The activities to which they did not respond positively were music and storytelling (8%), role-play (18%) and field trips (31%). Observing these frequencies, I found that apart from discussions (C quadrant), the most frequently employed activities are linked to the promotion of the A and B quadrants. Conversely the least employed are associated with the promotion of the C and D quadrants.

With the respondents' effort to develop diverse descriptors in students while facilitating learning, as Table B7 (See Appendix B) shows, I found it remarkable that only one descriptor appeared to be very modestly employed, ranked below 50%. This is the use of non-verbal communication indicated to be employed by 33% of the respondents. The lecturers responded positively concerning the remaining descriptors. The descriptor *to stand in someone's shoes* (empathy) was positively employed by more than 65% of the respondents. The remaining descriptors were positively employed by more than 72% of the respondents.

Certain data indicate that lecturers address all descriptors defined by the whole brain model. Besides, I have found that most of the lecturers concentrated more on efforts related to the promotion of left brain-related activities, including critical thinking, activities that involve

following precise procedures, problem analysis, using textbooks and manuals, lectures, and action-orientated activities. They did this in detriment of right brain-related activities such as activities that involve music, guidance by intuition when making decisions, guidance by emotions and feelings, storytelling, role-play and field trips.

Although these results could not be generalised, since I limited my analysis to descriptive statistics, this was the scenery I had in mind when I thought of embracing LSF as the innovation to adopt within this experimental professional development intervention.

#### **4.5 The action research process**

I recall that within this study, working on the generative transformative model (McNiff, 1988) and the visionary action research model designed by Du Toit (2010) from the work of Zuber-Skerritt and McNiff, I propagated the visionary generative action research model, depicted in figure 4.4. Within this model I seek to convey the idea of action research within the UEM specific context, which is characterised by the intention of implementing an innovative idea in order to transform our teaching practice.

Such a context is further illuminated by a vision of promoting excellence in facilitating learning and research. Pursuing the implementation of such vision, I adopted asset-based action research, typified by being driven by an innovative idea rather than a problem or concern. Besides, being generative, it opens space for the emergence of other action research spirals. However, these are elicited from the beginning of the process. Therefore I visualise it as being pro-active, since, instead of having the LPLs react to emerging problems along the study, I challenged them to adopt the transformation of their practices (action research in implementing LSF) at the beginning of the process.



PROFESSIONAL PRACTICE ACTION RESEARCH PROCESS

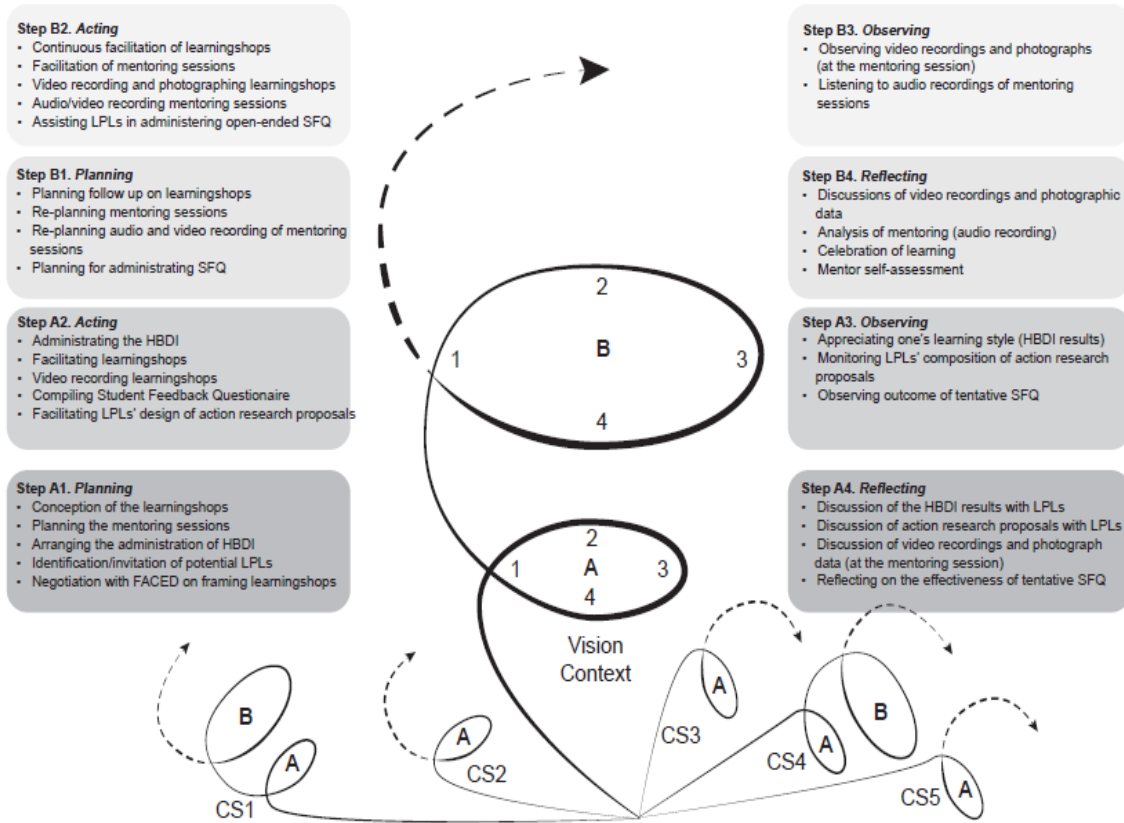


Figure 4.4: Visionary generative action research model

In table 4.3, I present the summary of each step of the five case studies that are represented through spirals CS1, CS2, CS3, CS4 and CS5. In section 5.7, I present such case studies extensively.

Table 4.3: Summary of LPLs’ action research spirals

Case study	Step A1. Planning	Step A2. Action	Step A3. Observation	Step A4. Reflection
CS1: LPL1 (Cycle A)	<ul style="list-style-type: none"> <li>- Planning the learning opportunity.</li> <li>- Assigning the task to the student.</li> <li>- Assisting the student in preparation of the material and of the presentation.</li> <li>- Organising own readings.</li> </ul>	<ul style="list-style-type: none"> <li>- Facilitating the learning opportunity: coordinating the student presentation and moderating the class discussion.</li> <li>- Video- recording and photographing the learning opportunity.</li> </ul>	<ul style="list-style-type: none"> <li>- Employing the observation sheet to self-assess the performance.</li> <li>- Watching video-recording of the learning opportunity.</li> <li>- Selecting photographic evidence.</li> </ul>	<ul style="list-style-type: none"> <li>- Analysing video record and photography of the learning opportunity.</li> <li>- Discussion during the mentoring session.</li> <li>- Sharing in the learningshops.</li> <li>- Reflecting on the outcome of the</li> </ul>

				observation sheet.
CS1: LPL1 (Cycle B)	<ul style="list-style-type: none"> <li>- Defining individual or group presentation.</li> <li>- Assigning the tasks or themes.</li> <li>- Selecting and indicating useful materials for groundwork.</li> <li>- Carrying out additional readings.</li> </ul>	<ul style="list-style-type: none"> <li>- Brief overview of the theme.</li> <li>- Group's presentation and discussion.</li> <li>- Video-recording and photographing the learning opportunity.</li> <li>- Administration of SFQ.</li> </ul>	<ul style="list-style-type: none"> <li>- Watching video-recording of the learning opportunity.</li> <li>- Selecting photographic evidence.</li> <li>- Appreciating the SFQ.</li> </ul>	<ul style="list-style-type: none"> <li>- Analysing video-recording and photographs of the learning opportunity.</li> <li>- Discussing the mentoring session.</li> <li>- Analysing open-ended SFQ.</li> <li>- Sharing in the learningshops.</li> </ul>
CS2: LPL2 (Cycle A)	<ul style="list-style-type: none"> <li>- Preparing the learning opportunity.</li> <li>- Composing small groups.</li> <li>- Carrying out additional readings (about the method and LSF).</li> <li>- Organising learning materials (flipchart paper and markers).</li> </ul>	<ul style="list-style-type: none"> <li>- Facilitating the learning opportunity: monitoring the groups' activities and moderating the class discussion.</li> <li>- Video-recording and photographing the learning opportunity.</li> </ul>	<ul style="list-style-type: none"> <li>- Employing the observation sheet to self-assess the performance.</li> <li>- Watching video-recording of the learning opportunity.</li> <li>- Selecting photographic evidence.</li> </ul>	<ul style="list-style-type: none"> <li>- Analysing video-recording and photographs of the learning opportunity.</li> <li>- Discussion during the mentoring session.</li> <li>- Sharing in the learningshops.</li> <li>- Self-assessment through observation sheet.</li> </ul>
CS2: LPL2 (Cycle B)	<ul style="list-style-type: none"> <li>- Conceiving a detailed programme and schedule of visit to a primary school.</li> <li>- Composing small groups and assigning the tasks.</li> <li>- Defining the ground for peer-assessment.</li> <li>- Conceiving of assessment grid.</li> </ul>	<ul style="list-style-type: none"> <li>- Monitoring students' class observation in primary school.</li> <li>- Coaching students' composing and presenting the reports.</li> <li>- Video-recording and photographing the learning opportunity.</li> <li>- Administering the open ended SFQ.</li> </ul>	<ul style="list-style-type: none"> <li>- Watching video-recording of the learning opportunity.</li> <li>- Observing photographic evidence.</li> <li>- Appreciating the SFQ.</li> <li>- Appreciating peer assessment results.</li> </ul>	<ul style="list-style-type: none"> <li>- Analysing video recording and photographs of the learning opportunity.</li> <li>- Discussion during the mentoring session.</li> <li>- Analysing open-ended SFQ.</li> <li>- Sharing in the learningshops.</li> <li>- Reflecting on peer assessment results.</li> </ul>
CS3: LPL3	<ul style="list-style-type: none"> <li>- Carrying out reading on LSF.</li> <li>- Preparing and handing reading materials to students.</li> <li>- Searching new texts and book chapters.</li> </ul>	<ul style="list-style-type: none"> <li>- Facilitating the learning opportunity: short lecture, group work and discussion.</li> <li>- Video-recording and photographing the learning opportunity.</li> </ul>	<ul style="list-style-type: none"> <li>- Watching video-recording of the learning opportunity.</li> <li>- Observing photographic evidence.</li> </ul>	<ul style="list-style-type: none"> <li>- Analysing video-recording and photographs of the learning opportunity.</li> <li>- Discussion at the mentoring session.</li> <li>- Sharing in the learningshops.</li> </ul>
CS4: LPL4 (Cycle A)	<ul style="list-style-type: none"> <li>- Conceiving the students' practical work;</li> <li>- Composing groups and assigning the group tasks.</li> <li>- Providing learning materials and additional references to students.</li> <li>- Carrying out reading on assessment and LSF.</li> </ul>	<ul style="list-style-type: none"> <li>- Facilitating the learning opportunity: monitoring and coaching the groups;</li> <li>- Video-recording and photographing the learning opportunity.</li> </ul>	<ul style="list-style-type: none"> <li>- Watching video-recording of the learning opportunity</li> <li>- Observing photographic data.</li> <li>- Employing the observation sheet to self-assess the performance.</li> </ul>	<ul style="list-style-type: none"> <li>- Analysing video-recording and photography of the learning opportunity.</li> <li>- Discussion during the mentoring session.</li> <li>- Sharing in the learningshops.</li> <li>- Reflecting on the outcome of observation sheet.</li> </ul>
CS4: LPL4 (Cycle B)	<ul style="list-style-type: none"> <li>- Composing the groups and assigning tasks.</li> <li>- Providing reading material.</li> <li>- Carrying out reading and preparing summaries.</li> </ul>	<ul style="list-style-type: none"> <li>- Coordinating student presentations and discussion.</li> <li>- Administering open ended SFQ.</li> <li>- Video-recording and photographing the learning opportunity.</li> </ul>	<ul style="list-style-type: none"> <li>- Watching video-recording of the learning opportunity.</li> <li>- Observing photographic data.</li> <li>- Employing the observation sheet</li> </ul>	<ul style="list-style-type: none"> <li>- Analysing video-recording and photographs of the learning opportunity.</li> <li>- Discussion during the mentoring session.</li> <li>- Sharing in the</li> </ul>

			to self-assess the performance.	learningshops. - Reflecting on the outcome of observation sheet.
CS5: LPL5	<ul style="list-style-type: none"> <li>- Preparing the learning opportunity.</li> <li>- Conceiving an imaginary case to be discussed.</li> <li>- Carrying out reading on motivation.</li> <li>- Preparing PowerPoint presentation.</li> </ul>	<ul style="list-style-type: none"> <li>- Presenting and discussing the hypothetical case.</li> <li>- Systematising or summarising the learning opportunity topic.</li> <li>- Video-recording the learning opportunity.</li> </ul>	<ul style="list-style-type: none"> <li>- Watching video-recording of the learning opportunity.</li> </ul>	<ul style="list-style-type: none"> <li>- Analysing video-recording of the learning opportunity.</li> <li>- Discussion during the mentoring session.</li> <li>- Sharing in the learningshops.</li> </ul>

#### 4.5.1 My action research cycle A

##### *Step A1: Planning*

This step entails a variety of activities. I planned the learningshops, defined their duration, and I idealised the sessions' content and strategies. Besides, I identified and invited all potential learningshop participants, who had to give their acceptance and written informed consent, both to attend and have the visuals published. While designing the learningshops, I considered van Halen-Farber (1997) advise for the need to promote lecturers participating in the learningshops (LPLs) evolvement from seeing themselves as passive recipients to active, rational, emotional, intuitive, and decision-making professional learners. Still according to this scholar, since I was designing this study around the central concepts of critical reflection and transformative learning, my primary objective was to encourage the LPLs increased involvement as researchers of their own learning. Hence, I considered the need to promote their freedom, collaboration, and equality of opportunities. In this way I was pursuing to provide them the possibility to construct a personal account of their learning situation from their own point of view as the central characters (Loughran, 2002).

I also planned the mentoring sessions, which were closely linked to the learningshops. In idealising these sessions, I was aware that central to that process was the recognition of the important role of trust in constructing personal knowledge, and disclosing personal responsibility and voice. That is van Halen-Farber advice who further contends that reflective practice lead to transformative action only in environment of trust. The mentoring sessions were opportunities for LPLs to critically reflect on their efforts to implement LSF within their practice. I planned all the sessions to involve only me and the LPL whose learning opportunity was to be analysed. Therefore, I planned that our discussions, within the sessions, were going to revolve around the what, how, and the why found in the learning opportunity. In this step I also planned the administration of the HBDI through inquiring

about the conditions for administration and scoring the test, and considering the logistical conditions for its application.

### *Step A2: Acting*

Action is deliberate, controlled, aim-orientated but also backward-looking to planning for its rationale (Zuber-Skerritt, 1997). Accordingly this step included carrying out learningshops, which were opportunities to share the innovative ideas (LSF and action research), to critically reflect on our practices, conceive and discuss action research proposals and get feedback from peers. Besides, they were opportunities for me to collect data through video-recording the sessions. The other activity I carried out within this step, as part of the learningshop, was the design of the open-ended LSF Student Feedback Questionnaire.

In this step I proceeded to administering the HBDI to LPLs. One of the assumptions of LSF is that the lecturer, in order to facilitate a holistic learning opportunity, must be aware of his/her learning style of brain profile. Such awareness, associated with metalearning, is conducive to the adoption of lecturing practices that imply working within the preferred quadrants and out of one's comfort zone. Therefore there was a need to administer the HBDI to promote LPL acquaintance with one's own profile. LPLs filled in online versions of the HBDI, which was scored at the Ned Herrmann International Group and results returned both in electronic format and printed materials.

The more practical (B quadrant), creative and integrative (D quadrant) activity within this step was the facilitation of LPL's design of action research proposals. Therefore, after introducing LPLs to action research as a process for academic professional development, I invited them to conceive their asset-based action research proposals which they were going to implement during the whole process of adopting transformation within their practice. This activity was carried out in groups, what implied collaboration. And since LPLs could design the proposals according to their interests, I find here accommodation of freedom and equality of opportunity. In this way, following Budge and Clarke (2012), I was foreseeing creative possibilities and stimulating an environment associated with emotions such as risk and failure, and which requires speculation, imagination, courage and determination. Approaching professional development as an artistic activity, where envisaging represents the core (Budge & Clarke, 2012), I was challenging the LPLs to explore new ideas and

possibilities, to expand their horizons, observe theirs and others practices, to intuit, engage in transforming and persist when facing barriers.

The proposals were presented and discussed (C quadrant) in plenary sessions and there was space for other LPLs and me to provide feedback so that improvement should be made. Therefore, collaboration was in motion. Equally within the learningshops I facilitated the compilation of a tentative closed-ended Student Feedback Questionnaire (SFQ). This questionnaire was supposed to be whole-brain informed with the aim of gauging the extent to which the LPL had succeeded in implementing LSF within the learning opportunity. I will extensively explain all these activities in the section presenting the learningshop results.

### *Step A3: Observing*

Observation has the function of documenting the action process, the effects of intended and unintended action, the circumstances and the constraints on action and the way these affect action (Zuber-Skerritt, 1997). This step consisted of three activities. Firstly I provided the LPLs with the HBDI results after the scoring and reports had been compiled at the Herrmann International Office. HBDI results appeared to be the knowledge they need to illuminate their practice, since it represented a first-contact with information or prediction about the way they approach their working and learning experiences. Here I gave them opportunity to have first-hand contact with his/her profile and get the preliminary ideas it conveyed.

I monitored the LPL's process of composing and/or improving their action research proposals. As I explained in the acting step, LPLs presented their action research proposals and got feedback from other LPLs and me in the plenary session. Based on such feedback they had to improve the proposals. In this way we were constructing meaning as an individual process and personal responsibility based on a social process of co-construction of meaning and sharing meaning (Gravett, 2005). Therefore, based on the feedback, they had to do some improvements including, for instance, attuning the questions to be action research-framed, to incorporate elements of LSF, and so forth.

Finally I observed the draft of the tentative whole-brain student feedback questionnaire (with items suggested by LPLs). The idea of the SFQ was to gather information concerning the

extent to which the learning opportunity matched all the students' learning styles (LSF) and to gather input for LPL reflection conducive to improving the following learning opportunities design in order to address LSF. Besides, the SFQ would provide students with their different learning styles with a sense of being valued by lecturers, in connection with promotion of ownership of learning and reflective learning, features that are present in LSF. Accordingly I proceeded to observation of the resulting SFQ, having in mind determining how effective the instrument would be to assess the implementation of LSF by LPLs.

#### *Step A4: Reflecting*

Reflection is retrospective. It recalls action as it has been recorded in observation (Zuber-Skerritt, 1997). Five activities took place in this step as related to actions carried out during the previous steps. The first activity was the discussion of video-recordings and photographic findings, both in learningshops and in individual mentoring sessions (between me and the LPL). LPLs made significant and constructive observations of their practice, as I convey it in the case studies in the next sections. The second was the space for LPLs to comment on the outcome of their HBDI profiles. I explained that awareness of one learning style and contact with the printed material was not an end in itself; rather it was a moment for one to think about the challenges associated, namely the need to develop one's avoidances. For instance, when the lecturer finds that according to his/her profile descriptors such as spatial, imaginative, creative are part of his/her avoidances, it means that he/she has to work in order to develop these dimensions. Hence, I find LSF associated with metalearning, since it implies learning about one's learning and highlights the fact that the challenges, burdens and rewards of learning lie with the lecturer-as-learner (Du Toit, 2008).

The third moment of this step was composed of reflective discussions I had with LPLs during the mentoring sessions. Within such sessions we watched and discussed the video-recording of the learning opportunities facilitated by LPLs. The intent was to hear from the LPL the extent to which he/she had been successful in implementing LSF. It was an opportunity for self-assessment based on the video-recording. Personally I felt empowered by the LPLs' commitment to engage in this venture, which was contributing to promoting not only the students' full potential (through implementing LSF) but also to enabling the lecturers to become lifelong professional learners (engaging in critical reflection and adhering to

action research). I realised that my effort was far-reaching since it was beyond imparting technical knowledge, which sometimes is not aligned with lecturer classroom practice.

The fourth moment entailed the analysis of the tentative close-ended student feedback questionnaire (SFQ). In this regard I observed that the items proposed by LPL that I had compiled did not appear to be an effective LSF instrument. My intention when I planned for the conception of this SFQ was that the LPLs should think and suggest items to assess the extent to which the learning opportunities would address the whole brain. For instance, I expected the inclusion of items such as the learning opportunity provided space for logical problem-solving (A quadrant), for implementation of ideas (B quadrant), for expressing ideas (C quadrant), and for coming up with innovative ideas. Instead, the LPLs appeared still to be tied to the left brain, since most if not all the items they included were concerned with this hemisphere. Therefore, in discussion with the LPLs we concluded that an open-ended SFQ would be more adequate. It would help identify items that later could compose a closed-ended SFQ. The main lesson I learnt from this particular experience is that lecturers could not attain such transformation in attitudes and behaviour in four learningshop sessions. I had to bear in mind that the process was going to be enduring and as De Boer and Van den Berg (2001) say, there would be moments where LPLs would experience bewilderment, uncertainty about their ability to adopt the innovation, loss of control of the process of facilitating learning, and the need to redefine their intent or purpose of teaching.

The last moment consisted on my reflections on my learning process as result of carrying out this action research. In the next paragraphs I present the results of such reflections.

The findings in relation to cycle A of my action research indicate that my practice of facilitating my fellow lecturers' learning was appropriate to the principles of LSF, constructive and situated professional learning, and evidence-based practice. In adopting different strategies of facilitation I was adhering to the principles of LSF. Through having the LPLs working together within the learningshops we were composing a learning community where all were involved in one another's learning through engagement in an environment of equal status, professional dialogue and reduced expert-novice hierarchies (Le Cornu, 2005).



Providing LPLs with the opportunity to compose their own action research proposals reflecting on their problems or innovative ideas, I was promoting ownership of learning, placing myself as co-learner and the whole group as composed by co-constructors of our professional knowledge. In this way, I increasingly learned to live according to values of collaboration, equality, and freedom. The first steps of evidence-based practice emerged as associated with the fact that all the experience had been informed by expert knowledge. But in order not to take such knowledge for granted, we were adopting to generate our own evidence, which was going to be validated through critical reflection in which we were going to be engaged within a community of peers (Mann, 2003). In this way I was on the track to put to work this multi-layered constructivist experimental PD intervention.

The other significant lesson I extracted from this cycle, as facilitator of learning, was what I can define as differentiated learning. With this concept I intend to convey the idea that not every LPL could learn the same think even when they are exposed to the same learning environment and learning opportunities. Each LPL constructed his/her own meaning and developed his/her own theory. The explanation for this occurrence might be, among others, one of the principles of andragogy, according to which adults learn what is relevant and useful to their daily life (Knowles, 1996). Therefore, throughout the learningshops I observed that LPLs grasped the concepts and ideas that appear to bear significance to their practices and not all appeared to present analogous ideas for future action. The evidence for that appears when I asked LPLs to compose their action research proposals. One LPL thought of improving assessment matters, other thought of promotion of ownership of learning, while still other thought of improving students reading and interpretation. The implication of that increased awareness of differentiated learning dwells on the need to free LPLs to apply LSF within their practices the way they deemed appropriate, since it is conducive to higher level of motivation and self-regulation in learning.

Another finding that represented a challenge for the following cycle was my inability to make LPLs grasp LSF within their practices, as I show while reporting case studies. Besides, I found my mentoring style to be more directive (Brockbank & McGill, 1998). Hence, I observed that I was still much at the center of the process of promoting my fellow lecturers professional learning, while my main goal was to hand the responsibility to the LPLs.



#### **4.5.2 My action research cycle B**

Informed by reflections I carried out in cycle A, I proceeded to the cycle B with more context and experience-grounded ideas for future action. Therefore, cycle B was marked by intense practical (B quadrant) activities, where I monitored and mentored LPLs' implementing LSF and their action researches processes.

##### *Step B1: Planning*

This step consisted of planning for follow-up on learningshop sessions. At this stage, for instance, we thought that there was no need to have one or two sessions each 15 days. Rather, as a group we agreed to meet once a month, because at the same time the LPLs and I would be in video-recording the learning opportunities and having mentoring sessions. So I was also involved in planning and coordinating video-recording and photographing LPLs learning opportunities.

Planning the mentoring sessions with LPLs was the other activity that I carried out. Therefore, before each learning opportunity being video-recorded and photographed, I held meeting with the LPL to draw the lines to guide the implementation of the intervention. After each learning opportunity there was space for the LPL to observe and comment in the light of this innovation. Again as a result of reflection occurring in cycle B there was planning for an open-ended student feedback questionnaire instead of a closed-ended one as initially intended.

##### *Step B2: Acting*

This step consisted of facilitating learningshops, carrying out video-recording and photographing of learning opportunities and animating the mentoring sessions. The other activity I carried out was assisting in administering open-ended student feedback questionnaires to LPLs. This activity took place immediately after video-recording and photographing the learning opportunities and it aimed at ascertaining the extent to which the LPL was holistic in the strategies for facilitating learning he/she had adopted, through promotion of students' comfort, and whole-brain learning.

Many mentoring sessions occurred within this step. In such sessions I discussed the learning opportunity with the LPL, ascertaining the extent to which his/her learning

opportunity had tackled LSF. Basically I asked questions requiring the LPL to explain what had happened, what in his/her analysis had been good or bad or what he/she would do differently based on Gibb's reflective questions as indicated by Moon (1999). Using such questions allowed me to provide structure and guidance in the process of assisting them to extract meaningful learning while examining their interventions. I video- or voice-recorded these mentoring sessions as a way to collect data concerning the LPLs' reflections on their implementation of LSF. Later I transcribed and analysed these reflections as nested within the LPLs' brain quadrants in order to find the link between the patterns of their reflections and their brain quadrants.

Within this step I also assisted the LPLs in administering the open-ended SFQ. This was an activity framed entirely within their action research processes. Therefore the SFQ was aimed at informing their reflection. For this reason it is not an objective of the analysis of this study.

#### *Step B3: Observing*

Subscribing to Kemmis and McTaggart (2005), I would put acting and observing together in this action research study, since almost everything that can be said here certainly would match the action step previously described. I find this step as entailing taking notes on my personal journal, video-recording and photographing of learning opportunities, watching them and discussing them based on critical and analytical observation. Observing occurred during learningshop sessions where LPLs could do their observations concerning the innovation. The last activity here was listening/transcribing audio-recordings of mentoring sessions.

#### *Step B4: Reflecting*

The main reflective activities that occurred here were the assessment of learning opportunities based on video records and photographic data; LPL reflection on the findings of the open-ended student feedback questionnaire; my reflections on my own learning process; assessment of the learningshops by LPLs and celebration of learning and mentor self-assessment.

Assessment of learning opportunities video-recorded and reflection on the open-ended student feedback took place during the individual mentoring sessions, involving me and the

LPLs, as well as during the composition of each LPL's action research report. The mentoring was the occasion I created for LPLs to reflect critically on their learning opportunities and gauge the extent to which they were successful in implementing LSF.

Besides these opportunities I facilitated learningshops where the whole group could make their reflective remarks concerning their experience in general. The difference with mentoring sessions was that here the reflections were not directed at a specific learning opportunity, but at the whole experience in general. Regarding this it is worth sharing a comment made by one of the LPLs during a session. He said the following:

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LPL 7 *These learningshops are highly beneficial since they open up space for us to confront what others bring and our own experience. For instance, the problem of how to use clear criteria for assessing students ... recalled the experience I had once in assessing my students ... by means of group ... Personally I faced a big challenge in assessing the students individually. I realise it is necessary to establish assessment criteria ... Forums and experiences like this one are useful in supporting us to tackle this and other problematic issues.*

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Still within the learningshops there was a meeting aimed at assessing the whole process of carrying out these learningshops, apart from distributing the participation certificates. This was a moment for me and the LPLs to celebrate the learning that had occurred. In general I found that LPLs were satisfied with their experience of implementing LSF and carrying out action research. They indicated that this experimental professional development was relevant and necessary to fill the gap that exist within .

Finally I carried out self-assessment as mentor, facilitator of professional learning and as co-learner. This self-assessment encapsulated a reflection on the whole venture of carrying out this study. Therefore, in chapter 6, I present a reflective journey from how I started this process, the challenges I faced and changes I achieved to promote myself and close with gauging the successes I think I accomplished. In the next paragraphs I present the results of my reflections on my learning process. Some lessons concern my practice as facilitator and mentor, while others refer to my learning as co-learner. Based on chapter 2, I find that as mentor I had to facilitate my fellow lecturers learning. Therefore, I do not distinguish kinds of learning that can be considered inherent to each.

From the analysis of the second cycle of the action research process I concluded that the main achievements I had attained were related to a deepened understanding and ability to put into practice the lessons I had learnt in the first cycle. In some cases I was surpassing the shortcomings of the previous cycle; in others I was funnelling the gains, while in still others I was realising my inability to implement certain lessons. The next paragraphs explain such gains.

One achievement I can mention here regarding my role as facilitator of learning consists on the accomplishment of the ability to teach for application, which is beyond teaching for understanding suggested by Ramsden (1992). Therefore, within this all process I observed that my main success consisted on managing to have the LPLs learn about LSF and action research within the learningshop sessions and proceed to apply the acquired knowledge within the learning opportunities they facilitated. This is evidenced by the presentations in the case studies. After their interventions, were they applied the new knowledge, the LPLs met me in individual mentoring sessions to examine their actions. All of this is beyond explaining and describing the new acquired knowledge, since they were required to implement principles, solve problems and choose among different options when facilitating learning. In certain instances, it required them to contrast, evaluate, and critique their performance, which is even beyond application. I find this acquisition invaluable for my future practice, since it challenges me to transform it, either as mentor, facilitator of fellow lecturers learning or of general students learning. I find myself defied to always ask the learners to bring the evidence of their newly acquired theoretical knowledge. Such evidence must be expressed not only in explanations and descriptions, but mainly through application, resolution, and demonstration. These should be followed or accompanied by self-assessment, critique, and comparisons.

Reflecting back on my transition from my cycle A to cycle B, I observe that I improved my style of facilitating learning from directive to be truly facilitator. With regard to this, I observe that in the first cycle I usually took the lead for the whole process, making presentations, and making decisions. More than once, I gave my opinion even before I ask the participants. Looking to my personal notes and to the video recordings of the learningshops, I observe that I increasingly adopted a more catalyst, enquirer, facilitator role. Therefore, in the cycle B I increasingly valued and emphatically accepted the LPLs opinions. Many times I had to rely

on the group's suggestion, which might have increased the LPL's confidence and freedom to participate actively. Major decisions were jointly made and collaboratively adopted, not unilateral nor imposed. For instance, there was a learningshop session where the whole group was in charge of telling the LPL who was presenting that the new proposal 'was really action research proposal and was including elements of LSF'. This acquisition appears to have impact in my future practice since being lecturer and working with adult learner, it will require from me to always seek to accommodate the adult nature of students who, Knowles (1996) says, need to feel accepted, respected, and supported to express themselves freely, and who should be involved in planning making decisions concerning their own learning.

As result of this experience, I gained or increased my management and interpersonal skills. With regard to this, I observed that I had learned to maintain and even improve the working dynamics within a learning community that had already grown in order to have its rules and norms established. I stimulated the collaborative work within the group. It implied that I increasingly had to implement a democratic style of leadership within the group. In practice it meant that we took all decisions on a consensual basis and I never imposed my views on the group, what means that I was promoting freedom, collaboration and equality of opportunities. Remarkable was the success I achieved in managing to have and maintain LPLs with different ages, academic degrees and experiences. In this way, I explored the opportunity that I created to have the more experienced lectures, as Wildman et al (1990) would say, unpacking their conceptions of teaching and to construct more detailed analysis of teaching than they typically used in their daily professional lives.

During the mentoring sessions I learned to balance the necessary support and challenge needed by different LPLs with diverse levels of achievement and needs. Hence I had to determine the differentiated amount of support and challenge needed by the successful professional learner (e.g. LPL1) and hesitant professional learner who was struggling with the process (e.g. LPL4). On the whole this represents one of my main gains – the ability to manage mixed-abilities, backgrounds, ages and the category *adult professional learners*.

To a certain extent linked with the previous gain, I learned to build confidence in my practice of facilitating professional learning. I would say, I increased my ability to promote self-motivation, either as facilitator of learning or as co-learner. Lecturers who seek to make

changes in their practice might face feelings such as doubt, stress and fear of losing control (De Boer and Van den Berg, 2001). At certain moments this happened to me. But thanks to readings and to the progress we were achieving I could regain the confidence necessary and increase my motivation. In a way I was illuminated by Budge and Clarke (2012) who compare professional development and the creative art. Like they state, to engage successfully in the promotion of professional development, akin to an act of envisaging creative acts, as the facilitator I had to harness many core features that included the ability to *observe, explore and expand, risk-taking, courage, determination, engagement and persistence* (Budge & Clarke, 2012:67). Matched with initial success, those I understand to be among the main elements that assisted me in building confidence.

The other gain I achieved in the second cycle is my increasingly shift of focus from looking for the mechanical application of the principles of LSF to search for a dynamic application of holistic learning strategies. At first glance LSF and holistic learning strategies mean the same thing. However, I found that in the first cycle my concern was to see the discrete principles applied in the learning opportunity, while in the second cycle I increasingly looked for learning strategies that consider the individual learner as a whole composed by the logical-rational, emotional, spiritual and creative minds.

The other gain I can mention here is my increasing capacity to view my whole practice as guided by values of freedom, collaboration, and equality of opportunities. Following McNiff and Whitehead (2006) I find the basis of my action research consisting on my effort to live according to my educational values, of practical judgment about the extent to which I can demonstrate to be living in the direction of these values. My final analysis allows me to say that throughout my action research I increasingly learned to judge my practice and those who worked with me in terms of the extent to which we managed to live in the direction of democratic values of freedom, equality, and collaboration. Therefore, I allowed LPLs to define the course of action they deemed adequate, I gave them equal chances of participating and presenting ideas. On the whole I gave lots of opportunities to work in groups as a self-reflective community.

#### 4.6 Learningshops

Matching other experiences with Participatory Action Research (Babbie & Mouton, 2001), I worked with a group of lecturers participating in a series of learningshops (LPLs) that I organised and facilitated. In a total of ten (10) sessions I pursued to cover diverse issues, including the presentation of innovative ideas, discussion of the application of these ideas, and follow-up on discussions/presentations as well as conceiving action research proposals.

My rationale for organizing the learningshops was the awareness that one way of encouraging critical reflection is through processes involving collaborative inquiry where lecturers meet together regularly to dialogue about topics of common interest or examine educational theories and the implications on practice (Miller, as quoted by Kraft, 2002). In idealising the learningshops I envisioned it as a kind of co-mentoring that would open space for creative and democratic interaction contributing to the formation of insight and understanding (Jipson & Paley, 2000). My purpose was to create a professional learning community to encourage LPLs' professional dialogue conducive to transformation of our practices in order to maximise students' learning outcomes (Le Cornu, 2005). Besides, I was subscribing to social constructivism that approaches learning as joint and social process of constructing meaning in interaction with co-learners (Gravett, 2005).

I organised the sessions with a frequency of two days every 15 days. I have done so in order to give LPLs time to reflect and grasp the ideas shared. Moreover, it seemed that having all sessions in a single week or two would be time-consuming, considering that the lecturers had other duties. Even organised in this way (or maybe for this reason), we observed that four participants (out of thirteen) did not continue after the first two sessions and another one attended only three more sessions. Thus in the end eight LPLs were attending the sessions, the majority from the Faculty of Education (4), then the Faculty of Arts (2) and the Faculty of Sciences (1) as table 4.4 shows. From this result I observe that the participants who did not continue are those whose faculties are somehow distant from the venue (Architecture, Veterinary Science and Law). This fact substantiates the decision I made to compose a convenient sample, which would make it easy for the meetings to occur, taking into account the proximity of these faculties.

Table 4.4: Characteristics of LPLs

Identification	Sex	Age	Academic qualification	Years of experience	Faculty
LPL1	Male	28	Bachelor	3	Education
LPL2	Male	27	Bachelor	3	Arts
LPL3	Female	35	Master's	12	Education
LPL4	Female	37	Bachelor	5	Education
LPL5	Male	56	PhD	30+	Education
LPL6	Male	29	Bachelor	3	Arts
LPL7	Male	51	Master's	30+	Natural Sciences
LPL8	Male	47	Master's	27	Education

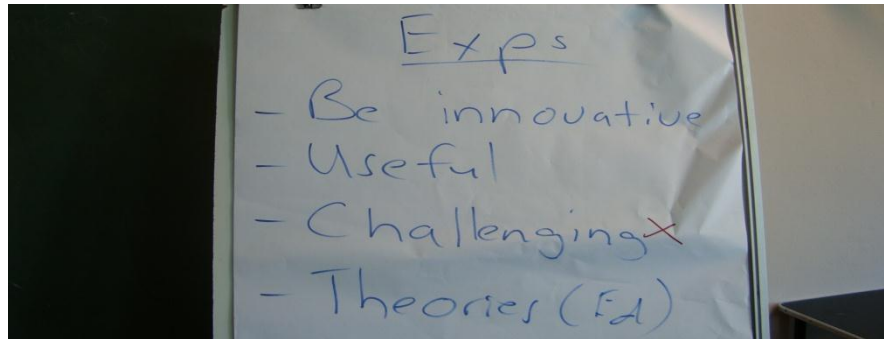
The following themes were covered in the sessions: using learning style flexibility for education innovation, action research as process for educator professional development, using portfolios for reflexive practice, action-research and professional development, and using a student feedback questionnaire to elicit LPLs' reflection. I presented these themes in four sessions, which combined group work, presentations, and plenary discussions. These *created opportunities for mutual discussion and/or advancing interests, needs and issues that have individual and shared importance in our teaching, writing and living* (Jipson & Paley, 2000:37). In the following paragraphs I explain the activities and contents of each of the 10 learningshop sessions.

#### *Session 1: Using Learning Style Flexibility for Education Innovation*

The first session had an attendance of 13 lecturers from different faculties including Education, Natural Sciences, Arts and Social Sciences, Engineering, Law, Agronomics and Veterinary Science. This session was facilitated by Dr P. H. du Toit. Its aim was to assess the participants' expectations (depicted in visual 4.1) regarding the learningshops and to get them acquainted with the whole-brain model and with Learning Style Flexibility.



Visual 4.1: LPLs' expectations



The assessment of their expectations aimed at promoting the lecturers' ownership and commitment with the learning process that was about to start. It would allow bridging the session with their rich experience as a resource for learning (Gravett, 2005).

This moment allowed A and B quadrant dominant participants to figure out how the learning experience would bring them to know theories that could be used to solve their working problems (usefulness), while D quadrant individuals had the opportunity to make projections about their willingness to acquire tools to engage in innovative practice.

One step forward the participants were introduced to the whole-brain model and to the LSF. The facilitation adopted a LSF approach. This was done by means of combining interactive methods that included group work/discussions (C quadrant), PowerPoint presentations (A and B), film projection (D) and plenary session discussions (C). For instance, the introduction of the whole-brain model was done through the presentation of a visual of an accident that lecturers participating in the learningshop (LPLs) were required to interpret in groups. The different ways of presenting the group's findings were linked to the different brain quadrants in a way to bridge to the Herrmann model. In this way the LPLs appeared to uncover the meaning of the whole-brain model and LSF. Apparently this exercise seemed to have raised their awareness of this holistic strategy of facilitating learning.

### *Session 2: Action Research as Process for Educator Professional Development*

As a way to bridge the previous and the current session, there was a video exhibition (D quadrant) about the origins, features and applications of the whole-brain model in education and job contexts worldwide. This moment provided the LPLs with vicarious experience of a

variety of actions in the world, including fieldwork, experimentation and interpretation through the dynamic and synergistic combination of sound, vision and argument (Laurillard, 1993). Afterwards there was a discussion where the LPLs were invited to reflect on the application of LSF within their practices.

Like the previous one, this session occurred mainly through interactive methods. LPLs had to analyse (A quadrant), discuss (C), interpret visuals (D) and come to a conclusion. Then it went on, approaching asset-based and deficit-based action research. Using PowerPoint presentation (A and B quadrant), the structure of an action research proposal was presented and discussed with the LPLs. Video-recording and photographing were discussed as useful instruments to collect and present evidence in action research. Equally relevant to the study the observation sheet, as a tool for analysing data, was shared with LPLs. Then the LPLs discussed the usefulness of carrying out action research. Finally the match between LSF and action research was presented.

### *Session 3: Carrying action research about LSF*

This session was facilitated by me. It was mainly hands-on (D quadrant), practical in essence and it was devoted to implementing the ideas gathered in the previous two sessions, accommodating the C and D quadrant LPLs, while taking A and B LPLs out of their comfort zones. I asked them to produce their own asset-based action research proposals that should include elements of LSF. Hence, I was putting to work the idea that, like a creative act, the professional development intervention must stimulate playful approaches, curiosity and imagination, experimentation and testing of the unknown, while maintaining a benign attitude to error (Budge & Clarke, 2012:63).

The research questions were presented in a plenary session, discussed and feedback was given, both by other LPLs as well as by me as the facilitator. In this way the groups could make the improvements accordingly. Hence I was promoting a cooperative learning environment where the whole group was acting as resource for each LPL's professional learning (Gravett, 2005). Moreover, I encouraged LPLs to conceive viable knowledge, through social interaction (D quadrant) where they negotiated meaning and confronted understandings (Von Glasersfeld, 1995; Driscoll, 2000).

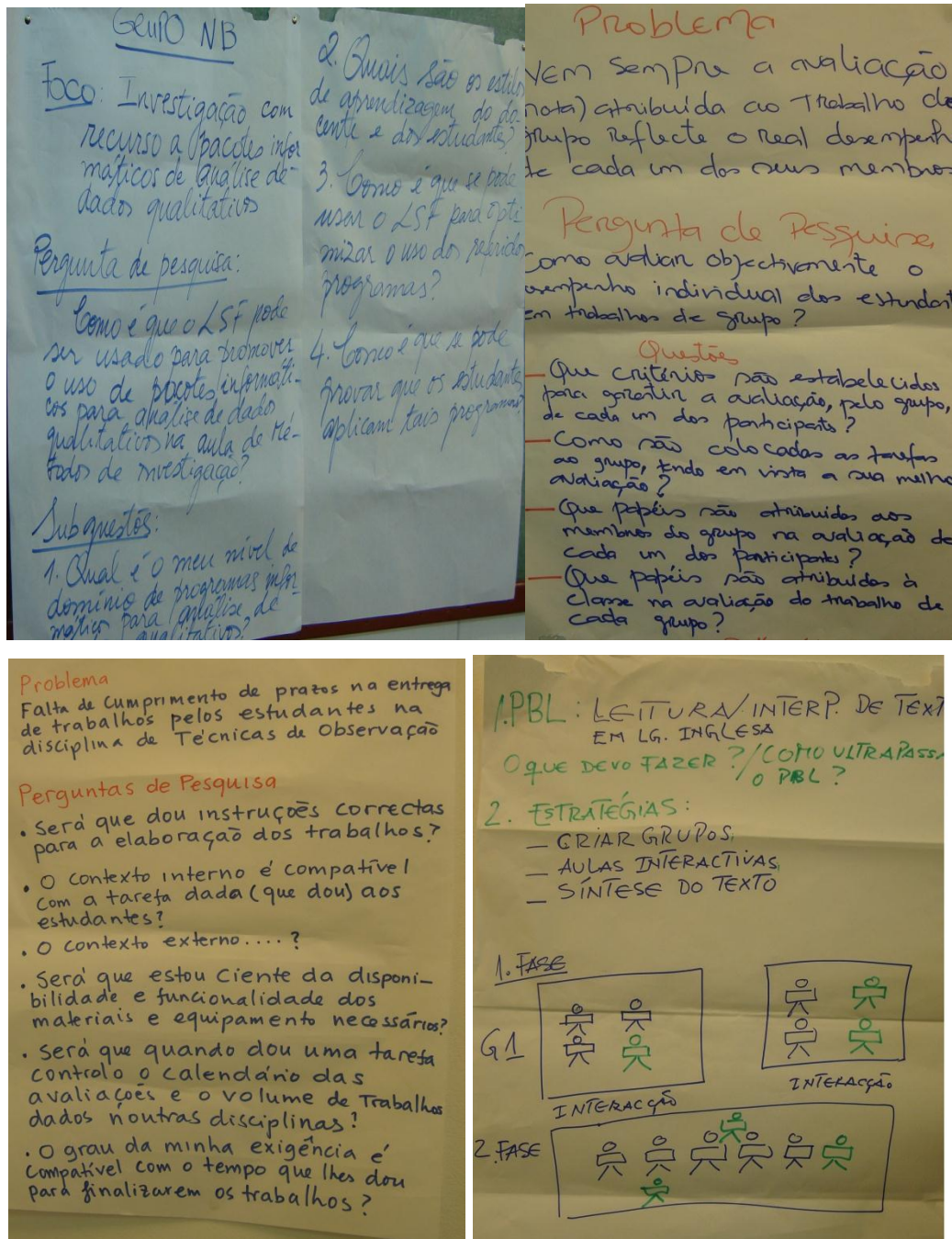
In visual 4.2 I depict the four research proposals they produced. Most of the groups remained attached to the left hemisphere modes while presenting the proposals, using exclusively words and numbers. They were focused on presenting neat and sequential elements of the proposal, through conventional forms of research proposal presentation. I find the explanation for that on Budge and Clarke (2012:63) who says that academics are inclined to take safe, conservative approaches when planning, they are reluctant to make changes or try new things.

The photograph in the top left shows that the group was careful and went to the detail of defining the research focus, the research question and its sub-questions. In this photograph there appears to be a prevalence of the B quadrant preferences through the presentation of organised, detailed and sequential information. I find elements of the A quadrant everywhere since there are indications of logical and analytical thinking conducive to this result. However, the C and D quadrants appear to be missing here.

The photographs in top right and left of visual 4.2 shares many features with the one in the bottom left, except for few differences. Such differences include a lack of distinction between the main research question and sub-questions within the bottom left photograph that simply presents a whole set of questions. The other difference is the slight lack of attention to detail in both the top right and bottom left photographs; for instance, the questions are not numbered but presented in a bulleted list. Apart from these differences, the two proposals, in the top right and bottom left appear to explore the A and B quadrants more while the C and D quadrants are somehow unexplored.

The group whose proposal appears in the bottom right in visual 4.2 appears to be the exception. This group used very few words compared to the others. They made matchstick drawings to illustrate interaction the group was seeking to promote in order to increase understanding. Therefore they made the association of two communication symbols in pursuit of a more playful approach. Moreover, they used different colours while drawing the matchsticks to differentiate between skilled and unskilled students. This group appeared to explore mainly the C and D quadrants to share ideas.

Visual 4.2: LPLs problems and research questions



As facilitator of the session I showed to the remaining group how this example was an excellent one encapsulating the D quadrant. Building on the example of the photograph in the bottom right, I shared with them the need to explore possibilities like these within their lecturing practice. This can happen through giving students the freedom to present

information in ways that they are more comfortable with, using imagination, colour, visualisation, spontaneity, playful approaches, and pictures and metaphors, among others.

#### *Session 4: Carrying action research about LSF (follow-up)*

The last part of the previous session and almost the whole session 4 were dedicated to presentations of LPLs' proposals and feedback. Such feedback was provided by other LPLs and by me as facilitator. Such feedback represented an opportunity for facilitating learning that transcends private intrapersonal reflection (Beatty, 1998). Hence, a colleague acting as a mentor could aid learning since his/her own experience and knowledge brought challenges and insights to the fellow lecturers' reflections. In this way I was exploring the potential of learningshops to promote collaborative mentoring. As such I managed to involve LPLs directly in one another's professional learning through sharing experiences, giving support and advice as well as providing feedback while developing towards a common goal (Mullen, 2000). LPLs developed the four (4) research proposals depicted in table 4.5. In general, the main criticisms to the research questions were: the fact that there was an absence of elements of LSF in them; the fact that some were rather deficit-based action research; the fact that one was a baseline study; the fact that the questions were not action research, but spectator research questions;

#### *Session 5: Using student feedback questionnaires to elicit lecturer's reflection*

This session was devoted to discussing student feedback questionnaires. As point of departure there was a discussion of different tools used to give feedback on lecturers' practice. The UEM Performance Appraisal System for Academic and Research Staff (SADE-CDI), as one of the components of the university instrument for lecturers' performance evaluation, was analysed. There were discussions around its strengths and shortcomings. For instance, the LPLs observed that the reflexive potential of the self-assessment component should be explored. Self-assessment stimulates reflection and professional development since it makes the lecturer think, look at one's weak points and develop a new focus (Koster & Dengerink, 2008). Therefore the LPLs advanced the idea that the lecturer should be required to engage in dialogue with a peer about his self-assessment as well as to annotate the reasons behind poor accomplishment of certain tasks assessed by the SADE-CDI instrument.



In the next step two student feedback questionnaires used independently by different LPLs were examined. Finally I asked the LPLs to conceive a LSF-student feedback questionnaire in a brainstorming activity (D quadrant). Then I collected the contributions of all LPLs in order to collate all contributions, producing a unique instrument. However, I observed that the resulting instrument was far from being a whole-brained student feedback questionnaire as I intended. Such failure was determined by the lack of deep understanding of whole-brain model and LSF by lecturers. This was later apparent in the improvements they made in their research proposals, which appeared to have an entirely different approach from the previous attempts. Therefore, concerning the SFQ, we decided to employ an open-ended student feedback questionnaire.

*Sessions 6 and 7: Carrying action research about LSF (follow-up)*

This session was entirely dedicated to presentations and discussion of the groups of LPLs' research proposals, improved according to the feedback given by me and the whole group. Therefore each group made a presentation and then the whole learningshop group could formulate questions and give suggestions for further improvement. It was possible to observe certain improvements in the proposals as a result of previous comments. This can be demonstrated by the research questions in the table 4.5.

Table 4.5: Evolution on LPLs' research questions

Previous research question proposal	New research question proposal
How can LSF be used to promote the usage of informatics packages for qualitative data analysis in the Research Methods classes?	How can I use LSF to promote the usage of informatics packages for qualitative data analysis in the Research Methods classes?
Do I give clear instructions for the assignments so that students can submit them on time? Am I aware of the availability and functionality of the necessary equipment and materials?	Do I give clear instructions for the assignments, taking into account the students' learning preferences?
What can I do in order to overcome my students' problems with reading and interpretation of texts in local language?	How can I use LSF principles to support students with problems regarding reading and the interpretation of texts in a local language?
How can I assess individual student performance in group work? What criteria are established to guarantee each participant's assessment by the group?	How can I use LSF principles to assess students' performance in group work?

In all the groups I observed that the members were still using the conventional form of presentation, namely numbers and words. Since LSF is as well about learners' freedom to choose the way they approach the task, I did not compel them to do it through other modes. One of the groups even used a PowerPoint presentation to do so, which might evidence the comfort felt with this way of presenting.

However, as I said in previous paragraphs, the task of carrying out action research was per se ample challenge to adopt whole-brained innovation within their professional learning activity, since it required analysing one's practice (A quadrant), defining the steps for the research (B), interacting with peers and mentor (C), and devising innovative ideas or a solution (D). Besides, for most of them successfully taking the students to role-play, simulate, write poems, among other right hemisphere activities, implied acting outside of their comfort zones.

Within the case studies I report in the forthcoming sections I present in depth all the research proposals. The reader will notice that the research questions presented in table 4.5 will be subject to additional changes as the LPLs are confronted with the need to implement. In my experience of facilitating learningshops and mentoring sessions I promoted constructivist learning and acknowledge it as requiring self-regulation (Von Glasersfeld, 1995). Therefore I provided room for LPLs to tackle the innovative practice as their own venture, and acknowledged the desire to reach what they understood as the end of the effort as the most reliable form of motivation (Von Glasersfeld, 1995). Such motivation triggered their control over the planning and execution of the professional learning process through setting goals, locating resources, implementing strategies and evaluating progress (Brookfield, 1985).

*Session 8 and 9: The HBDI and carrying action research about LSF (follow-up)*

During this session the LPLs were divided in two groups: one which was going to fill in the HBDI and the other continuing discussions on their research proposals. Due to time constraints the presentations had to continue in the following session. During the two sessions the groups had feedback mainly from the facilitators since it seemed that the other LPLs regarded the last proposals as the more appropriate.

*Session 10: Learningshop assessment and attendance certificate distribution*

This was a kind of formal closing session where the LPLs assessed the learningshop and the attendance certificates were distributed. I asked the LPLs to fill in an open-ended evaluation form that I had designed. It entailed questions such as if the respondent would recommend the spreading of that experience throughout the university and why; what designation he/she suggested for the course; what elements of the sessions should be kept or left out; what should be done in order to improve forthcoming learningshop experiences.

LPLs' assessment shows that the experience is recommended for the whole university and the country, since the existing formal professional development practices are antique and not up to date. Such existing practices entail mostly the mentioned short courses on Teaching Methods, student assessment, etc. which are mainly for beginning assistant lecturers. They observed that there are no such initiatives for senior lecturers. Moreover, this experience had the distinctive feature of bringing together lecturers from different categories and lecturing experiences. Therefore, according to them, it would be introducing a novelty within the professional development interventions carried out by the CAD. They suggested an array of designations, ranging from "flexible learning methodology", "reflective practices within lecturing practice", "learning styles and student performance", "lecturer capacity building in learning styles" and "contemporary practice of facilitating learning".

A point worth sharing here was made by some LPLs who stated that class video-recording was highly beneficial, since during the learning opportunity there is no possibility for one to observe one's own behaviour. Therefore, as one of the LPLs said, "now I am in better position to observe my behaviour". They were finding themselves better equipped to gauge their performance and to uncover features of their lecturing practice that they could improve.

The major concern was a lack of time. Some LPLs suggested that the sessions should not be distant from one another. They suggested that meeting each 15 days would be much better. Recall that these learningshops lasted longer than eight (8) months, mostly because of research constraints. Others suggested that the time should be negotiated in advance with all participants in order to increase the attendance rate.

Borrowing from the experience of the University of Windsor, I would say that in a climate of high workloads and shortage of time and funding, it is critical for lecturers to share their



success stories. We have done this by means of celebration of learning; visual 4.3 shows part of the LPLs exhibiting attendance certificates awarded at the end of the learningshops.

According to Franco (2012), celebration of learning is the recognition that learning has taken place and demonstrates the value of LPL participation, instilling energy and excitement, even if not necessarily a culminating activity as the LPLs showed interest in taking this effort further.

Visual 4.3: Part of the LPLs exhibiting their learningshop attendance certificates



A further evidence of this experience relevance is that some of the junior lecturers, who had requested their certificates prior to the session, were able to submit them as part of their portfolio conducive to the promotion of assistant lecturers.

#### 4.7 Peer mentoring

As a parallel and contingent activity to the learningshops I mentored the LPLs throughout a whole process of implementing the innovative idea of LSF and monitored such efforts by means of small-scale action research. A guiding assumption to conduct such mentoring was the intent to explore the potential effects of jointly constructing meaning through interaction with the LPLs. Therefore my objective was not to force my knowledge and beliefs onto LPLs, neither to attain their unquestioning compliance; rather my goal was to provide opportunities for the LPLs to reflect on learningshop inputs matched against their experience of putting into practice the knowledge constructed through such practice. Therefore I

reckoned that LPLs had their own learning objectives and that effortful engagement, coupled with my support and guidance, would increase the chances of success in pursuing the learning objectives (Klasen & Clutterbuck, 2002). I abandoned the view of mentoring as expert hierarchical one-way view for a more reciprocal relationship. Following Le Cornu (2005), I adhered to peer mentoring, where lecturers act as mentors for one another.

The mentoring sessions occurred before and after the video-recording of the learning opportunity. The sessions that took place prior to the learning opportunity were aimed at setting the scene for the intervention whereas the session that occurred afterwards was purposeful to analyse the incidences of the learning opportunity. It was an opportunity for the LPL to reflect on his/her experience. Within the mentoring sessions the LPLs could develop critical reflection skills that made possible their engagement in the level of professional dialogue that is necessary for active learning and is facilitated by ideas and beliefs, as well as openness to critique, support and challenge (Le Cornu, 2005).

Within the mentoring session, in order to trigger LPLs' reflection, I asked the questions below incorporated in Gibb's reflective cycle (Moon, 1999):

- *Description:* What happened?
- *Feelings:* What were you thinking and feeling?
- *Evaluation:* What was good and bad?
- *Analysis:* What sense can you make of the situation?
- *Conclusion:* What else could you have done?
- *Action plan:* If it occurs again, what would you do?

During the process of mentoring, following Harrison et al. (2005), I tried to stimulate LPLs' critical reflection by means of deconstruction of practice (asking them to examine and explore evidence from the learning opportunity) and through construction of practice (exploring the adequacy of personal theories and the formulation of alternative understandings). In this way I was following the dictates of experiential learning theory. Accordingly, after the LPL had engaged completely and openly in the experience of facilitating learning, he/she had to observe and reflect on such lecturing experience through visualising the video-recording. Then, he/she was able to create concepts that integrated

his/her observations in logical theory before using such theories to make decisions and solve problems found in the previous learning opportunity (Kolb, 1984).

With the LPLs' consent, I either audio- or video-recorded such sessions as a strategy to collect data concerning their reflection. Later on I analysed these reflective moments taking as guidelines the brain indicators or descriptors advanced by Herrmann (1996) as characterising the different brain quadrants. Therefore, according to the LPL's intention, while analysing the diverse moments of the learning opportunity, we might find a text or whole paragraph as associated with the A, B, C or either D quadrant.

#### **4.8 My practice of promoting professional learning as exemplar of LSF**

The following summary demonstrates the activities I carried out to accommodate the whole-brain quadrant spectrum within the process of facilitating learningshops and promoting mentoring practice, as I had been informed by the alignment of learners' expectations and LSF (Du Toit, 2008). Hence I present the elements associated with each quadrant and provide examples of the material I used to respond to such requirements.

##### **Quadrant A**

- *Numbers/data*: I provided handouts, the HBDI profile overlay and data summary, which include quantified information about the profiles.
- *Facts/theory/logical rationales*: I gave them reading material about the overarching theory of Herrmann.
- *Proof of validity*: The validated brain profiles as well as the possibility for them to verify the authenticity of action research are the proof of validity I provided.
- *Research references*: I handed an array of references as encapsulated within the theoretical framework of LSF.

##### **Quadrant B**

- *Organised/consistent approaches*: I provided organised study material.
- *Goals/objectives*: At the beginning, the LPLs expectations were identified. After that each session started with the definition of learning goals and objectives.
- *Subject chunks*: I divided the learningshop programme into sections according to the goals pursued.

- *Beginning/middle/end:* The whole learningshop programme adhered to a sequence of introduction, development and conclusion.
- *Practical application:* I mentored the LPLs to apply LSF and carry out their action research as it is evidenced by the case studies I report.
- *Examples:* Many examples were provided in the learningshops; others were generated by the respondents.

### Quadrant C

- *Discussing:* in the learningshop and the mentoring sessions I included elements of cooperative learning where discussion was the main way of engagement.
- *Sharing/expressing ideas:* The group activities I organised in learningshops opened room for sharing and expressing ideas.
- Components such as *feeling-based aspects/emotional involvement/personal connection* emerged within their involvement in group work and plenary sessions.
- *Hands-on learning:* This form of learning emerged from their task to implement LSF and action research.

### Quadrant D

- *Fun/spontaneity:* These components are related to the implementation of LSF where LPLs reported to have had much fun while observing (and learning from) their students engagement with LSF.
- *Pictures/metaphors/overviews:* In the presentations done either by facilitators or by them, there was high degree of the exploration of visuals, PowerPoint slides, transparencies, video-recording, photographs and demonstration as well as colours of the linkage between the four quadrants.
- *Discovering and exploring:* These components occurred during their engagement in the promotion of LSF and conducting of own action research processes.
- *Quick pace/variety in format:* I left room for LPLs to carry out a diversity of short activities.
- *Intuitive learning:* It equally occurred in the learningshop group activities, learning opportunities facilitated by them and the visualisation of video records during the mentoring session.

## **4.9 Case studies**

### **4.9.1 Introduction**

In this section I present five case studies of action research I carried out with LPLs as part of my efforts to facilitate their professional learning and mentoring. All the cases started during the learningshop sessions. I recall that one of the learningshop themes was action research as process for Educator Professional Development. As Brown and Duguid (1991) contends learning about action research and LSF is best understood and achieved in the context of community where such devices are used. Hence, it would not be appropriate to materialize this professional learning endeavour in a way LPLs would first acquire knowledge and then apply or use it (Eraut, 1994). Accordingly I challenged them to conceive and carry out their action research in order to monitor their skills acquisition in implementation of LSF within their practices. Having them developing their own action researches appears to be informed by situated cognition, constructivism and transformative learning. As enlightened by situated cognition, this experience shows that acquisition of knowledge is only useful if we provide the lecturer-as-learner with the opportunity to apply it (Laurillard, 1993). The same position is advocated by contemporaneous theories of professional learning that propose leaning that is context-bound and practice-based (Mott, 2000; Daley, 2001). Moreover, since their professional practice is constantly challenging, the experience exposed the LPLs to the need for a dramatic changes in their frame of reference through questioning and revising it so that it can become more inclusive, differentiating and integrative (Mezirow, 1997a; Cranton, 2010).

The reader might observe that all case studies adopted the same methodology. Hence, all LPLs employed photography and video-recoding to register the intervention incidence. In some cases they administered an open-ended feedback questionnaire to the students. For data analysis observation sheets (see Appendix L) and analysis (reflection on) of video-recordings were employed by all the LPLs.

All the LPLs adopted the same innovative idea (implementing LSF within one's practice). Since they were mentored by the same person (me), the experiences are not markedly different. However, such an experience pattern is idiosyncratic, since teaching in the real-world is always messy, unpredictable and context sensitive (Ramsden, 1992). Despite the similarities, the case studies are evidence of a possible way to promote critical reflection

with lecturers of different ages, categories and years of experience. The other aspect I find worth to consider, following Loughran, is that although the knowledge the LPLs developed throughout this venture may not necessarily be new or different for many teacher educators, it was new and meaningful for them who developed it because of the ownership derived from the direct link to their experiences. In so doing,

*their effective reflective practice is evident in the manner in which their possibilities for future action are enhanced because of the new perspectives they now conceive - their taken-for-granted assumptions about particular situations were challenged, and so their "normal" and/or "developing" practice could not so easily be rationalized (Loughran, 2002:38).*

According to McNiff and Whitehead (2006), in action research we begin by holding ourselves accountable. We do not make judgments about others without first making judgements about ourselves, and we do not expect others to do anything we are not prepared first to do ourselves. Carrying out action research with the LPLs I tried to put into practice what McNiff and Whitehead preach as a basis to implementing the synchronous approach to action research as suggested by Du Toit (2008). This is illustrated in figure 4.5. This synchronous model shows the connectedness of the main and the sub-spirals in action research. Each activity I carry out during the mentoring session is echoed by the LPL within his lecturing practice. Moreover, it shows how my main focus is the lecturer's professional learning, although within case studies the high reference to student performance may create the impression that the study is focused on students.

I present three asset-based and two deficit-based action research cases. Among these, three were two-cycle cases and two cases were single-cycle action research. Through these case studies, I seek to report the extent to which LPLs could learn in their professional practice, through engagement in action reflection about their innovative practice. Therefore my main focus is professional learning and practice as it appears associated with my facilitation in learningshops and mentoring practice.

In the case studies I recurrently make reference to student learning, behaviour or satisfaction which, I underline, is not my focus. I explain such reference to student performance based on Daley (2000) who contend that professional learning is a dynamic and constructive process that links knowledge (LSF), professional practice (lecturing

practice in general) and context (student performance). Therefore I cannot discuss or analyse lecturers learning in a vacuum; rather, I have to do this within the frame of his/her lecturing context. Moreover, the sticking evidence of the lecturer improvement is what he/she does in the classroom as lecturer, more than what he/she does in the professional development venue as a learner.

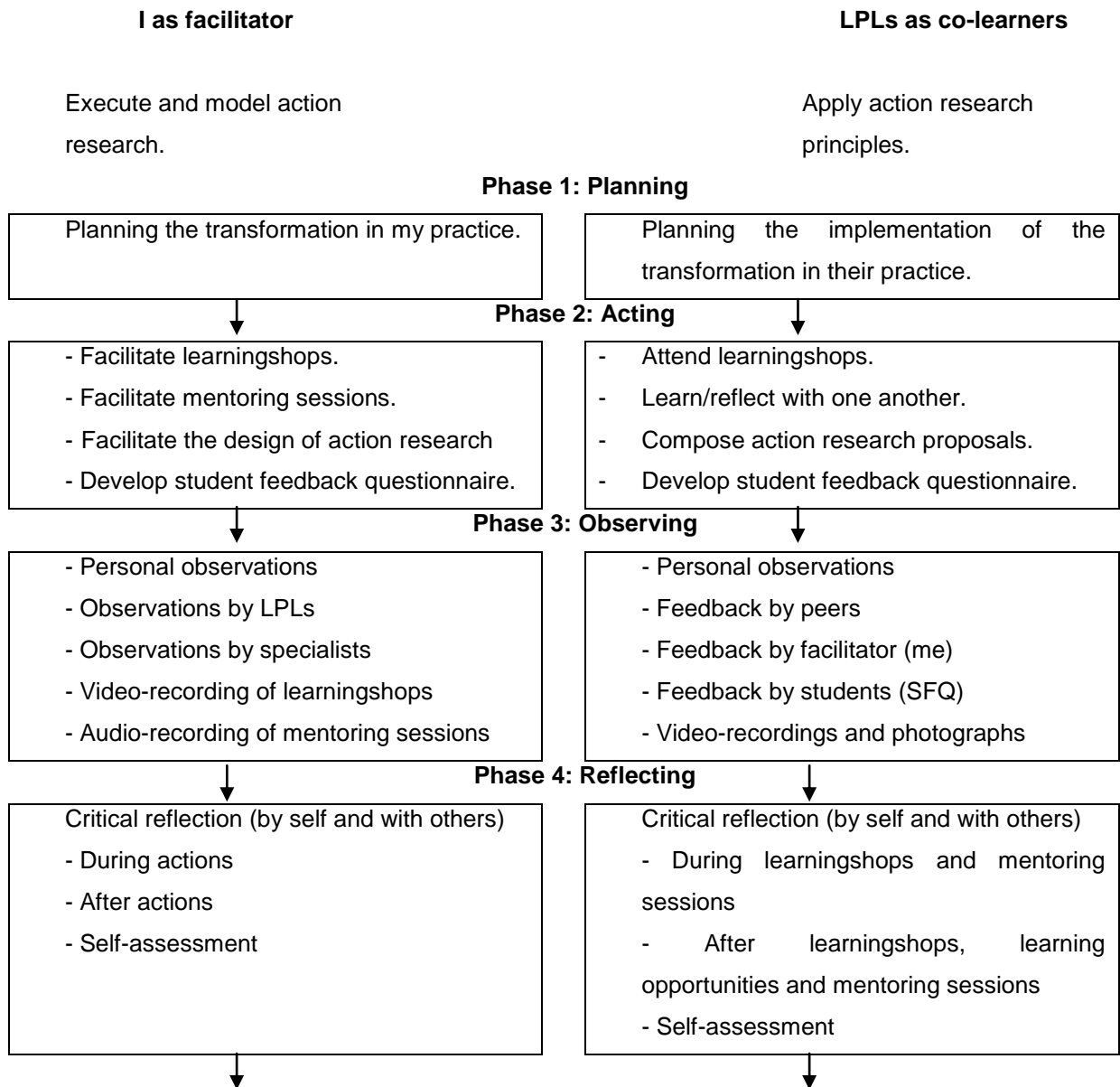


Figure 4.5: Synchronous model for action research as tool for scholarly reflection on the implementation of LSF

In making reference to student performance as evidence of lecturer professional learning, I am motivated by the intent to encourage workplace-embedded professional development (Beaty, 1998; Ferman, 2002; Radloff, 2005, Frick & Kapp, 2009). Accordingly, I promote my fellow lecturers' professional development as constructivist endeavour where they conceive their concepts and construct their knowledge within experience. Hence, I am aware theories and techniques on their own will have little effect on practice unless there is opportunity to practise them, since lecturers transfer very little of what they learn in short courses, seminars, and workshops to classroom practice. Therefore, following Radloff (2005), I seek to show that my focus is my and LPL current activities of facilitating learning, the promotion of enhancement rather than compliance, and the contribution to a culture that values evidence. Therefore, instead of solely focusing on the activities I carried out with LPLs within learningshops and mentoring, which are not evidence of LPLs transforming their practice, I proceed to show what students do as result of lecturers operating change in the way they facilitate their students' learning. Such change represents their professional learning as associated with my efforts to promote their professional development.



#### 4.9.2 Case study 1 – LPL1

LPL1, a triple dominant, 1-1-1-2, as figure 4.6 shows, is a junior assistant lecturer at the UEM. He holds a Bachelor's degree in one of the major courses offered by UEM. Considering the match between LSF and action research, I observed that LPL1 brain profile was an indicator that he was going to easily thrive in planning. This step requires A and B quadrants, which are his primary preferences. His profile also indicated that he would face some difficulties in observation (A, C, and D), action (C and), and reflection (C and D), because D represents a secondary

preference for him. Still such weaknesses would be counterbalanced by his primary preference for A and C quadrants.

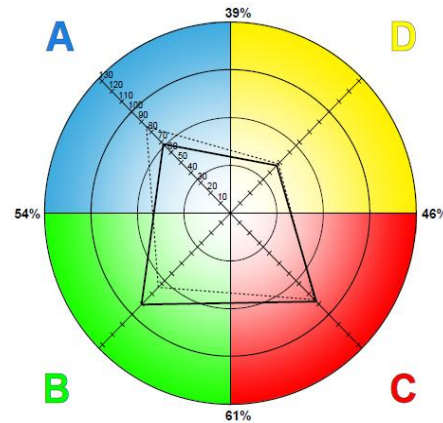


Figure 4.6: LPL1's brain profile

In the pursuit for transformation towards holistic learning, LPL1 profile indicates that he had to put extra effort on working to develop his artistic, imaginative and intuitive thinking located within his secondary preference (D quadrant). Still, he had to work in order to improve factual (A quadrant), detailed (B), and spiritual and musical dimensions (C) all located within his primarily preferred quadrants.

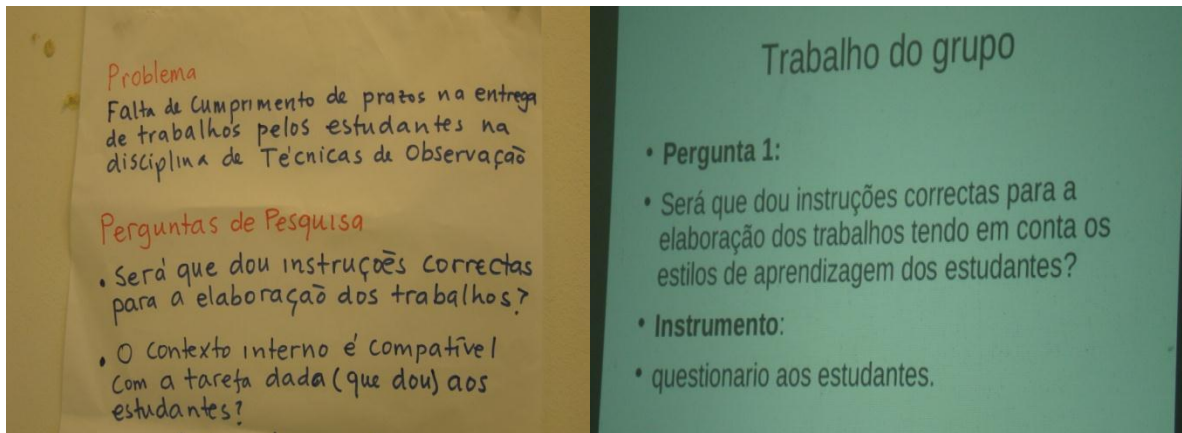
##### *Stating the problem or innovative idea*

Within the learningshops, LPL1 had to conceive an asset-based action research proposal encompassing elements of LSF as applicable to his practice. He started by working with a group of three LPLs, as I explained in the previous paragraphs..

LPL1 has been lecturing the module on 'school and professional guidance'. His first problem, presented in left of visual 4.4, was linked to students not complying with the deadlines for submitting the assignments.

After getting feedback and suggestions for improvement from me and from fellow LPLs during learningshop sessions he reformulated it. Then he devised the question in terms of the clarity of his instructions to students regarding their assignments, taking into account the students' learning styles (in right of visual 4.4).

Visual 4.4: Excerpts from LPL1's asset-based research proposal



Informed by learningshops and inputs from mentoring sessions, LPL1 proceeded to what emerged to be a workable asset-based action research. In the learningshops, illuminated by values such collaboration, and equality, I encouraged cooperative learning. I promoted a climate for challenging interactions conducive to LPLs scrutinise their thoughts and beliefs and to revise their own views (Gravett, 2005). This happened mainly through LPLs engagement with feedback from fellow learningshops participants. Therefore, after he had reflected on the feedback, LPL1 detected that certain themes are much more acceptable for him than others. Hence, he feared he probably did not accommodate the whole-brain quadrants while facilitating learning. In this way he appeared to demonstrate another gain from learningshops, namely the awareness of a difference of learning styles or preferred modes of knowing and the need to accommodate it as LSF advances. According to him this lack of accommodation of the whole-brain spectrum might have to do with his reliance on his brain dominance. He was performing metacognitively, in demonstrating awareness of his brain profile in relation to subject content and was showing his capacity to control or monitor his cognitive activity. LPL1 was demonstrating to be aware and in control of his abilities. These properties, paired with planning, directed and selective attention and self-evaluation are metacognitive strategies (Jackson, 2004). I also find involvement of metalearning as well, since as a lecturer is a co-learner (Gravett, 2005), action research is a learning process (Kemmis & McTaggart, 2005); and metalearning is the part of metacognition that is devoted to the act of learning (Jackson, 2004).

Alongside the idea I have mentioned above, the challenge to introduce LSF within his practice of facilitating learning played a pivotal role for him to reformulate his initial action research proposal questions, presented in the learningshop session. Therefore he thought of setting a scene where he would explore LSF to promote learning environments conducive to higher student comprehension of topics that due to their structure appear to be turn-offs of his brain profile. He thought of this, like Ramsden (1992) recommends, as an opportunity learn from students appreciating the process and product of their learning.

### *Setting the project scene*

Informed by the learningshops, where LSF was enormously said to be a student-centred approach, but also probably elaborating on background information he acquired as student, LPL1 established that advancing student ownership of learning would be a potentially beneficial intervention to address the need to employ LSF in promoting higher students' comprehension in topics that are underestimated by him. Accordingly, he stated that:

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*LPL1, MS, 10/06/2010 the learning opportunity was going to entail two parts. In the first, the student would be in charge of making the lesson presentation. Then, the student would have to answer some questions asked by the colleagues. Those questions the student could not reply to were going to be answered by me. I would intervene both to make things clear and to help the students.*

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Here I notice that LPL1 was trying to be a true facilitator of learning, supporting and counterbalancing the student presentation. I find the rationale behind this decision to be that when the student is in charge of teaching peers result in

*active engagement, imaginative enquiry, and finding the suitable level and style [that] are all much more likely to occur if teaching methods that necessitate student activity ... and cooperative learning are employed. These kinds of method permit a degree of student control over learning and can thus accommodate individual differences in preferred ways of reaching understanding (Ramsden, 1992:101).*

Besides, the counter-balancing between student presentation and lecturer intervention would render complementarities in facilitating learning between the B quadrant (the lecturer's) and the student's quadrant. Again, LPL1 was showing his awareness of differences in modes of learning or learning styles. Beyond that, he was putting to play the idea that the learning styles are equally important and none should be preferred to the

detriment of the other. With increased participation of other students or the whole class and since the lecturer was going to give support during the entire learning opportunity, he was expecting that a truly LSF environment would be in place and students' comprehension would be promoted.

### *Cycle A*

#### *Step A1: Planning*

LPL1 carried out his action research with the expectation to surpass what he feared to be his low commitment to facilitate learning. I anticipated this as a deficit-based approach to action research (Du Toit, 2008). Therefore it reminded me of questions such as *How can I improve my practice?* (McNiff & Whitehead, 2006). LPL1 adopted asset-based action research as well, since the knowledge of his brain profile was an advantage. Therefore he adopted what I could term a dual action research approach.

LPL1's concern with possible low commitment to facilitate learning, absent in many professionals, represents a metacognitive skill. This skill assisted him put to play his ability to use such knowledge to self-regulate his professional learning (Zimmerman, 1990). LPL1, informed by self-regulated learning and constructive learning, expected to promote student ownership of learning, implementing the principles of LSF. It would be achieved through involving the students in the active process of constructing meaning and transforming understanding in interaction with the learning material and with one another (Gravett, 2005). For this purpose he assigned to one student the task to present a certain topic to the whole class. This strategy would result in students being more active and directive (Kozma, Belle & Williams, 1978). It is linked with deep learning (Ramsden, 1992) and with increased attempts to apply the learning and with higher student motivation (McKeachie, 1994). Therefore the student had to prepare the material, organise the presentation and share it with the whole class. Afterwards they would have the opportunity to ask questions for clarity and to probe. Since the whole class was going to be involved, occurrence of social process conducive to co-construction of knowledge was previewed (Gravett, 2005). Hence, LPL1 was going to promote collaboration and freedom.

For personal preparation, LPL1 organised his reading concentrating on those questions that appeared to be more difficult, so that if the student-facilitator did not explain well he could

intervene. In this way, again informed by learningshop experience and mentoring session discussion, he was moving his role from a teacher who imparts knowledge to students to facilitator and supporter of student learning. According to him,

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LPL1, MS, 10/06/2010 *looking at the main topics within the issue, I identified specific problems that bother the majority of students including me ... I previewed those aspects which had the potential of being complicated and I concentrated on them.*

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When LPL1 stressed the fact that he had identified topics that bothered him, to a large extent he was becoming a co-learner who would benefit from jointly constructing knowledge as informed by the students' interpretations and understandings that were going to be stimulated and supported by him.

#### *Steps A2 and A3: Acting and observing the results*

Action research process is not as neat as the spiral suggests, since the stages overlap (Kemmis & McTaggart, 2005). Hence, I put acting and observing together. The action occurred through student presentation to the whole class. After the presentation there was room for discussion, where the class posed questions and the LPL1 answered them. At certain moments there was lecturer intervention to demonstrate, support, suggest and gradually decrease assistance (Gravett, 2005). Data was collected by means of video-recording and photographs operated by one student. Video-recording allowed for further analysis of the learning opportunities at the mentoring sessions and accurate estimation activities carried out within each brain quadrant (Brookfield, 1995). Then LPL1 analysed the video record content employing of the observation sheet (see Appendix L). Besides, I guided the reflective discussion of the video-recording content, adopting some questions contained in Gibb's reflective cycle (Moon, 1999).

#### *Step A4: Assessment and reflection on the intervention*

LPL1's general observation was that it was possible to get the student-facilitator to grasp the main issues surrounding the learning opportunity theme. However, he found that there were more deficits than assets in this approach. He detected that having one student in charge of facilitating the whole session was somehow a replica of the teacher-centred approach, where the lecturer presents a topic and students pose questions or even like the seminars they used to have where a student/group presents a topic and answers the colleagues'

questions. He was demonstrating the self-criticism required from a reflective lecturer. Therefore, rather than blaming the student he was looking for alternative ways of boosting students comprehension. Moreover, LPL1 noticed that, contrary to his expectations, the whole class ended up somehow being a group of passive observers, waiting for the end of the presentation to ask questions. The student-facilitator quadrant seemed to be proximal to the lecturer B quadrant. Besides, there appeared to be a polarisation of the session by two of them. LPL1 pointed out that:

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LPL1, MS, 10/06/2010     *... reviewing the video ... I find that there are many interventions of myself here, but they are always ... in the sense of helping or supporting the student, to motivate her ... there are some questions other colleagues asked her, which seemed to be very challenging questions and would create some barriers ....I was trying to promote a peaceful environment so that the students would feel free and produce more. In a significant portion of the session it happened that both of us talked interchangeably, especially when she was answering the questions posed.*

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Although LPL1 acknowledged the need to promote freedom, he observed the implementation to be a routinely ordinary teacher-centered approach. Hence he was questioning one practice that seem to simplify his teaching but *actually works against his long-term interest* (Brookfield, 1995:8). That is LPL1 classified his learning opportunity as monotonous. Finally LPL1 noted that there was no accommodation of the whole-brain spectrum within this strategy, since most of the activities were framed within the A and B quadrants. Therefore there was a need for finding a new strategy of promoting LSF and true student ownership of learning.

Analysing LPL1's learning in cycle A of his action research, I concluded that, as informed by learningshops and by his reflections during the mentoring session, he showed to have gained new understanding that would inform his practice. His first demonstrated new comprehension included an awareness of the difference in the way students learn (learning styles of preferred modes of learning). As a result of this he strove to provide a learning opportunity that would accommodate such differences as it was apparent from his reflection on the intervention. Associated with this gain I observed that, as informed by HBDI results, LPL1 showed increased self-knowledge or metacognitive ability, which resulted in his desire to perform beyond his comfort zone and contributed to his increased ability to self-motivate. The second knowledge expansion I observed in LPL1 entailed his awareness of the idea of

being both a facilitator of learning and co-learner. This gain is apparent in his effort to have one student on the lead, while he was playing a more supportive and back role. In fact this achievement is itself linked with another LPL1 gain, namely his awareness of the need to adopt diversification in facilitating learning.

### *Cycle B*

In view of the findings of the first cycle, I advised LPL1 to proceed to the second cycle of this action research process. The expectation was to funnel certain findings, while correcting what appeared to require a remedial action, as indicated by his own observations of Cycle A, since I was playing a more Socratic role, trying to stimulate his reflection (McKeachie, 1994). Therefore I suggested the set of activities for facilitating learning associated with the different brain quadrants as indicated in table 2.3 (on chapter 2). Such activities include, among others, reading books/manuals, individualised projects, group discussion, interpersonal interaction, picture metaphors, storytelling, field trips, and classroom theatre.

### *Step B1: Planning*

According to LPL1 a peculiar feature of this second intervention compared to the first was that there were different topics to be approached and those were not necessarily underestimated by him as it happened in the previous intervention. The idea of implementation was having the students choosing freely to work individually or in groups. In LPL1's words the order was as follows:

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LPL1, MS,     *Let's find the best way possible you want to explain it, if you want to bring anything*  
04/02/2011     *like markers, flipchart papers, and music, whatever possible.*

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Therefore preparation included defining if the presentation was going to be carried out individually or in groups; assigning the tasks or themes and indicating the materials that would be useful for groundwork. Here I understand that, informed by learningshops and reflection on a previous learning opportunity alone and during the mentoring sessions, LPL1 was starting to adopt diversification in planning, which I call LSF planning. In this way, he was not planning for the average controlled, logical, rational, and analytical left brain student. Rather he was addressing the whole-brain spectrum of students whose learning he was planning to facilitate. Hence it was apparent that the feedback from the mentoring session and his increased awareness of his brain profile were contributing for LPL1 to



increase his abilities as independent, self-directed learner. As such he showed increased ability to plan, implement, and monitor his own professional learning process, encapsulated on learning to implement LSF and to carry out action research.

*Steps B2 and B3: Acting and observing the results*

I recall that in this step I put together acting and observing, to a certain extent to avoid repetition since in reality the stages of action research overlap (Kemmis & McTaggart, 2005). The implementation consisted of groups of students preparing themselves and making presentations in the way they found the most suitable to their characteristics and to the topic. The rationale behind this choice of presenting was that freedom of choice allows the student to adopt strategies aligned to one's brain quadrant dominance. In this way the student could be personally involved in the task, making it an internal imposition and, hence, adopting deep learning (Ramsden, 1992). Before the students' presentations, as the left of visual 4.5 shows, LPL1 made a brief overview of the theme to the whole class. This was an opportunity for external learning (A quadrant) which results from authority through lectures (Lumsdaine & Lumsdaine, 1995). After each group presentation LPL1 made comments when necessary and the whole class had the opportunity to ask questions. These were answered mainly by the group, while the lecturer used to back up when he found that the group could not respond satisfactorily. It was provision of more space for interactive learning typical of the C quadrant (Lumsdaine & Lumsdaine, 1995). Besides, I understand LPL1 was facilitating according to values of equality, collaboration and freedom, while encouraging this collaborative and communal meaning-making. With students' permission, data collection took place through video-recording, photography and open-ended SFQ. This questionnaire entailed questions such as what the student liked/disliked in this way of facilitating learning and why; the extent to which the student felt comfortable with the activity carried out and the extent to which he/she felt that the activity contributed to his/her comprehension.

Visualisation of the video-recording data shows that a considerable variety of activity was performed by the students, with particular incidence of simulations, as shown in the right of visual 4.5.



Visual 4.5: Lecturer setting the scene (left); students' theatre (right)



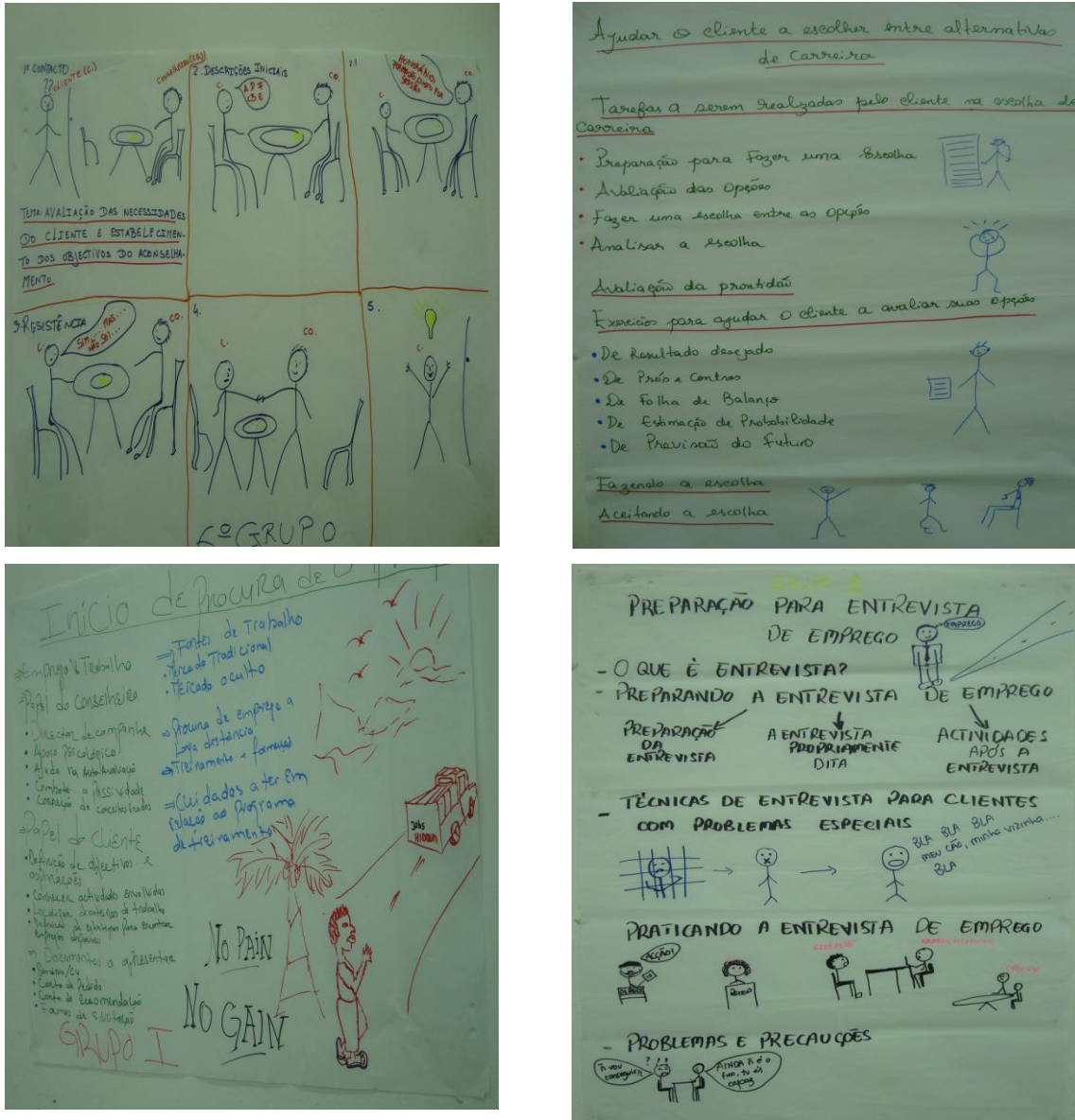
Within this visual the photograph on the right side shows students making theatre, or in Gravett (2005) words, a demonstration. This included background music with one of the students rapping. This theatre was aimed at showing the steps through which one goes, modelling and illustrating how tough the process of the research job is. This was an activity directed at both C and D quadrants, since there was interaction between group members (C) and opportunity for others to visualise (D). I interpret this performance of LPL1, which is largely an outcome of the learningshops, as a kind of diversification of facilitating learning, i.e. an application of LSF. Hence LPL1 managed to implement alternative methods of facilitating learning in order to accommodate the students' preferences and challenge their avoidances. In this way there would not be marginalised students and equality of participation was achieved. I recall that the students' performance is not object of my analysis. Rather it is evidence of my fellow lecturers engagement in promotion of LSF as result of my effort to promote their transformation.

The photographs in visuals 4.5 and 4.6 in the next page show to a certain extent that LPL1 was successful in implementing the principles of LSF, since within the learning opportunity he facilitated he managed to address the four quadrants.

*Step B4: Assessment and reflection on the intervention*

In the appraisal I carried out with LPL1 in our post-learning opportunity mentoring session, he showed that the intervention represented a significant improvement in implementing LSF and promoting student ownership of learning. Therefore LPL1 noticed that there was more enthusiasm than in the first intervention, associated with a higher level of student motivation in putting their abilities in free flow.

Visual 4.6: Students' posters employing drawings and words



There was more student freedom, animation and joyfulness (quadrant D). Analysing the observation sheet data he found that within the 100 minutes there was exploration of all quadrants, although the left hemisphere was still the more stimulated. Therefore the lecturer made a short presentation of the theme, setting the scene for the groups' presentations (A and B quadrants); there were poster presentations (D quadrant), role-play on vocational counselling (C and D quadrants), background music and singing (D quadrant) and oral

presentation based on written notes, words and numbers, made on a flipchart (A, B, and C quadrants).

Visual 4.6 shows that, a part of simulation and theatre, the students used drawings and matchsticks to share their knowledge about “job search”, the theme of the session. Therefore, in the top left, using matchsticks, they present a whole set of steps of client needs assessment and establish the counselling objectives. In the remainder figure students make a combination of words and matchsticks and drawings to show how to help a client in finding a career, how to prepare for an interview and that finding a job is not easy (no pain, no gain!).

LPL1 recognised to have achieved transformation in his practice, as he said:

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LPL1, MS, 04/02/11	<i>The second was completely different, it was a kind of something new. It was practically a matter of changing everything.</i>
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Such transformation is in my view associated with his increased capacity to adopt comprehensive methods of facilitating learning that reached all brain quadrants. But it is also associated with his capacity to work more democratically and cooperatively with his students, as well as to uncover hegemonic assumptions (Brookfield, 1995), through scrutinising his practice in mentoring sessions and continually visualising video-recording of his previous performances with the aim to improve students’ understanding.

In this study I do not present the results of employing the open-ended SFQ since they were deemed to be used by the LPL for personal reflection. However, from the analysis LPL1 did, we found that the experience was rewarding for the students. According to LPL1 in the past students worked with books written in English (unknown to most students). So they had to translate, summarise and present even if many students did not understand since linguistic aspects were not clear (A and B quadrants). LPL1’s understanding is that this intervention created the opportunity for students to look for better understanding, since for one to act (C and D quadrants), one first has to comprehend and discern what one is going to perform (Ramsden, 1992). For LPL1

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LPL1, MS,	<i>many students left with better comprehension of issues that had not been grasped in</i>
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04/02/11 *the past by previous groups of students. This learning opportunity was such a victory to the extent that I was thinking of including the DVD of it in the portfolio I am submitting for promotion to junior lecturer.*

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It is apparent from the extract above that LPL1's increased success also increases his degree of self-motivation to work and learn independently. In this way, he could reflect critically on his achievements, looking back and forth in the pursuit of advantages of his transformation. LPL1 appeared to be highly rewarded and gratified by the results of this experience. Still he portrayed expectations for further improvement, which is typical of a powerful and eager-to-grow beginner in the pursuit of full legitimate participation in his community of practice (Lave & Wenger, 1991). Therefore, LPL1 states the following:

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LPL1, MS, 04/02/11 *I felt some lack of freedom of choice in the sense of the students doing their presentations ... In the next opportunity I would take the students to diversify more the way of presenting ... a common aspect is that most of them used paper and markers. No one created more than that. I don't know if it has to do with the time I gave them which was not enough to create more. Or it has to do with the nature of the explanation I gave them. Maybe I should look for better ways because there are many more ways and topics that should be explored, such as small games. Probably in the next opportunities I will try to have the students tackling these issues in a truly diversified way ... although I talk about freedom, telling them that they must be free to take the theme and explore the way they feel they understood, it did not truly happen. It did not happen to the extent it was expected. Of course something good and important happened, but not to the expected extent. I expected a bit more, like a declamation, things like this In terms of content [what they did] it was fine, but the way they went about it was not completely enriching. It was important, but not achieving the maximum I expected.*

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The LPL1 quote above shows the transformation that occurred in his lecturing practice as a result of his open-mindedness to adopt the innovation. It also shows the enthusiasm he portrayed associated with the success he achieved. The same quote provides evidence of the level of critical attitude he exhibits toward his practice.

My analysis of LPL1's transformation of his practice as associated with cycle B of his action research shows that he displayed a great transition from intellectual to procedural development, to use Evans's (2002) words. In the first cycle he was conscious of difference in learning styles, and the need to diversify methods of facilitating learning. But in cycle A he

could not put into practice such knowledge. In cycle B he managed to implement the new knowledge.

LPL1 managed to promote diversification in facilitating learning; he managed to stimulate students' active participation and, thus, ownership of learning. This might have been the main transformation I registered in his learning process. In his first intervention he did not give students a choice in how to participate. However, in the second intervention students could freely and equally choose among an array of possible ways to participate in the learning opportunity, putting in place a student-centred approach to learning. In this way he achieved to have the students as co-mediators while he transited to become co-learner.

Secondly, LPL1 managed to use the knowledge of his brain profile to work out of his comfort zone. I recall that according to his brain profile, he has a secondary preference for the D quadrant; however, he managed to have and support students' presentations which were mainly directed to this quadrant, such as role-play and background music.

The third transformation that occurred within LPL1 practice is the awareness and adhesion to action research due to the potentialities he found in it. Therefore, in one of the learningshops he showed that he adopted video-recording and photography as a way of continually collecting data from his practice. Such data, according to him, serves to inform him systematically about what he does and provides hints on how he can improve it.



### 4.9.3 Case study 2 – LPL2

In this case study I report the two cycles of action research that LPL2 carried out under my mentoring in an effort to put into practice his self-regulation skills and to promote constructivist learning. LPL2 is triple dominant with a primary preference for the B, C and D quadrants and a secondary preference for the A quadrant. His code is 2-1-1-1, as figure 4.7 conveys.

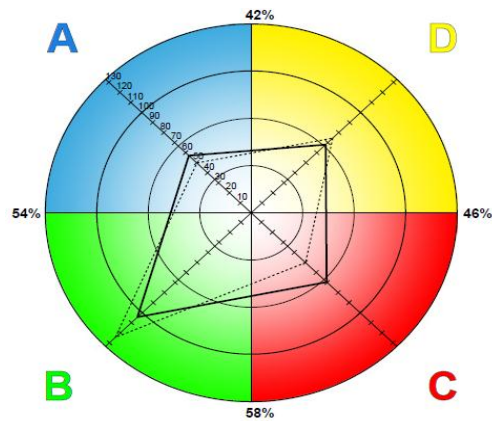


Figure 4.7: LPL2's brain profile

Analysing LPL2 brain profile and considering the requirements of action research, I previewed that he would probably be puzzled by planning and observing. Both steps involve the A quadrant, which is his secondary preference. Still this would be balanced by the involvement of B (in planning), C and D (in observing), which are his primary preferences. Contrarily, he would most probably succeed with acting (C and D) and reflecting (B and C), all of which involve his primary preferences.

LPL2 transformation implied among others the development of dimensions linked to the A quadrant, which is his secondary preference. Therefore, he was challenged to develop factual, analytical and quantitative thinking within this quadrant. Within his primarily preferred quadrants, he had to work in order to improve his musical, spiritual, intuitive and symbolic thinking (C quadrant), and artistic, spatial, simultaneous, and creative thinking (D).

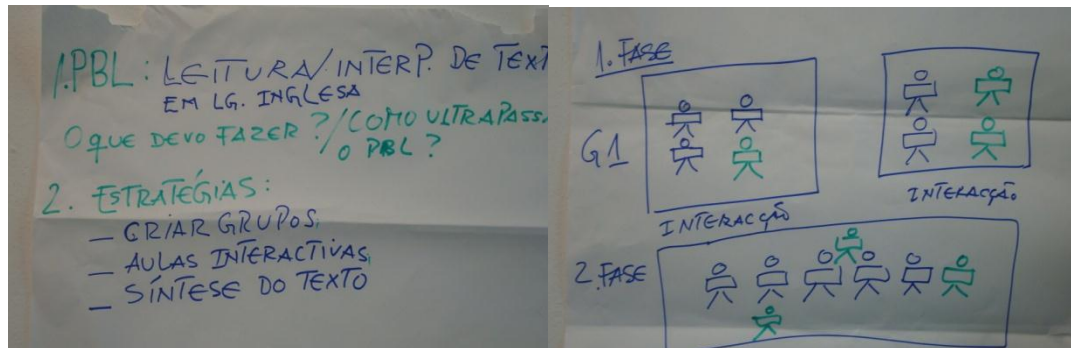
#### *Stating the problem or innovative idea*

LPL2 initiated his action research within the learningshops where I challenged all the LPLs to compose their asset-based action research proposals. As depicted in visual 4.7, LPL2 was concerned with helping low achieving students in reading and interpreting in local Mozambican languages.

He thought that creating groups, promoting interactive lecturing sessions and taking the students to produce text synthesis would be an appropriate strategy toward solving this problem. Therefore he adopted a deficit-based approach (Du Toit, 2008). The

implementation of this strategy would entail two phases as shown on the right of visual 4.7. Therefore in the first phase he would create four-member mixed ability groups, where at least one student should be a higher achiever who could act as crutch for the remaining members. In the second phase the size of the group would be increased to up to eight, including one or two high achievers.

Visual 4.7: LPL2's action research problem/innovative idea



It is significant to observe that the way LPL2 conceived his proposal he used a strategy integrating both B and D quadrants. Therefore, in the left photograph of visual 4.7, he presents the problem and intervention strategies through wording and numbering in a planned, organised and sequential way (B quadrant). On the right photograph, he synthesises the implementation of the strategy using drawings and matchsticks (D). I interpret the use of this form of representation linked to his attachment to holistic and imaginative thinking and the preference for approaches such as providing an overview and idea chunks.

### *Setting the project scene*

The overarching idea behind implementing LSF is that learning should be promoted within a constructivist environment. Hence, in order to make the presentation, the students ought first to appropriate the task as their own undertaking. In this way the lecturer is providing assistance that will support the learner to make meaning of the context in which the task is embedded (Duffy & Jonassen, 1992). Therefore LPL2 wanted every student to practise and feel what it is to learn to read and write in a local language based on what is said to be the analytic-synthetic method of primary school learners.



LPL2's intention was to promote students' knowledge construction through active learning. In this way, he wanted student to act on, shape and form the content (Gravett, 2005). He envisaged activities where students would perform the procedures and stand back and see why they are necessary, where they fitted or did not fit (Laurillard, 1993). He wanted students to know how they could proceed to teach other people through such methods so that they could have better comprehension. I understand that he was trying to promote students ownership of learning within the process of acquiring technical skills associated with implementing the analytic-synthetic method. Moreover, the other reality is having them as university learners, who should understand and master the principles and procedures of employing the method. All these ideas appeared to compose the whole-brain spectrum and its effective implementation seemed to be going to represent a successful adoption of LSF. Still the main challenge facing LPL2 was the extent to which he could integrate all the students by applying the method and experience the varying positions from learner (who was learning the method) to teacher (who is teaching the method).

### *Cycle A*

#### *Step A1: Planning*

For this intervention LPL2 required the students to do practical work, since he wanted them to understand the procedures and to develop the adequate technical skills for the implementation of the analytic-synthetic method. Therefore, as part of the preparatory effort, for the session he advanced an anticipatory demonstration about employing the method of reading and writing in a local language. Hence he was promoting what Lumsdaine and Lumsdaine (1995) term *external learning* (A quadrant). This mode of learning entails acquisition of knowledge from authority through lectures.

Then LPL2 proceeded to preparing the intervention creating small groups of up to four elements, as previewed in his proposal. These groups were naturally composed on the basis of their language, since each group was going to practise its mother tongue. Hence, he was aligning with experiential learning which determines that for understanding and learning to take place the learner has to examine the experience (Duffy & Jonassen, 1992). Accordingly, LPL2 required students to exchange the roles of teacher and learner during the exercise, so that all of them could feel the experience of being teacher and learner in the use of this method. Therefore, for the sake of comprehension, I use the words *student-*

*acting-as-teacher* and *student-acting-as-learner* to refer to the roles played by the students within the intervention.

LPL2 prepared himself through readings on the use of the method since he was going to manage groups working on strange languages for him. By assigning students the task of making presentations he was becoming a co-learner, while the students were becoming co-mediators (Gravett, 2005). On becoming a co-learner he was about to construct his own knowledge based on scrutinising the students' voices while they were going to depend on one another rather than depend exclusively on his authority (Bruffee, 1999). In terms of tangible material, LPL2 just collected flipchart paper and markers. Therefore some groups were going to use the blackboard, while others were going to work on flipcharts. All groups were going to prepare and practise their tasks within the same time and space boundaries.

#### *Steps A2 and A3: Acting and observing the results*

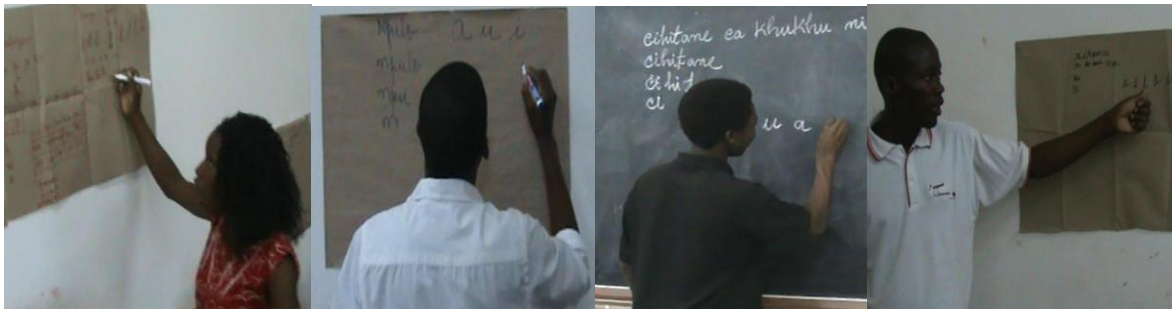
Action consisted of implementing the intervention. For observation LPL2 proceeded to data collection, employing video-recording and taking photographs. These tasks were carried out by his fellow junior lecturer, LPL6 and students. LPL2 created the small groups that prepared and practised the method of learning reading and writing in local languages. Here he accommodated the interpersonal interactive C quadrant since the task implied collaborative learning. In this way he was striving to live in direction of the values of collaboration and equality. Hence students were challenged with opportunities to examine their beliefs, thoughts and actions, seeking new information in a way to assist one another to increase self-confidence (Gravett, 2005).

In visual 4.8 I illustrate a role-play activity, where one student was acting as a teacher and the remaining ones were acting as learners. Such student activity is the outcome and material for lecturer reflection on the learning process. Therefore these illustrations provide evidence of the lecturer's professional learning as it takes place within learningshops and mentoring sessions. Students-acting-as-learners had to learn to read and write in their local language. In this method the learning proceeds from a phrase to a word and finally to a syllable. The session has a sequence of steps, which is B quadrant prone. This is procedural learning which occurs by means of methodical and sequential testing of the

material (Lumsdaine & Lumsdaine, 1995) and according to Heron (as quoted by Postle, 2003) it is conducive to the development of competence in practicing skills.

Visual 4.8 shows an effort toward the promotion of D quadrant learning through the use of charts, visualisation and hands-on thinking. Lumsdaine and Lumsdaine (1995) call it internal learning. Therefore the student-acting-as-teacher would use visualisation of the analytic-synthetic method to take their learners (students-acting-as-learners) to understand principles. However, according to LPL2, the student-acting-as-teacher, depending on his capacity, could use other ways of showing that the method was organised in sequence.

Visual 4.8: Students acting as teachers in teaching reading and writing in local language



LPL2 said that, as the facilitator of learning, he was not concerned about understanding what they were talking about. He concentrated on the steps, checking if the student-acting-as-teacher presented and completed correctly the table. The explanation for this lies on his preference for controlled, structured, and organised modes of thinking (De Boer et al, 2012).

Whenever necessary, LPL2 intervened to model, scaffold and coach (Gravett, 2005). He corrected mistakes, highlighted important things and cleared doubts posed by students-acting-as-learners. LPL2 played a very active role, always intervening to demonstrate and support as depicted in visual 4.9.

Visual 4.9. shows that he maintained more support of his authority which promoted A quadrant external learning (Lumsdaine & Lumsdaine, 1995) and B quadrant learning through the self-paced and logical sequential presentation of subject matter. Again, I register here an imbalance in the way he addressed the different brain quadrants as he was devoting more attention to the left brain hemisphere.

Visual 4.9: Lecturer intervention within the simulation of class session



*Step A4: Assessment of and reflection on the intervention*

The general remark made by LPL2 concerning this intervention was that he had not achieved the successful implementation of LSF. He could not find the complete involvement of the students. As he puts it in plain words

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LPL2, MS, 10/04/2010 *I was not able to have all the students going through the same experience ... since the method is very long; some students used to do part of the task, then they felt tired and conceded space for others to continue.*

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In the transcription above I find LPL2 engaging in self-criticism, which then turns into a complaint on the availability of time. This aspect is positive because when a lecturer blames him/herself, he immediately finds that he is the solution and therefore searches for alternative and informed ways of going forward (Brookfield, 1995).

LPL2 observed that he was very rigorous in terms of wanting the students to follow rules, structures and sequences that comprised the analytic-synthetic method they were simulating. I understand that such behaviour was determined by some of the features of his brain quadrant, which include structuring, sequential thinking, teaching, expressing and being critical. Besides these, he gave primacy to implementation and written communication (rather than contemplation and oral communication). Again, I find the features of his brain profile as possible explanation for his behaviour.

In some instances LPL2 recognised that helping understanding does not mean correcting every mistake, neither making them experience a sense of inadequacy (Ramsden, 1992). Therefore, while we were observing the video-recording, he observed that

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LPL2, MS, 10/04/2010 *... it seems that I am intervening too much ... I don't know to what extent this can be useful for the groups ... so looking at individual characteristics, some students wanted to do the method according to their personality, their quadrant dominances. I forced them to be more structured, organised since the method stipulates that. I had never thought that by observing first what they were doing I could understand what the advantage was of having them doing the way they thought they would like to. I cannot figure out if they perform like that because they understood this way or because they cannot follow the method steps.*

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With this self-criticism I envisage LPL2 stressing the need to abandon the method of facilitating learning that strongly relies on his authority in order to do mediated learning. This form of learning entails the lecturer knowing about student learning and about what makes it possible (Laurillard, 1993). LPL2 observed that some students did not appear to be motivated or they did not identify with the required activity. When I asked him what the cause might be, he admitted it would be something related to the brain quadrants, saying

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LPL2, MS, 10/04/2010 *... I see a student ... who seems to be more A dominant ... where there is interaction between students without much obligation [apart from following the method steps] ... he comes up with a lot of seriousness ... I noticed that he did not participate.*

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In the transcription above I observe that he is aware of the need to accommodate the different learning styles. But in practice he had not been able to do so, what is a reminder of the always existing distance between knowing and doing.

I asked him what he could do in order to go beyond the shortcomings of his intervention. LPL2 thought he could provide space for students/groups to practise outside the class session, where he should be invited by the group upon appointment to observe their practice. I found this idea workable, not only in terms of time management but also due to the possibility of most learning occurring outside the classroom, where students have to interact with context and information in order to construct meaning (Ramsden, 1992). He thought that after that he could organise a kind of seminar where all the groups would present the work they had developed. Then all would engage in a small debate to understand to what extent one or the other was able to develop well the activity being

carried out. These are some of the ideas that he had in mind when he transitioned to the cycle B of his action research.

Three aspects appear to represent the transformations that LPL2 embraced as result of the cycle A of his action research. These include awareness of differences in preferred modes of learning (or learning styles), promotion of ownership of learning, and promotion of experiential learning. Concerning the learning styles, I find LPL2 more cognisant of them as most of his analysis of the learning opportunity he facilitated was done in the light of whole brain dominance. He frequently mentioned the extent to which he had managed (or not) to accommodate certain brain dominance.

The need to promote ownership of learning is one of the correlates of LSF and LPL2 showed to have mastered the concept. His whole effort to facilitate learning in the first cycle of his action research was guided by this idea. However, he proved to have grasped the idea that experiential learning is an effective way to promote durable learning. Accordingly, since he wanted all his students to master the analytic-synthetic method, he made an effort to have all of them acting as teacher who facilitated the acquisition of such a method. However, he appeared to be dissatisfied since there were still some shortcomings in the way he pursued to facilitate students learning.

### *Cycle B*

According to Ash and Clayton (2009), getting feedback in combination with opportunities to apply it (e.g. through viewing the video-recording of their intervention) is an approach that helps the lecturer-as-learner to construct meaning not only in relation to content, but also in relation to skills - in this case, learning how to facilitate learning promoting a holistic learning environment, where learners enjoy cooperative learning, freedom, and equal opportunities, irrespective of the brain dominances. That idea is applicable to this situation, since LPL2 appeared to transform his practice as informed by his previous intervention.

The criticism of LPL2 about his own intervention in the first cycle provided the basis for initiating a new action research cycle. Therefore, by sharing the contents of table 2.3, I felt that I was providing him with the tool we would use to promote equal opportunities and freedom of choice implied in LSF. Equally I understand I was stimulating him for the need to



foster the sense of student control over learning and for the recognition that each student learn best in his/her own way (Ramsden, 1992). Further on, I challenged LPL2 to use the open-ended SFQ which would help him to gauge the students' perception of the intervention as well as their satisfaction with it.

In this cycle LPL2 decided that students were going to present reports based on a visit paid to a local primary school (C quadrant). I envisage this decision as framed by the idea that learning occurring in naturalistic and situated contexts is constructivist and synergistic with the context and implies a relation between learner, activity and environment (Laurillard, 1993). Besides, it was an opportunity to integrate theory and practice, while confronting ideas in groups and being challenged to explore actively the learning content (Gravett, 2005). The task was to present the results to the remaining class members, based on a strategy of their own free choice.

#### *Step B1: Planning*

The first preparatory operation was to conceive a detailed programme and schedule for a visit to a primary school (C quadrant). This was a good strategy for students to see applications of theoretical aspects that LPL2 was presenting in class and that appeared to be difficult to understand from a theoretical perspective only. For me, this experience would compose a constructive engagement opportunity for students to search for knowledge actively and interpret results in a spirit of cooperation and individual effort (Ramsden, 1992). Therefore observing class interaction would provide facts to substantiate or confront what they knew about theories. Doing this, he was accommodating knowledge and practice as reciprocally constitutive (Orlikowski, 2002). Accordingly, he was providing space for theory and practice to inform each other through an interactive, cyclical and reflexive process leading to the mutual enhancement (Mann, 2003). Hence it would be an excellent strategy to facilitate learning for both the A and B quadrants, by means of combining fact-based and logical analysis of research findings and cases studies (A quadrant) with skills practice and concrete examples (A quadrant), as De Boer et al (2012) suggest. In this way he informed them about the need and relevance to visit schools. Next, LPL2 created groups which, according to their availability, were deemed to schedule their visiting day.



*Steps B2 and B3: Acting and observing the results*

The implementation consisted on groups of students visiting the primary school on scheduled days, making observations so that they could compose their reports. According to McKeachie (1994), LPL2 had to establish a proper balance between student independence and lecturer control while supervising this experiential learning activity. Therefore he used to accompany them to the schools and distribute them according to the theme the group had to develop. However, he did not enter the classroom so that they could feel free to observe, ask and talk about whatever they found useful and conducive to understanding.

McKeachie (1994) points out that for the lecturer to assure that the experience will be educational, students should compose a written or oral report. Accordingly, following the visits, the students had about a week to compose their reports, with the possibility of meeting the lecturer for explanation and consultation. After that there was a meeting between LPL2 and students in which the presentations were scheduled. Data collection occurred by means of video-recording, photography and students filling in open-ended SFQ. One should bear in mind that we only video-recorded and photographed the presentations, since there was no intention to collect data from the visits students paid to schools.

At the beginning of each learning opportunity, targeting A and B quadrants, LPL2 made a short presentation or lecture. This was aimed at engaging the students, to stimulate their thinking and their desire to find out more about the subject (Ramsden, 1992) as the group presentations were going to be an effort to bridge theory and practice. LPL2 indicates that the majority of students used role-play to present their reports (C and D quadrants) as visual 4.10 illustrates. Still, students applied other ways such as storytelling (D quadrant), PowerPoint presentation (B), flipchart poster (D), and traditional oral presentation (A and B).

On the left of visual 4.10 a group of students make a simulation (C and D) of a learning opportunity in bilingual teaching they observed in a Grade 1 classroom. Then the group summarised what had been observed in the school (A and B). In the right-hand photograph of visual 4.10 there is a group of students making simulation to illustrate transfer of skills from one language context to another. The presentation of the group itself combined an oral presentation and explanation of the concepts (A and B) and dramatisation of what they had observed in practice (C and D). In the end the group presented the main aspects observed

in the school. In both cases, after the presentations the whole class had the opportunity to ask questions for clarification and LPL2 made additional comments.

Visual 4.10: Presentation of visit reports through simulation



*Step B4: Assessment and reflection on the intervention*

For the second intervention I monitored LPL2 to define strategies of facilitating learning according to the whole-brain model. As a result and comparing it to the first intervention, he found that in the second intervention the students enjoyed more freedom. Hence, students could do the presentation according to the strategy they had chosen. As a result, there was a diversification in facilitating learning. This had not happened in the first intervention. There was ample room for promotion of collaborative learning through activities that entailed and resulted in students constructing their knowledge in dialogue with their fellows (Bruffee, 1999). In the learning opportunity there was room to accommodate the four quadrants through adoption of diverse ways of presenting, including paper-based oral presentation (A and B), role-play (C and D), storytelling (D), PowerPoint presentation (B) and flipchart posters (D). In this way, LPL2 was exploring the power of student activity to promote enduring learning. On the other hand, I see change in the classroom dynamics as associated with the rich learning environment LPL2 promoted.

In the second intervention LPL2 was not rigorous in terms of rules, structures and sequences, despite the fact that his preferred quadrant is more structured. In his words

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LPL2,MS 28/02/11	<i>here I was not so much structure-guided. Of course I used a bit of me in the report structure ... here my preferred quadrant intervened again ... but the way of presenting was free of my quadrant.</i>
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Two aspects are patent in this extract. The first is that LPL2 tries to find out the reasons for his behaviour (his preferred quadrant). Interpreting that aspect under the light of Mezirow (1990) I find it meaning the occurrence of transformative learning as result of LPL2 finding out that his assumption (teaching according to ones quadrant is best approach) was faulty. The second aspect is LPL2 awareness for the freedom he gave the student in the presentation, as compared with the first intervention. Here I find occurrence of efforts to promote ownership of student learning, since LPL2 left to the students the responsibility to do what they thought was better for them, especially in the presentations. As result he found that in the learning opportunity there was more student interaction (C quadrant); students felt free to perform.

Continually attempting to learn about students' understanding and trying to devise the impact teaching has on it is what we expect from a competent lecturer (Ramsden, 1992). This idea was underscored by LPL2 when he indicated that from the learningshops he had learned about the need to respect and try to investigate the brain quadrant dominance of each student, understand what the student was like and what was better for him/her. I observe that he appeared to experiment a transformation, since, accommodating Cranton (2010), after questioning and revising previously uncritically assimilated frames of reference (the habit of teaching for the left brain) he made a deep shift towards seeing the students as whole-brained. Therefore, he mentioned that he then had a notion about how to adopt diverse teaching strategies that are inclusive for students, responding to each student's needs. He notes that

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LPL2,MS 28/02/11 *I verified that my assessment focused on what was being presented, irrespective of the quadrant...I observed that this experience helped me to understand that there is a need to diversify my vision of the students, not considering them based on my characteristics. For this reason, during the presentation I paid attention to what the students were saying, from what quadrant he would be acting, what the relevance of the information he conveyed was, etc.*

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In the transcription above I observe consistency between LPL2's awareness of differences in learning styles and efforts to promote learning at these different quadrants. I understand that such consistency results from the transformation that occurred with the analysis of the assumptions and presuppositions which were the base of the actions he carried out in the previous cycle of action research (Mezirow, 1990).

Appreciation of students' behaviour and what they said about the SFQ, demonstrate that they were happy with the activity which they enjoyed a great deal. According to LPL2 students were comfortable since they could choose the strategy more appropriate for them and some reported to have mastered concepts that they could not in previous opportunities.

Analysing LPL2's intervention in cycle B of his action research I concluded that his professional learning entailed mainly an insightful implementation of lessons he had acquired in previous cycle. LPL2 demonstrated a significant grasp of the social constructivist approach while facilitating learning. Accordingly, he provided students with ample opportunities to interact in order to make meaning of their experiences. Linked to this I found LPL2 change in adoption of collaborative learning as an effective tool to facilitate student comprehension.

The other transformation within LPL2's practice is the consistency between his awareness of differences in learning styles and efforts he adopted to promote learning at these different quadrants. Hence, in cycle B, he presented to students a diversified array of possibilities to participate in the learning opportunity. Those were mainly active, interactive and innovative ways of participating, such as role-playing, poems, music, etc. Students could choose the most suitable way, which is supposed to be aligned with their preferred way of learning. Such methods of facilitating learning gave students the possibility to be more in control of their learning process, accepting them as co-mediators and the lecturer as co-learner. For this reason I conclude that one of his transformations consisted of embracing the constructivist, student-centred approach to facilitate student learning.

#### 4.9.4 Case study 3 – LPL3

LPL3 is assistant lecturer in the Faculty of Education. She holds a Master’s degree in the Science of Education. LPL3 came to know that, as figure 4.8 shows, her brain profile is triple dominant represented by the code 1-1-2-1, which means a primary preference for the A, B and D quadrants and a secondary preference for the C quadrant.

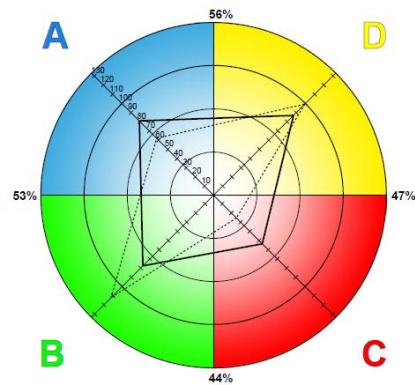


Figure 4.8: LPL3’s brain profile

LPL3 profile suggested that she would easily undertake the planning (A and B) of her action research, which requires her most preferred quadrants. On acting (C and D), observing (A, C and D) and reflecting (B and C) she would be puzzled by the need to implement aspects of the C quadrant, which is her secondary preference. However, the problems with C quadrant would be counterbalanced by the occurrence of A, B and D quadrant elements within each of such steps. These quadrants are LPL3 primary preferences.

LPL3 profile indicates that in pursuing her transformation towards holistic learning, she had to put extra effort on working to develop her emotional, musical, spiritual, and symbolic dimensions all located within her secondary preference (C quadrant). Despite her primary preference for the other quadrants, she had to work in order to improve the quantitative and analytical (A quadrant), sequential and detailed (B), as well as the synthesiser, simultaneous and spatial dimensions (D quadrant).

#### *Stating the innovative idea*

LPL3 started her action research within the frames of the learningshops. The first proposal she conceived was about how LSF could be used to promote the use of informatics packages to analyse qualitative data within the Research Methodology module. Within the learningshops, the other LPLs and I critically examined this proposal. Doing so, we were pursuing proposal viability within the goals and purposes of the learningshops (Von Glasersfeld, 1995). Through these options for discussing and giving feedback to LPLs’ proposals, I was opening room for them to move their reflections from private to the public

domain, along with an empathetic and constructive interrogation of their ideas and anticipatory actions (Crow & Smith, 2005). The feedback indicated that her proposal improvement should include research question directed at her practice in order to be true action research. The question had to mean that LPLs were going to investigate their own practice, as an insider researcher (McNiff & Whitehead, 2006). As a result, and considering LPL3's brain profile, I challenged her to proceed to an asset-based action research on implementing LSF within her lecturing practice within the module she was going to facilitate in the following semester. In this way, instead of struggling to solve a problem (a deficit approach), she would really be approaching her action research with two assets. The first asset was going to be the adoption of the innovative idea of implementing LSF. The second asset was knowing her brain profile; she had to challenge herself in order to facilitate her students' learning in modes beyond her comfort zone as the appropriate approach to developing students' full potential (De Boer et al., 2012). Such efforts imply both metalearning and self-regulated learning. Metalearning was implied in her awareness of preferred (and avoided) modes of learning, which would assist her in controlling her own learning (Dart, 1997). The self-regulation in her professional learning is associated with the fact that, being adult and professional who seeks for continual improvement, she had to set own goals, organise, manage and control resources, as well as self-assess her capacity to learn beyond her comfort zone (Pintrich, 1999; Zimmerman, 1990).

### *Cycle A*

#### *Step A1: Planning*

During the learningshop sessions the features of LSF were presented and there was space to share with the LPLs the different strategies of facilitating learning associated with the four brain quadrants, as depicted in table 2.3, which is a detailed B quadrant account of the association between each brain quadrant and diverse methods of facilitating learning.

LPL3 in planning the implementation of her action research considered the need to touch all the quadrants. Here I notice the emergence of diversification in planning, which implies that she was not planning for the average left brain student, but was planning for the whole brain. Therefore she read widely to acquire knowledge related to LSF in order to effect her intervention. This action was aimed at acquiring the concepts and vocabulary necessary to interpret actions as framed within the LSF. Thus she was a truly self-regulated lecturer, who, given a goal, pursued learning with a minimum of external assistance (Brookfield, 1985).

Hence she prepared and shared reading material with students (A and B quadrants) and considered activities that would complete the whole-brain spectrum. As she says

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LPL3,MS, 02/05/11 *besides having an expositive lecture as such, there was a need of having the students at a certain stage doing practical work. But due to the nature of the task it would not be possible to present and discuss the results on the same day. So the recommendation was that they should present later in written form. So it would be a kind of seminar. They should present a written report of what they would have been discussing in the classroom.*

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I observe many activities she had in mind when planning the learning opportunity accommodating Ramsden (1992) recommendation for combination of methods, since they are conducive to students' active engagement, response to their needs, boost of interest and energy, along with the establishment of uncertainty. In harmony with that, in planning her intervention, LPL3 included individual readings (A and B), lectures (A and B), group work (C), discussion in plenary session (C) and a written essay on the topic under discussion to apply and integrate knowledge (B).

In this sense, while preparing, on the one hand she sought for new texts and book chapters (A). On the other hand she considered that even if some content of the texts or book chapters had already been approached, the definition of the topics would guide the students to what would be important to extract from the reading. Being imaginative and creative (D) she was putting to play the artistry required from competent professional lecturers (Schön, 1983; Moon, 1999). In this regard Brew (2007) indicates that in this time of perplexity, although not easy, innovation in professional development is crucial.

#### *Steps A2 and A3: Acting and observing the results*

The implementation consisted of four basic moments, some of which are depicted in visuals 4.11 and 4.12. In the first moment she led an interactive introduction (C) to the matter that was going to be discussed. In this way she conducted a discussion with students so that the learning opportunity *becomes ours and not mine* (LPL3, MS, 02/05/11). In this way she was promoting student ownership of learning, seeking to move away from a teacher-centred approach in order to adhere to a student-centred one. Equally she was providing opportunities for students to learn by doing, since active student learning results in better understanding (Ramsden, 1992).



Visual 4.11: Interactive introduction to the theme for discussion



This student's active engagement in the process of making meaning put her in a position of co-learner. In this way she vested authority and trust in students as individuals whose distributed knowledge was worth sharing (Bruffee, 1999). Therefore she required students to engage in collaborative learning, discussing themes based on previous readings (A and B). She acted in accordance with the fact that, by reading, the learner acquires the fluency in the language of the text and makes it his/her own (Bruffee, 1999). Therefore reading is one of the effective tools of the constructive learning she was promoting. Reading was going to require them to be attentive to the topics of the learning opportunity. Afterwards she recorded the students' significant answers on the blackboard (A and B). With regard to this she says that

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LPL3, MS, 02/05/11 *[I did] not manage to teach from beginning to end without writing on the blackboard ... it is something that in my view replaces the projection ... if I had a data projector in front I would be projecting the information ... but because I am there talking and because I think that by just talking there are discourse elements that students might miss ... so everything that is very important in the lecturer's understanding, that information student must keep, it is recorded on the blackboard. It is like note-taking by the lecturer which is going to be replicated by the student.*

---

I understood that she used the blackboard as another way to direct students' attention to the topic. This is another strategy aligned with Lumsdaine and Lumsdaine's (1995) external learning from authority.

After the students reading, she delivered a short lecture on the theme (A and B) as visual 4.11 shows, based on the idea that she could employ the lecture to present an overview of the relation between topics (Ramsden, 1992). According to Gravett (2005:46), LPL3

sequenced activities (B quadrant), *starting with a clear and relatively easy task before proceeding to more complex and difficult ones*. Hence she used the moment to pinpoint the most significant elements indicated in the literature concerning the theme under study. While using the blackboard she demonstrated her strong attachment to the B quadrant, since the notes she was making on the blackboard, as students were giving their contribution, were detailed and sequentially organised. Moreover, the visual element, associated with the use of the blackboard, rendered some comfort to the D quadrant. Hence I find her seeking to promote the Internal learning (Lumsdaine & Lumsdaine, 1995). Her intention was to summarise the students' contributions and to bridge theory and practice (B), as it was going to happen in the reflective moments within groups. I understand that the incidence of the B and D quadrants within her strategies to facilitate student learning might be associated with her profile, since her most preferred quadrants include the D (87 points) and B (77) and she selected, among others, logical, factual and organisational as descriptive of her.

The following moment was the group discussion or reflection (C). In that moment she invited students to reflect on the applicability (B) of the issue under discussion to the context of the country or region. The effort of LPL3 carried out to promote students' ability to confront theory as conveyed in the literature and practice by means of reflective learning is remarkable. She was asking the students to discuss gender inequalities within the Mozambican education system. This moment was followed by a presentation to the whole class and discussion followed (C quadrant). I see in this activity an opportunity for students to learn in collaboration, while assessing the logic of own and others' positions (A), to become aware of and formulate problems using information from readings (A and B) and to get timely feedback (Laurillard, 1993; McKeachie, 1994). It was an opportunity for students to verbalise their understanding of the concepts, to reason together while comparing and evaluating explanations (Van Boxtel, Van der Linden & Kanselaar, 2000).

To record the implementation of this action research, video-recording and photography were employed as data collection techniques. Visual 4.12 below depicts some of the moments of LPL3 interventions. In the left photograph in the visual she challenges the students to discuss in groups (C). Visual 4.12 left shows LPL3 moving around to demonstrate her availability to help and advise the groups if there were task misunderstandings (Gravett, 2005).

Visual 4.12: Group work and groups presentation at the plenary session



In the right of the same visual, within the follow-up to share the results of the interaction with the larger group (Gravett, 2005), a group of students makes its oral presentation (A and B) to the plenary, so that common issues can be identified and questions can be raised and answered.

*Step A4: Assessment and reflection on the intervention*

LPL3's reflection shows that her intervention went well. She indicated that the students' feedback on the presentation was positive. For her, students interventions were contextualised and directed specifically at the discussed topic, what meant that the students had had previous contact with the material. LPL3 showed the ability to reflect on her learning opportunity objectively. She was able to focus on aspects like the pedagogical approach adopted and the interchange of the leadership role between her and students. She reported feeling comfortable with both guiding the session and seeing the student in the lead. For her the combination of the two moments was beneficial. As such, she said:

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LPL3, MS, 02/05/11 *We were trying to put the student producing, constructing his/her own knowledge depending on the content to which he/she was orientated. So what I think is that the expositive component provided by the lecturer in the class is not enough. There is a need also to have the students taking the lead, showing to what extent they understood the content, or how did they understand the content ... to a certain extent when the students take the lead in the session it is an opportunity to see ... to assess not only what they know or don't know or don't understand, but also to see what are the difficulties students faced when confronted with certain content and maybe to orientate them in what should be the way of presenting work to an audience.*

---

Here she acknowledged the importance of promoting students' active engagement with the material and sharing comprehension. I find her making explicit her personal theory of

learning, namely social constructivist. But it is also clear that she was concerned about assessing the extent to which the students grasped the main concepts and theories. Therefore, to make sure that that main issues were mastered she did a short presentation (A and B quadrant). To promote opportunity for student construction of knowledge and ownership of learning she opened space for students to co-mediate while she acted as co-learner. Concerning this interchange, she finds that the students responded positively to both modalities, because in her opinion working in groups is an opportunity to change impressions. It is a space for students to compare and evaluate of explanations, as well as to elaborate conflicts (Van Boxtel et all, 2000). Hence, students have the opportunity to interact (C). Since they become co-mediators and she becomes co-learner (Gravett, 2005), the authoritarian view of the lecturer vanishes. Hence the tension situation of being attentive disappear, while they get into an environment of freedom and equality.

A component of the implementation that could be enhanced is the need to have certain groups participating more actively and freely. LPL3 acknowledges that saying

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LPL3, MS, *Something that did not run well is that certain groups did not participate the way it was*  
02/05/11 *expected.*

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This shortcoming was determined by two reasons. First is that LPL3 defined beforehand how the activities would be implemented. Second, as she indicates, some students were omitted from this process because when the topic for discussion was launched the group did not react. Therefore she decided to assign the tasks to other groups so that they could avoid remaining in a stuck environment waiting for a certain group to respond to the solicitation.

An additional aspect in need of improvement is the provision to students of more time to prepare preferable outside the classroom the presentation. According to LPL3 this can be evidenced by the fact that, during the presentation, students remained dependent on written notes (A and B) produced during the discussion and they could not deduce more from that. Apart from the written notes they could not contribute anything consistent. I recall with this regard Ramsden (1992) saying that students have more possibilities to make meaning when, learning outside the classroom.

I challenged LPL3 to indicate if her intervention accommodated all the quadrants. LPL3 reckoned that it accommodated part of the quadrants. For instance, she observed that she had to explore the C quadrant more, which represents her secondary preference. Therefore she had to think of embracing methods of facilitating learning such as role playing, storytelling and sharing personal experiences among others. Therefore she said that

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LPL3, MS, 02/05/11 *I would explore the possibility of having the students doing their intervention still during the session. It would be a seminar, more than having the lecturer arriving and presenting the first part and orientate. It would not be having the students preparing and presenting, but it would be really a session in which we have diverse interventions, without being necessarily the group members. We would have a theme, topics, issues to discuss, a moderator/chairperson and the session could go on. And in the end we could do a kind of summary of the discussed issues.*

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Despite such self-criticism, I find the mention of seminar a clue for her strong attachment to the A and B quadrants, which makes sense considering that transformative learning requires time to occur, since it is not an integral element in the immediate action (Mezirow, 1990:13). Looking again at LPL3's implementation I notice that she provided her students with a rich variation of activities. However, although exploring group work (C), she still had to work more on the right hemisphere, since many of the activities she set were linked to the left. In fact she employed individual reading (A and B), lectures (A and B), group work (C), plenary session discussion (C) and written essay (A and B). This is supported by the analysis of the observation sheet. Therefore she explored more the external (A) and procedural (B) learning (Lumsdaine & Lumsdaine, 1995).

My analysis of LPL3's intervention shows that, linked to the content of the learningshops, she portrayed a great concern with promoting constructivist learning, ownership of learning and diversification in planning. Therefore, while planning her learning opportunity, she included active and interactive methods linked to the different brain quadrants. LPL3 demonstrated concern with promoting student ownership of learning. In this sense she wanted to have the students actively engaged in constructing meaning.

Overall I found in LPL3's intervention a richness of strategies to promote student understanding. However, her sessions clearly missed the imagination, visualisation, spontaneity, emotional involvement and the playful approaches typical of the right

hemisphere. The presence of these elements, which is essential for whole-brain functioning, and is associated with longer retention and understanding, would probably reduce the monotony she reported to have noticed. In view of this I would challenge her to promote more student freedom of choice. For instance, she could explore the possibilities presented in table 2.3 through which there is wide room for students to choose the presentation modality suitable to their preference. These possibilities would probably open up space for the equal participation of those students who withdrew themselves. And it would challenge her to work out of her comfort zone, improving the skills related to the C and D quadrants.

#### 4.9.5 Case study 4 – LPL4

LPL4 is a junior lecturer in the Faculty of Education. She obtained a Bachelor's degree at this institution. Her preference code is 2-1-1-1, as figure 4.9 shows. Her primary preference for the C quadrant (90) and D (81) is further matched by two prominent traits, namely timidity and being an introverted person. Working with her was challenging for me, since I had to put into practice my skills to promote a constructivist environment within her professional learning process.

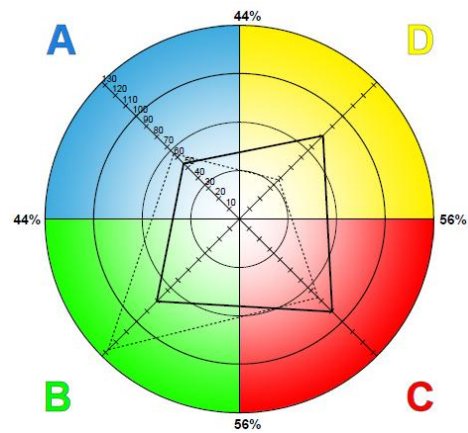


Figure 4.9: LPL4's brain profile

LPL4 profile indicated that she was going to be puzzled while planning (A and B) and observing (A, C and D), since these steps require the A quadrant, which is her secondary preference. Still, such puzzlement would be minimised by the occurrence of B, C and D related elements within such steps. LPL4 has primary preference for these quadrants. On the contrary, her profile suggested that she would succeed on acting (C and D) and reflecting (B and C), which require all her primary preferences.

According to her brain profile, LPL4 transformation would consist among others on the development of dimensions linked to the A quadrant, which is her secondary preference. Hence, the challenge for her to engage in holistic learning would be to develop factual, analytical and quantitative thinking within this quadrant. Within her primarily preferred quadrants, she had to work in order to improve her sequential, detailed, dominant and speaker (B), musical and symbolic thinking (C quadrant), as well as artistic, synthesiser, spatial, and simultaneous dimensions (D).

#### *Stating the problem or the innovative idea*

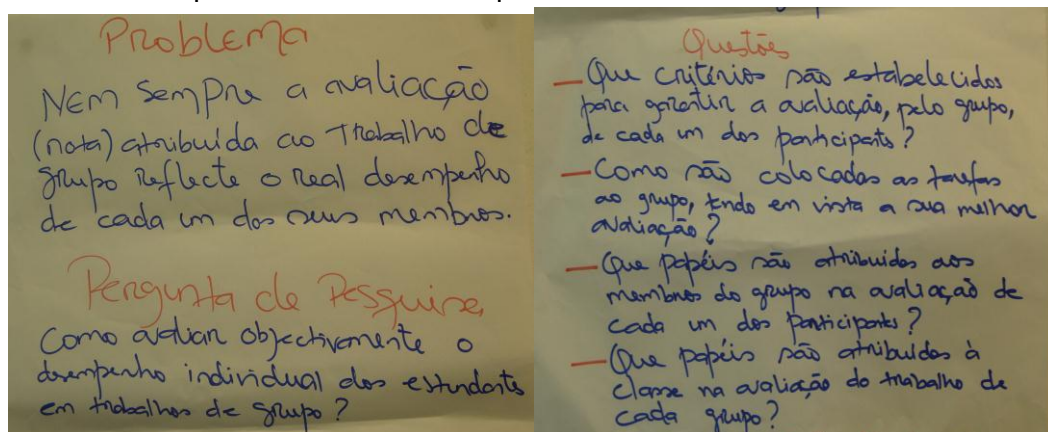
LPL4 initiated her action research within the learningshops like other LPLs. Working with another LPL in pairs, LPL4 conceived a research proposal, with a problem, research



questions and critical questions, as illustrated in visual 4.13. She was addressing a problem according to which assessment of group work does not always reflect the real performance of each group member.

The feedback from other LPLs and me indicated that in general the proposal addressed a relevant issue within lecturing practice. From other LPL's reactions, I understood that this was an opportunity for them to develop understanding through interpretation and reflection on personal experience as matched with that of others (Harrison et al., 2005). In this way the learningshops were a space for LPLs to become resources for one another. They were allowing connection and sharing experience and the consequent interpretation and the assimilation of information and knowledge of personal experiences and prior learning (Klasen & Clutterbuck, 2002).

Visual 4.13: LPL4's problem and research questions



Connected to the problems LPL4 presented in visual 4.13, the learningshop participants made other comments to co-substantiate the usefulness of the assessment issue, such as the relevance of assessment procedures that are differentiated according to the student learning styles.

#### *Setting the project scene*

During the mentoring session I understood LPL4's passion about assessment and some concerns with teachers' practices and her students' performance when it comes to assessment matters. In my understanding, she was highly motivated by tackling assessment matter, since it is a way to capture fairly and (hopefully) accurately what one has grasped

within the learning process. Later I realized that such affection to assessment was triggered by her previous experiences where students had setbacks to understand the *what is, how to compose* and *why to employ* assessment. She said:

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LPL4, MS, 25/02/10 *The conception of an assessment instrument is a somewhat complicated activity. It does not seem to be, but at its heart when the student has to conceive an instrument he/she appears to be baffled because he/she has to see what the objectives are, what the contents are, and how the contents were tackled in the classroom.*

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Such student bafflement might be determined by many factors, including the students' background, the learning material, as well as the strategy for facilitating learning. These are aligned with a baseline study. But a baseline study was distant of the objectives of this part of the study – to provide the lecturer with the opportunity to reflect on her practice, while developing skills to carry out small-scale action research with a view to transforming that practice. Therefore, in a joint decision, we established that an effort was going to be directed at the process of facilitating learning, particularly because she was lecturing a group of prospective teachers who should first understand the above mentioned *what, how* and *why* of the assessment. We were considering working out the innovative idea of implementing LSF as a strategy to promote student ownership of learning. In this sense I challenged LPL4 to carry out an intervention on the adoption of LSF to facilitate learning of assessment strategies by prospective teachers.

### *Cycle A*

#### *Step A1: Planning*

In preparing her intervention LPL4 planned her learning opportunity on assessment matter. It was going to be composed of two parts. In the first part, not subject to analysis here, the new content was delivered in a lecture-like manner (A and B) with a tendency to interactive fashion (C). This combination is deemed to provide space for sharing information, while developing students' understanding of concepts and principles (McKeachie, 1994). For the second part students had to do practical work (C). For this purpose LPL4 explained that this practical work was going to be carried out in groups (C) of different sizes of up to eight elements. She delineated that she was going to assign to the groups as a task to elaborate on assessment instruments. In order to make it easy to correct and to avoid deviation from the main objective, as she said, all groups were going to have a common theme to be

assessed by the instrument. Each student was supposed to have done prior readings (A and B), since she had already provided students with learning material and had supplied additional references (A and B) for those who would need them as part of the preparatory process. Apparently she knew that she lacked profound theoretical knowledge-base about LSF that would assist her to manage the learning opportunity. Students can notice lecturer unpreparedness, manifested among others through insecurity (Druger, 2005). Hence, as self-regulated professional learner, LPL4 did extensive reading on assessment and strategies to implement LSF (A and B).

*Steps A2 and A3: Acting and observing the results*

The implementation of the intervention took place in three moments. In the first, following Ramsden (1992), she did an introduction to the session (A and B), briefing the students and providing an overview of the topic *Assessment of student learning*. Following, there was a tentative joint decision about what would be the theme on which students had to work. She opened space for them to define it. The second moment entailed the composition of groups and the assignment of the group work. The groups were composed according to students' affinity or by proximity. Then the groups proceeded to the work consisting of composing one assessment instrument – whether diagnostic, formative or summative, taking into account the theme jointly defined (C and D).

LPL4 moved around the amphitheatre and through the groups, as McKeachie (1994) recommends, monitoring the group activities, listening whenever asked to do so, and assuring that students were on the right track. These moments were registered and are depicted in visual 4.14.

Visual 4.14: Listening, monitoring and coaching the group work



The third moment of the implementation entailed groups' presentation and discussion (C and D). This moment allowed students to share their points of view, ask questions fearlessly and unashamedly, and get timely feedback (Laurillard, 1993; McKeachie, 1994). All these three moments were recorded by means of photographs and video-recording, and were later analysed in the mentoring session. These were the main means of data collection employed in the action research.

Visual 4.14 shows LPL4 listening to students' inquiries (photograph in the left) and giving explanations conducive to reframing the students' comprehension of the task (photograph in the right). In both moments I find the occurrence of the lecturer actions aimed at accommodating the C quadrant through interaction and A quadrant external learning through the authority of the lecturer.

*Step A4: Assessment and reflection on the intervention*

After the intervention I met LPL4 to observe, analyse and reflect on the learning opportunity in a mentoring session. I mainly asked questions, challenged her, and whenever necessary provided support but avoided to supply answers. For this purpose, as explained, I asked questions following some stages of Gibbs' reflective cycle (Moon, 1999). What I noticed was that her main focus of analysis was herself, an option that harmonised with my intention of finding out the extent to which the lecturers (LPLs) developed their professional learning from the learningshops and mentoring sessions. As it can be observed in all the case studies, I always make reference and present evidence of student performance, although students are not the focus of my study. I tried to promote lecturers' professional learning which, according to Daley (2000), should take place through constructivist and transformative processes of applying new knowledge (LSF). Therefore I decided that I could not consider the lecturers' professional learning without mentioning their students' learning (which might be the mirror of lecturer learning).

According to Rosenholtz (as quoted by De Boer & van den Berg, 2011), within the process of seeking to transform their efforts to facilitate learning lecturers may go through various stage of thinking, feelings and behaviours that can involve doubt, bewilderment, anxiety, lost of control, and redefinition of intent or purpose of teaching. In the next paragraphs I try to show how I find this situation applicable to the experience LPL4 has gone through within this

endeavour. Within the mentoring session to analyse her performance, I perceived that LPL4 was not satisfied with her experience as the first aspect she pointed out was that

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LPL4, MS, 25/02/10 *I was nervous... I tried to do an introduction of the session ... I created an opportunity for them to define [the theme], but in the end I decided about the theme in which they had to work. I did not look at what the ... styles... the students' preferences were. Moreover, while composing the groups I did not look at that aspect. The groups were composed on the basis of affinity, by proximity ... taking into account that I had been working with them for two/three months, I more or less knew each student ... I think I had to help the students composing the groups since there were those groups that were formed because all of them were talkative and all were dynamic. Then there was a group of which all students were somehow timid ...*

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From LPL4's statement above I realised she was knowledgeable about LSF and about the need to compose groups that would work effectively, although she did not manage to put such knowledge to work. This, for me, was a good starting point to implement the principles of LSF. To support her, I engaged in effort to elucidate her that in trying an innovation we must be aware that activities may not work the way they are intended to and that mistakes are an important part of the professional learning process (Budge & Clarke, 2012).

Then, following the 'action plan' stage of Gibbs's reflective cycle (Moon, 1999), I asked what she would do differently if she could go back. In doing so I had in mind that only through mindful processing and questioning her beliefs she would be able to transform her practice (Kraft, 2002). Exploring alternative understandings (Harrison et al., 2005), LPL4 stated she would do a brief introduction, the groups would up to 4 elements each and she would compose the groups according to the students' learning styles.

Visual 4.15: group work in amphitheatre



Admittedly it is true that the classroom conditions were not conducive to group work. While group work should ideally occur in a flexibly arranged classroom where students would be seated facing one another, this learning opportunity occurred in an amphitheatre, as visual 4.15 shows. In terms of the interaction between students and even for the lecturer to move in order to monitor the group work and to explain what they should be doing, it was difficult. Therefore students were not comfortable and their attention was diverted.

When I asked her how successful she had been to implement LSF, LPL4 said there was no relationship between her intervention and LSF. She appeared to experience the confusion, doubt, and stress that certain lecturers experience while seeking to implement changes within their practice (de Boer and van den Berg, 2001).

I observe that during this mentoring practice I tried to balance support and challenge in mentoring LPL4. According to Harrison et al. (2005), these key ingredients of mentoring and balance are essential, since challenge without support might result in the development of survival skills (or withdrawal), while support without challenge may result in no transformation, confirmation of what already exists, including fault behaviour. Essentially, I was helping her to identify her beliefs and to work with them to master impediments to understanding (Dart, 1997).

Although LPL4 was notably dissatisfied with her performance, I observed that, as informed by learningshops, her self-analysis in the mentoring session expressed a kind of attitudinal change or growth, which was encapsulated in her self-criticism and consideration of alternatives to improve her practice. I observed her performance falling short of the implementation of LSF and thinking of new ways to go about and even showing an eagerness to progress to a new intervention that would help her surpass her previous performance. Therefore, as I made sense of her analysis, she was thinking of a new plan for the learning opportunity, which was going to be diversified and aimed at promoting student ownership of learning.

### *Cycle B*

During our analysis of the first intervention LPL4 looked back on her prior action, focusing especially on the process and procedure she had followed to facilitate student learning to see if they were consistent with her values and goals (Mezirow, 1990). LPL4's reflection on



her previous learning opportunity showed that she was puzzled about and not satisfied with her performance. Co-substantiating that critical reflection enables the individual to correct distortions (Mezirow, 1990), LPL4 made an appeal: *Can I do another video-recording with first semester students? But it will not be with this same group. It will be with others* (LPL4, MS, 11/04/11). It was clear that her intention was to improve her performance.

Considering such a proposal but also the criticism concerning her performance, we decided to proceed to cycle B of LPL4's action research. In the intervention LPL4 pursued going beyond her own shortcomings in cycle A. But it seemed that for her there was one she believed was possible to surmount. This was the facilitation of a truly LSF learning opportunity. In doing all of this, I encouraged her to take risks, assisting her in creating an environment where the possibility of changing beliefs about teaching and learning may occur (Budge & Clarke, 2012:63).

#### *Step B1: Planning*

The second intervention was about types of assessment as well. Students had to prepare the lesson according to their chosen means. According to Ramsden (1992) teaching methods that require students to be involved in activity, to solve problems and to learn cooperatively elicit active engagement, imaginative inquiry and allow students to control their learning activity, accommodating their preferred ways of learning. And this is associated with students adopting deep learning approaches. Therefore LPL4 opened up space for students to choose whether the presentation would be by poster, playing theatre, poem, storytelling, etc. In this way, she was promoting the freedom of choice and equal opportunities for learning that are required by LSF. The central issue was that they had to approach three kinds of assessment. They were going to do it in groups as well (C quadrant) in order to gain mutual support and stimulation, opportunity for elaboration and develop interpersonal skills (McKeachie, 1994). This approach would ensure that LPL4 lives according to the values of collaboration, freedom, and equality to which we are attached.

The preparation entailed composing the groups, assigning the tasks and providing reading material and additional references (A and B quadrants) for students preparation. Differently from the first intervention, students were going to prepare the presentation in their own time



outside the frames of the learning opportunity session. Here I find LPL4 acknowledging the importance of student independence for understanding (Ramsden, 1992).

LPL4 had to convey confidence regarding subject matter competency conducive to a positive learning environment (Druger, 2005). For that purpose, she did extensive reading (A and B) and prepared her summaries (D quadrant). These would assist her in providing guidance to herself both during and after the presentation, since she reserved for her the task of doing alignment after the presentations and had to be able to deal with the different strategies the student would use. She said that once, for instance, a group had missed an important aspect and she had to provide meaningful guidance. Therefore, she was adopting a diversification in planning the learning opportunity.

*Steps B2 and B3. Acting and observing the results*

At this stage, there was room for presentations, questioning, explanations of doubts and comments. As informed by learningshop sessions and discussions and mentoring sessions, LPL4 appeared to have learned to differentiate the ways of facilitating learning according to learning styles. In this respect I bore in mind that lecturer professional learning is the focus of my study and that I had to present the student activities as the outcome of such a lecturer professional learning process. Therefore the first moment of this learning opportunity involved her introducing the session and reminding students about the principles of the activity that was going to happen (A quadrant). The following moment consisted of students in groups doing their presentations. The presentation format varied according to the students' free choice. Therefore, as I portray in visual 4.16, there were those who preferred simulation of a learning opportunity (C and D), one group did a poem presentation (D) while others presented posters (D), diagrams (D) and the traditional oral presentation (A and B).

In visual 4.16 (left) there is a group doing role-play (D quadrant) of a learning opportunity aimed at demonstrating the three kinds of assessment. In the role-play activity the group represented a primary school class, in the subject matter was "Portuguese language".

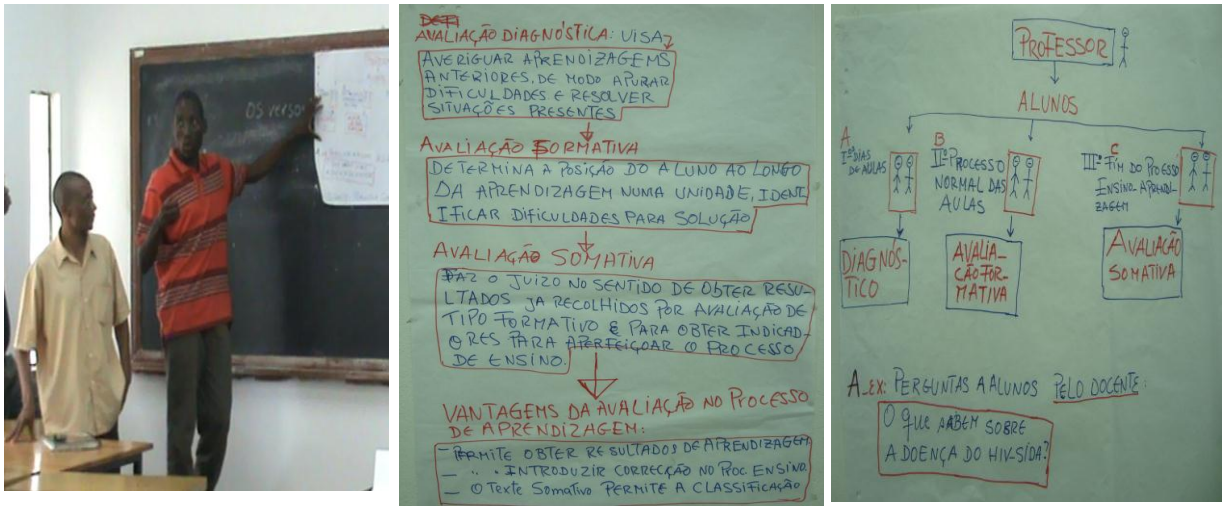
Visual 4.16: Students presentations through simulation and poem



In the photograph on the right in visual 4.16 a group presents, through a written poster, an oral poem (A and B) about assessment, its nature, and types (D). They made a normal poster written in prose (A and B), not in verse. They made their notes in a hierarchical structure of categories and sub-categories (Voges, 2005).

In the left side of visual 4.17 there is a photograph of a group making oral presentation (A and B) about assessment. The presentation consists of explaining the poster presented in the centre of the same visual. I notice here a combination of the four quadrants.

Visual 4.17: Variation in students presentation



Apart from letters and words (A and B) there was trial to use imagination and visualisation when the groups employ diagrams (C and D), drawings of matchsticks (C and D) as well as colour variation to portray ideas, as depicted in the right side of visual 4.17.

Afterwards the whole class asked questions in the pursuit of clarity. Finally the lecturer made comments. This happened immediately after the group presentation and at the end as a summary of the session. Then students were asked to fill in the open-ended SFQ. In order to register these moments both photographs and video-recording were employed as data collection instruments.

#### *Step B4. Assessment and reflection on the intervention*

During the mentoring session to analyse cycle B I found myself interacting with a happier, optimistic LPL4, although still patterning her peculiar lack of confidence. LPL4 indicated that in general the intervention was good, as she said.

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LPL4, MS, 11/04/10 *the groups went well ... the groups entered approaching ... especially the last group talked about the three types of assessment, it showed the importance of the three kinds of assessment, and when these take place. I think this went well.*

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In comparing the two interventions, LPL4, said that the second was better than the first, in which all the students had to work in the same way; all had to conceive an assessment instrument. In the second there was diversity and they could choose among role-play, poem, and poster. There was space for students' imagination, spatial exploitation, spontaneity, freedom and excitement. The whole class enjoyed the opportunity.

For her the main challenge was to understand the different ways students were presenting the assignments. But, as she said,

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LPL4, MS, 11/04/10 *after I had attended the learningshops and shared this experience, I changed gradually. Now it is normal to find me in my lecturing sessions giving diversified tasks, promoting discussions, etc. thanks to that experience. I think it is something interesting. I feel that we could think about this because teaching styles will influence the students' learning.*

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My analysis of LPL4's case study shows that from the first to the second cycle of her action research she showed significant improvement as informed by learningshop inputs and reflections that occurred in the mentoring sessions. I realised improvements both in attitudinal/intellectual and functional/behavioural (Evans, 2002) spheres, since she went beyond simple demonstration of acquaintance with the importance of knowing and accommodating the difference brain quadrants. Such improvement at the procedural level was patent when she promoted student ownership of learning; she negotiated with students suitable methods of facilitating learning, and provided them with opportunities to construct meaning. At the end of the second cycle of action research, LPL4 reflected more objectively on student performance as elicited by her action. In the first cycle she appeared to be blocked, ashamed and sad about her performance. This means that both her reflection on her first intervention and the support she got from the mentoring session contributed to her professional growth.

#### 4.9.6 Case study 5 – LPL5

LPL5 holds a PhD in Educational Sciences. His profile is double dominant, as figure 4.10 shows. The HBDI result show that LPL5's profile is double dominant and his preference code is 2-1-1-2, indicating that LPL5 has a very strong preference for conservative thinking and controlled behaviour with a desire for organisation and structures as well as detail and accuracy.

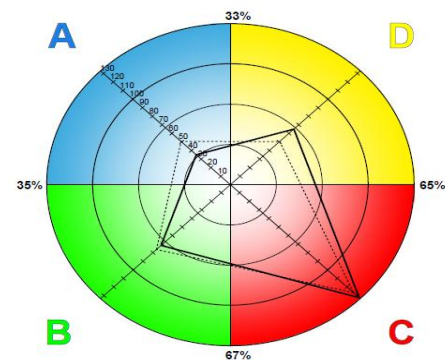


Figure 4.10: LPL5's brain profile

According to his profile overlay, LPL5 is concerned with details, portraying emotional and interpersonal preferences, as well as an interest in music and a sense of spirituality. Concerning his engagement with action research, LPL5 brain profile suggested that he would face certain difficulties with planning (A and B), acting (C and D), and observing (A, C and D), since all of these steps require elements of A and D quadrants, which are his secondary preferences. However, such difficulties would be counterbalanced by the requirement of his primary preferences (B and C). The requirement for these quadrants for reflection was a hint that he would perform well in that step.

LPL5 profile shows that, in pursuing his transformation towards holistic learning, he had to develop dimensions linked to his two secondarily preferred brain quadrants (A and D). Hence he had to put extra effort on working to develop factual, quantitative, and analytical thinking (A quadrant) and imaginative, artistic, synthesiser, simultaneous, and spatial (D quadrant). Within his primarily preferred quadrants he had to work in order to develop controlled, sequential, and dominant (B quadrant), as well as symbolic (C quadrant).

#### *Stating the innovative idea*

Contrary to other LPLs, LPL5 did not develop his own research proposal within the learningshops. However he worked with and supported a fellow and younger LPL in developing his proposal since many of the proposals were developed in groups. I challenged him to initiate a personal venture. This entailed the implementation of LSF in his

practice of facilitating his students' learning, considering his brain profile, which is double dominant (B and C). LPL5 embarked on the idea and he proceeded with the intervention. As a self-regulated professional learner he defined his goals, located resources, implemented facilitation strategies, and assessed progress (Brookfield, 1985).

### *Cycle A*

#### *Step 1: Planning*

For the purpose of this intervention LPL5 thought of starting with a case study. This case study was going to be interpreted and discussed with the students. The use of case appears as an effort to promote students' active and cooperative learning as well as responsibility (Ramsden, 1992). Besides, through discussion of the case there would be space for students to communicate their points of view, to interact and get feedback from peers and lecturer (Laurillard, 1993). Hence collaboration would take place. Therefore, his first step was to conceive an imaginary case to be explored and discussed by students.

I find the LPL5's use of a case study holistic for a number of reasons. Firstly, it required students to analyse the case, employing their logical and fact-based thinking (A). Secondly, it implied students looking for details and a sequence of facts while analysing the case (B). Thirdly, the case discussion involved students in engaging in personal interaction (C), integration of ideas, intuition and synthesis (D), and where necessary to put the ideas together, imagine and explore causes and solutions (D).

Having in mind the main objectives he defined for the session, LPL5 carried out reading about motivation that would help him devise the key concepts to be tackled in the session. He also read about LSF in order to acquire the theoretical foundations that would assist him in implementing his intervention. The reading would also help in outlining questions that would guide the discussion with students. Besides this he designed PowerPoint slides that were going to be shared with students.

Before the session there was a lecture (A and B) on "discipline and motivation". This LPL5's decision to present a lecture was guided by a number of reasons, as I outline next. Firstly, the lecturer was going to provide the building blocks for this intervention, despite scholars such as Ramsden (1992) being negative and opposed to lecture. Secondly, sustained by

McKeachie (1994), he might have aimed at summarising material scattered over various sources. In this way he could supply students with up-to-date information in the field and adapt material to the students' needs. The third and probably most compelling reason considering the specific context of Mozambique, might be the fact that lecture would allow him to share with students information that is highly difficult to find, since sources such as books and journals are scarce.

LPL5 planned a thorough variation in the methods of facilitating his students' learning, as informed by learningshops inputs on whole brain model and LSF and following suggestions by many scholars (Ramsden, 1992; Laurillard, 1993; McKeachie, 1994). This diversification in planning represented a step beyond the generalised planning for all students, supposed to be left-brained and guided by logical, rational and analytic thinking. Rather, he appeared to be addressing the diversity of learning styles that occurs in the classroom. Besides, through such a combination of various methods LPL5 would be balancing his own approaches to facilitate learning in order to accommodate their different preferences and challenge their avoidances (Du Toit, De Boer & Steyn, 2004; Du Toit, 2008). Therefore he planned an initial moment of case presentation (A and B), case discussion in small groups and a whole class discussion (C). Those moments would be followed by a summary (D) of the main findings and its linkage to theory on motivation.

#### *Steps A2 and A3: Acting and observing the results*

The implementation of the learning opportunity enclosed different moments. LPL5 started the learning opportunity with the provision of structure rendering confidence, a sense of purpose and excitement to students (Ramsden, 1992). Therefore he introduced the session by giving instructions about procedures to approach the case. It was essentially the promotion external learning (Lumsdaine & Lumsdaine, 1995). Following this he presented the hypothetical case to be analysed by students in groups. As visual 4.18 shows, students interacted in groups (C) to find answers to questions launched by the lecturer.



Visual 4.18: Students discussing the case in groups



LPL5 promoted this discussion with the aim to take students to focus on relevant concepts of the theme at stake, to activate foundational information and to take students to construct their knowledge. I find that LPL5 appeared to promote in his students communicative learning, which *relies on consensual validation of what is asserted* (Mezirow, 1990:10). In order to achieve such communicative learning, students ought to share their understanding of key concepts, and ask and answer questions in pursuit of joint understanding.

The promotion of case discussion within small groups was an additional effort to utilise the values of collaboration within the learning environment. Such collaboration is based on students' sharing ideas and information within an interdependent and supportive environment. This strategy is associated with elevating students' freedom and motivation to conquer ownership of learning (McKeachie, 1994). It is linked to understanding the content and using deep approaches (Ramsden, 1992). Hence it is deemed beneficial to maximising the individual's understanding. LPL5 asked students to engage in debate in a kind of plenary session (C), where different groups were presenting orally (A and B) their interpretation of the case, having in mind the main theme being tackled by the session, which was motivation. This was a constructivist instance for students to examine and refine their understandings, construct meaning through social interaction, sharing of knowledge and exploring opposing views as alternatives (Dart, 1997). Afterwards LPL5 did what he called theoretic systematisation or summary of the topic, and its relationship with other factors (A and B). After the systematisation there was space for students to ask questions in order to clear doubts that could have occurred during the debate or systematisation. All these

moments were registered by means of video-recording and photography as the main data collection instruments, with the consent of students.

### *Assessment of and reflection on the intervention – Cycle 1*

In the mentoring session I tried to promote a constructivist environment. I was guided by the idea that professional learning drives the facilitation. Therefore, I ought to make adjustments to my efforts to enable LPL5 (as a learner) to recognise and assess own relevant ideas and beliefs to find out what is to be learned and how this learning was intended to occur (Dart, 1997). Following the first step of Gibb's reflective cycle (Moon, 1999), LPL5 started the session by giving a clear and consistent description of what had been the learning opportunity, based on visualisation of the video-recording. As LPL5 said,

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LPL5, MS, 11/04/10	<i>It seems that the learning opportunity turned around those axes, the upper left [A quadrant], upper right [D quadrant] and, overall, the lower left [B quadrant]. Marginally there appeared questions of the other quadrant [the C] in the individual discussion.. But it seems that this learning opportunity turned around this triangle [A, B and D].</i>
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From his analysis it turned out that within the learning opportunity LPL5 had managed to integrate three quadrants. From his own appreciation, the learning opportunity appeared to have narrowly touched on the C quadrant, which is LPL5's most preferred quadrant. I infer the slight implementation of the C quadrant as function of his high desire and intent to promote his least preferred quadrants, since he was aware of the need to work out of his comfort zone. Such an option resulted in his strategy to facilitate learning employing approaches detrimental to his most preferred style. Therefore the challenge he appeared to face after that experience consisted in facilitating a learning opportunity in which whole-brain spectrum activities were promoted, including the C quadrant.

Although objective data showed that he managed to accommodate three quadrants within the learning opportunity, he pointed out many aspects that could be improved in his view. For instance, he believed that the way in which the case was presented was not the most suitable for different students' brain preferences. In his own words

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LPL5, MS, 21/11/10	<i>I told the story, with many deviations and explanations. At that moment it might have appeared to be useful. But rethinking I am of the opinion that it would have been</i>
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*better to hand a written story to each student to read and re-read, because telling them the story might have been misleading. Therefore, I found it relevant to distribute small pieces of paper with the description of the story. Such descriptions ought to be objective and clear.*

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In the transcription above, I observe that LPL5 portrayed a very critical stance. The focus of such criticism shifted from his performance to the methodological approach he adopted. He stressed that he had guided the whole process from dictating the case, to guiding the definition of objectives to establishing the relationships. Hence there was less ownership of learning. Sustained by Hargreaves and Fullan (2000), who were dissecting secondary education, I find here a paradigmatic instance of the advantage embedded within my mentoring practice with experienced lecturers such as LPL5. Therefore these authors contend that within today's lecturing contexts even experienced lecturers need the kind of emotional support provided by mentoring since it is an opportunity to talk through their emotions, and to manage their anxieties and frustrations.

LPL5 identified another improvement that could be implemented. Especially in the context of promoting a truly holistic learning environment he thought that there could be a previous exploration of the students' perceptions. In understand that LPL5 was implicitly recognizing that excellence in facilitating learning implies that what students are expected to learn and how they go about learning come first (Ramsden, 1992). Accordingly, he suggested that there could be brainstorming in groups in order to find those who perceive the case from one or other perspective. Then they would be grouped so that they could defend their interpretation as a thesis. Possibly for better exploration of the perceptions, through accommodation of the different brain quadrants, there would be a preliminary session and then grouping the students, according to their inclinations in order to find if they defended better why they perceived in certain ways and not in others. So perhaps then there would be deeper exploration of LSF.

My interpretation of LPL5's professional learning is that, judging by his appreciation of his own performance in the mentoring session, he appeared to portray what Evans (2002) calls attitudinal/intellectual development. He proved to have understood very well the foundational concepts of the whole brain model and LSF. His planning for the learning opportunity appeared to have been guided by such comprehension. However, during the

implementation phase he appeared to be less successful to achieve the intended outcomes. This is one aspect he personally acknowledged, demonstrating the capacity to stand outside his own practice to analyse such practice critically, pursuing alternative ways of living according to the expressed desires. Therefore, while intending to facilitate learning via the whole brain spectrum, his intervention lacked the promotion of students' emotional involvement and the playful approaches typical of his most preferred C quadrant. Besides, there was still room to trigger students' imagination and spontaneity, to employ visualisation and metaphors, and to explore pictures and colours linked to the D quadrant, which represents his secondary preference. All of these aspects would be addressed in a second cycle of his action research.

#### **4.9.7 Professional learning evolved out of the action research process**

My reflection on the process of carrying out this action research allowed me to identify key transformations. Such transformations include increased adoption of participatory methods of learning, evidence-based practice, value-orientated facilitating learning, promotion of ownership of learning, diversification in planning, diversification in facilitating learning, and increased adhesion to action research. Most of these transformations occurred in the learningshops. A few resulted from discussions I held with the LPLs during the mentoring sessions; there certainly might be others that resulted from the LPLs' experiences and their reflection on them.

Apart from these conjunctures I find the significant aspect of this experience the dialectical relationship between learning acquired in the learningshops and learning acquired in carrying out action research. Therefore, apparently LPLs could use the knowledge acquired in the learningshops (LSF, constructivist and situated learning, student centredness, etc.) to implement in their efforts to facilitate learning, mentore by action research. This process has generated knowledge (mostly specific aspects of implementing LSF and constructivist learning), which was used for feedback on the learningshops and mentoring sessions. Drawing on the LPLs' knowledge to influence the content/course encouraged cooperative learning among the LPLs and between me and them.

In the next paragraphs I provide a brief elaboration on what I understand to be the features of each of the new emergent transformations within our practices as associated with the involvement in the action research process.

### **Participatory methods of learning**

The main assumption behind participatory methods of learning draws both on the constructivist and situated theories of learning. It asserts that the learning process is not context-free, but is rather affected by the environment in which it takes place and where it should be used. Accordingly all facets of this type of learning should be guided by the same environment, with the active engagement of the individual learner. LPLs showed adherence to participatory learning through, among others, asking students to volunteer to drive their learning process. As a result students were actively engaged in exercises and discussions. Students' participation took place mainly through small group and independent work, field work, simulations and problem-solving. Since it is participatory, students having opportunities to critique through giving feedback to lecturers, might contribute to improvement of the lecturers' practice and hence their learning. In the learningshops I provided the opportunity for LPLs to express their expectations, which allowed me to adapt the contents and methods.

### **Evidence-based practice**

I find action research to be a paradigmatic example of evidence-based practice. It is an approach that consists on the professional taking decisions based on the most appropriate information about the situation. Such information is provided by systematic collection of data (Gosling, 2003). Accordingly, throughout the study, the LPLs took many and significant decisions on how they would implement their intervention within the learning opportunities based on the evidence they had collected through video-recordings and they validated these by means of critical reflection held on mentoring sessions.

### **Value-laden practice**

Human beings in general appear to live their lives illuminated by certain sets of values. In their professional lives lecturers are also guided by educational values. These values are the underpinning principles of the individual lecturer, since they are the driving force and the target of the lecturer's way of being. According to McNiff and Whitehead (2006) such values

are part of the researcher's ontological perspectives. I approached this study with the ontological view of my work research site as a setting featured by a dialectical relationship between subjects. I find this belief to be congruent with the values of freedom, collaboration, and equality according to which I intend to live. Therefore, throughout the action research study, I have found myself being transformed into an individual who judges his practice through the lens of these values. The very same values appeared to be adhered to by my fellow lecturers who participated in this venture with me.

### **Promotion of ownership of learning**

Ownership of learning is a dimension of learning that emanates from constructivism. It represents the value students place on themselves as readers and writers and it is associated with autonomy, power, voice and responsibility (Rainer & Matthews, 2002). Promoting student ownership of learning hence involves the lecturer stimulating his students to organise their process of learning and to be actively involved in discussions and decision taking concerning the major issues of their learning process. In this study I saw all LPLs actively involved in promoting ownership of learning, mainly by giving students group work that would allow them to interact in order to negotiate meaning. This happened as well in the learningshops I facilitated, where illuminated by the framework of Rainer and Matthews (2002), I managed to build a community; I allowed LPLs to make their voices heard (by me and by other LPLs) and I allowed them to explore the content.

### **Diversification in planning**

Diversification in planning the learning opportunity is derived from (or encapsulated in) the LSF. I understand that with diversification in planning the lecturer abandons the practice of thinking of the class as composed by only left brain learners who rely on controlled, rational logic and analytic thinking. Instead, he starts to think of the class as a whole-brain composite. Therefore, within the action research, I observed that the LPLs started to plan their learning opportunities considering the curricular portrait in combination with the essence of the whole brain spectrum. They started to focus on the four brain quadrant features in terms of their strengths and distinctive features in order to find which quadrant the typical learner would require for a specific kind of attention. Then they thought of how students with different brain dominances could demonstrate the extent to which they have

learned. In doing this they had to think creatively and beyond the traditional methods of facilitating learning.

### **Diversification in facilitating learning**

I find diversification in facilitating learning as the materialisation of the LSF within the learning venue. I found the LPLs increasingly diversifying and being creative in the way they facilitated students' learning. Therefore, linked to the A quadrant, all the LPLs facilitated their students' learning through the traditional way of teaching, namely fact-based lectures and presentations of well researched topics. In the same vein, though, lecturers addressed the B quadrant by means of regularly summarising key points and step-by-step presentation of the session, among others. The LPLs accommodated the C quadrant through group discussions, asking and giving students time to reflect on the content and to share personal experiences and stories, as well as through role play and simulations. For the D quadrant the LPLs gave students freedom to think about innovative ways of presenting their findings by utilising visuals and mental imagery.

### **Adoption of action research**

According to McNiff and Whitehead (2006) action research represents a liberating form of professional enquiry because it means that practitioners themselves investigate their own practice. They are not told what to do. They decide for themselves what to do by negotiating with others. At least one LPL showed that after initiating the experience of carrying out research within this experimental professional development intervention, he collected data about his practice by means of video-recording and photographs. Such data, he advanced, was evidence of what he was doing, but also a means to monitor the extent to which his practice was managed according to his values.

### **4.10 Relationship between lecturers' brain dominance profiles and their styles of reflection?**

In order to answer the research question *what is the relationship between lecturers' brain dominance profiles and their styles of reflection?*, I collected data employing the HBDI, audio- and video-recording. The HBDI analysed at the Herrmann International Group, provided the lecturers' brain profiles. The HBDI was filled out by all the eight the LPLs. However within this section I only present the profiles of those five LPLs who carried out



their action research. The explanation for that decision lies on the fact that I collected reflections from these LPLs mainly during the action research process. I.e., while they were reflecting back on their intervention I was collecting such data. For that reason, some excerpts of LPLs' interventions that I present in the case study section appear repeated in this two sections, although I tried to minimize such repetition. Then, during the interpretation, I made sense of the lecturers' patterns of reflection data (audio- and video-recording) considering the lecturer's brain profile. In this sense I would consider this approach as a kind of concurrent nested design (Creswell et al., 2003).

Concerning the HBDI results, I wish to stress that my purpose with this action research study is not to question the HBDI as a validated instrument by other studies (Bunderson, 1985; Coffield et al., 2004). I used the HBDI results, which offer predictions, as an opportunity to identify the LPLs' preferred way of thinking and construct new knowledge. The HBDI results that I present in the next paragraphs serve to enlighten the individual about his/her strengths and weaknesses along the whole brain spectrum. This information allows one to reflect on how to approach one's life from a holistic view, including the intellectual, and the affective domains as they are encapsulated within the model. Such information assists the LPL to construct meaning, which is unique practice theory for him/her.

### **HBDI results**

As I have recurrently explained throughout the report, the HBDI is the inventory developed to measure one's degree of preference or avoidance for each brain quadrant. It entails questions that span education, work, use of discretionary time, self-perception and values (Herrmann, 1995). Bunderson (1985) found this instrument to be reliable and that it aggregates criterion, face and construct validity. Additionally, he recommends standards that the practitioners must follow as conditions for validity. Those include explicitly informing users that the HBDI is not a test, establishing clear communication by means of providing materials free of technical jargon, supplying evidence of the quality and usefulness of the instrument, and making explicit that no profile is to be evaluated as being good or bad. All of these standards were followed in the current study.

HBDI shows the lecturer's brain profile in a four-digit numerical code, indicating the number assigned to each quadrant. The preference code 1 represents primary or strong preference (67 or more points). The preference code 2 stands for secondary preference, indicating neither preference nor avoidance (between 34 and 66 points). Tertiary preference or area of potential avoidance is represented by preference code 3 (less than 33 points).

The profile code assigns values to the quadrants. It commences from upper-left A; in the counter-clockwise direction, it proceeds through the B, C to the upper-right D quadrant. Therefore, for instance in the profile in figure 4.11, which incidentally is mine, 1-1-1-2 stands for primary preferences for the A, B and C, with secondary preference for the D quadrant. The HBDI Survey data summary indicates that the thinking style I most prefer is the B quadrant (with 83 points), followed by the C quadrant (77), and the A quadrant (71).

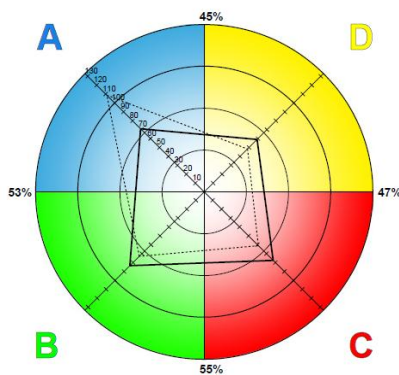


Figure 4.11: My brain profile

My descriptors in the B quadrant are controlled and dominant, with conservative corresponding to my 'key descriptor' - the one most descriptive of me. In the C quadrant my descriptors are emotional and intuitive while in the A quadrant they are critical, quantitative and factual. My least preferred quadrant, based on the HBDI, is the D quadrant, with a value of 59. In this quadrant intuitive is my characteristic. These descriptors represent a general overview of my mental preferences in day-to-day life.

According to the HBDI Survey summary data, the work elements I strongly relate to include planning and implementation (B quadrant), writing and expressing (C quadrant) and technical and financial (A quadrant). These elements reflect the mental preferences at work

and may align completely with general preferences, or they may stem from situations unique to one's working environment.

### LPL1's brain profile

Figure 4.12 shows LPL1's profile, which is triple dominant with a preference code of 1-1-1-2. This profile features two primaries in the left mode, both upper left A and lower left B quadrants, and a third primary in lower right C. The secondary is in upper right D quadrant.

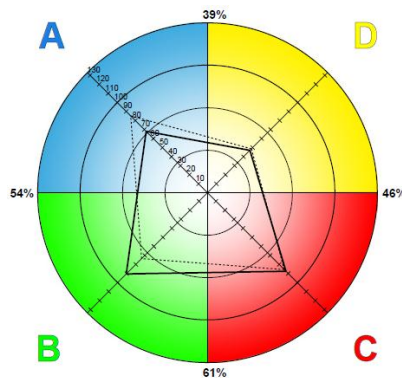


Figure 4.12: LPL1's brain profile

As table 4.6 shows, the thinking style quadrant he most prefers is the B quadrant, with a value of 90. This is followed by the C quadrant (87 points). His next most preferred is the A quadrant (68 points). While his least preferred quadrant is the D quadrant (47).

Table 4.6: LPL1's brain preference code and scores

Quadrant :	A	B	C	D
Preference Code :	1	1	1	2
Adjective Pairs :	7	6	7	4
Profile Scores :	68	90	87	47

LPL1's descriptors are sequential, speaker, controlled and dominant (B); talker and emotional (C); and critical and mathematical, with rational representing his 'key descriptor' (A). According to the HBDI summary, the work elements LPL1 strongly relates to include administration (B quadrant), teaching, writing, expressing and interpersonal (C quadrant); and financial (A quadrant). Table 4.7 shows LPL1's key descriptors and work elements.

These are elements that represent his mental preferences at work and may be aligned completely with general preferences, or they may stem from situations unique to one's working environment.

Table 4.7: LPL1's key descriptors and work elements.

KEY DESCRIPTORS (*MOST DESCRIPTIVE)	factual	conservative	emotional	x	imaginative			
	quantitative	controlled	musical		artistic			
	critical	sequential	spiritual	x	intuitive			
	rational	detailed	symbolic		holistic			
	mathematical	dominant	intuitive		synthesiser			
	logical	speaker	talker	x	simultaneous			
	analytical	reader	reader		spatial			
WORK ELEMENTS	analytical	2	organisation	3	teaching	4	integration	2
	technical	2	planning	2	writing	5	conceptualising	3
	problem solving	3	administrative	4	expressing	5	creative	4
	financial	4	implementation	1	interpersonal	5	innovating	3

LPL1's most comfortable communication approaches may include brief, clear and precise information, well-articulated ideas presented in a logical format, step-by-step unfolding of the topic, explanation in writing, empathy for the listener. His most natural problem-solving strategies include factual analysis, research, logic, re-engineering, step-by-step process, time lines, team processes. To take a decision, he may ask, *do I have all the facts? how will others be affected? will I be in control?*

### LPL1 reflection as nested within his brain profile

In the next section I present LPL1's reflection collected during the mentoring sessions. The analysis of LPL1's reflection allowed me to identify patterns of reflection associated with two quadrants, namely the A and B, as the next paragraphs show.

#### *A quadrant*

An analysis of LPL1's reflections shows that three (3) patterns of reflection emerged as associated with the A quadrant. These are fact-based accounts, reflection on issues requiring explanation and clarification, and making lists.

#### *Fact-based account*

Facts are essentially supportive of verbal statements (Herrmann, 1995). The pattern of reflection I call *fact-based account* involves the lecturer centering his/her reflections on reality linked to names, occurrences, history and location. These serve as the basis for

his/her reflection and appear to be the building blocks for any conclusion one might arrive at during this process. Below I show some exemplars of this pattern of reflection:

---

LPL1 *... I found prevalence of the D and C quadrants, which are more experimental and emotional. Because I found that there is no rigidity in terms of formal lecturer, following rules, textbooks. There was no blind slavishness in attachment to those elements. We created an opened moment.*

*... this is the group of Vicente, the one who has Rasta...they explained this just by means of drawings, many other things were written by other groups. They just put down the drawings and explained that.*

*Having one student in charge of the whole session was somehow a replica of the teacher-centred approach. It was like a traditional class where the lecturer presents a topic and students then pose questions ... The whole class was somehow passive observers, waiting for the end of the presentation to ask questions ... .It was possible to take the students to grasp the two main concerns surrounding the lecture session.*

---

#### *Issues requiring explanation and clarification*

Issues requiring explanation and clarification are the other pattern of reflection I could discern as linked to the A quadrant. I found this pattern of reflection associated with the inner need of the A quadrant to transform the unclear to clear, the cumbersome to the efficient (Herrmann, 1995). In this regard, within this pattern, the person seeks to uncover a hidden aspect of the occurrence or session. In this way he/she will be able to operate within a clear context with the counterpart and will be able to employ precise information, as it relates to his/her preference. Following are exemplars of this pattern of reflection:

---

LPL1 *All the attention is turned not to the lecturer but to the exercise books where they are taking note... it means that they have the tendency to assume that the source is doing something and there is need to find those things in a sequential and organised way ... that is what is important.*

*... we get into quadrants that are more intellectual ... where there is opportunity to explore what already exists in a more organised way ... as we see each time the lecturer writes something on the board they do the same in their exercise books.*

*... found that there are many interventions of myself here, but they are always ... in the sense of helping, supporting the student, to motivate her ... there are some questions other colleagues asked her, which seemed to be very challenging questions and would create some barriers ... In a significant portion of the lesson it happened that both of us talked interchangeably, especially when she was answering the questions posed.*

---

### *Listing*

This is a pattern of reflection that I found somehow linked to the previous patterns just mentioned, namely fact-based accounts and issues requiring explanation and clarification. It is related in general to the need the person has to operate with events and to reduce the complex to the clear-cut. Therefore, as a means to achieve the ends just mentioned, the person recurrently uses listing of facts, events and phenomena to convey his/her reflections. Below are the exemplars of this pattern:

---

LPL1 *This in my view ... the quadrants of this ... I think there is a tendency to look for ...I don't know if I am not ... there is something more of B exactly in the sense of analytical, a little bit of organising, of planning ... one can feel a bit of that...*

*... when we talk about looking for job, the person has a tendency to simulate such organisation, such as planning, rules, obeying the rules...*

*I don't know what must be the student quadrant, but I think she is not fanciful, happy, and creative. She seems to be in a quadrant which is near to these methodical, rational, step-by-step quadrants.*

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### *B quadrant*

The examination of LPL1's reflections, allowed the identification of four (4) patterns of reflection linked to the B quadrant. These patterns include the following principles, namely tracking structure and process, appraising the order and highlighting details.

### *Following the principles*

I perceive the concentration on following the principles as result of the fact that this quadrant is tied to the practitioner wanting to employ what has worked in the past, taking decisions upon long-established procedures. Therefore, within the LPL1 analysis I could find such pattern, where he appraises the usage he does of certain principles within his practice. Two exemplars of this pattern of reflection are the following:

---

LPL1 *... I remained within the same principle according to which the lecturer is not the central element in this activity, but rather creating the opportunity for the student and his/her colleague to intervene and all of us compose this moment.*

*My interventions happen basically at the beginning, while the remaining lecture is carried out by different student presentations, each one with different characteristics.*

---

### *Tracking session structure and process*

One of the features of the B quadrant is the concern with carrying out structured tasks, with high concentration relating to the process. This aspect has to do with the inherent need to be in control in order to get things done (in time). Therefore, as it is portrayed in the next paragraphs, I found that LPL1's reflection included awareness of the presence of these elements. These emerged as he was observing how far he had managed to accommodate different brain quadrants within the learning opportunities:

---

LPL1 *... the quadrants we were in before, in which we had the students showing more their freedom, will .... explanation ... we left that moment and entered to a second one, where the lecturer seemed to be more on top ... so we left the other quadrants and we got into quadrants that are more intellectual.*

*... there was a first moment in which the lecturer was intervening in a kind of launching, launching and launching the things ... it seemed that this moment was over and then we had a kind of change ... there was a space in which it seemed that we were getting in a quadrant that is experimental in character.*

*... is a lesson that begins recurring much more to explore quadrants of character more ... experimental, intellectual where you observe students freely interchanging ideas. For instance, we had a student presentation and the colleagues posing questions, we saw a lot of students asking questions. It means that there is freedom because in an environment that is not free students do not ask any questions, they just keep to themselves like that ... I don't know ... closed and they don't say absolutely anything. Then we have a second moment in which there is abandonment of this will in order to be centred a little bit in which the quadrants are a little more rigorous, more methodical ... Then we come to a new moment of 'informal', where preference is given to independence and free contact.*

---

### *Appraising the order*

This pattern of reflection results from the practitioner having preference to keep things safe and predictable and rejecting ambiguity of any kind (Herrmann, 1995). I show how LPL1 appraised the order, both within his practice and regarding his students' behaviour, while preparing and presenting the tasks in the following line:

---

LPL1 *I think what is fundamental in that presentation was... putting everything in the right place.*

*I was trying to promote a peaceful environment so that the students would feel free and produce more.*

*I assigned the task to present a certain topic to the student. Then, I organised my reading, concentrating on those questions which appear to be more difficult, so that if the student*

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*did not explain it well I could tackle it. .... I identified specific problems that bother the majority of students including me ... I had more time to prepare. Since I was not going to present everything, I previewed those aspects which seemed to be complicated and I concentrated on them.*

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### *Detail highlighting*

One can easily notice that these patterns and features are all related. This is true to the extent that one's attendance to details is incorporated into the need to establish the order and to follow the structure and procedures. Next I present some text extracts containing the details as highlighted by the practitioner:

---

LPL1 *... the first group ... presented ... with a sound background of rap music ... while in this group there are not such things, everything is well ruled ... the interviewer himself well dressed to explain and show how things occur step-by-step , step-by-step ... even in the interview, he was concerned about not missing any of the steps that he had to show.*

*... look that the whole group was involved ... it is not like the previous, which just involved two persons; here all 4 group members created the conditions to be involved and participated as such.*

---

### **LPL2's brain profile**

LPL2 has a triple dominant profile with two primaries in the right mode, lower right C and upper right D quadrants, and the third in lower left B. According to the HBDI data summary, LPL2's preference code is 2-1-1-1, as figure 4.13 shows. This profile is characterized by its multi-dominant and 'generalized' nature, and fairly balanced amount of understanding and ability to use the three primary quadrants.

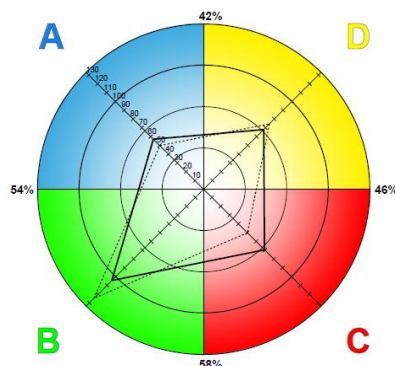


Figure 4.13: LPL2's brain profile

Based on his responses to the HBDI Survey, as table 4.8 shows, the thinking style quadrant LPL2 mostly prefers is the B quadrant (104 points). His next most preferred are the C quadrant (69 points) and the D quadrant (68). His least preferred quadrant is the A (57).

Table 4.8: LPL2's brain preference code and scores

Quadrant :	A	B	C	D
Preference Code :	2	1	1	1
Adjective Pairs :	4	10	4	6
Profile Scores :	57	104	69	68

LPL2's descriptors are conservative, detailed, controlled and reader (B quadrant), emotional (C quadrant), and imaginative (D quadrant), logical and critical representing his 'key descriptor' (A quadrant) as indicated in table 4.9 The work elements he strongly relates to are organisation, planning and administrative, teaching and expressing, integration, conceptualising and innovating. These elements reflect his mental preferences at work. Work preferences may align completely with general preferences, or they may stem from situations unique to one's working environment.

According to the HBDI data summary, the LPL2's preferred processing modes are creative, holistic, interpersonal, feeling, planning and organising. Although the A quadrant is least preferred, LPL2 is still typically quite functional in the use of the logical and analytical aspects of this quadrant.

Table 4.9: LPL2's key descriptors and work elements

KEY DESCRIPTORS (*MOST DESCRIPTIVE)	factual quantitative critical * rational mathematical logical x analytical	conservative x controlled x sequential x detailed x dominant speaker reader x	emotional x musical spiritual symbolic intuitive talker reader x	imaginative x artistic intuitive holistic synthesiser simultaneous spatial
	WORK ELEMENTS	analytical 2 technical 3 problem solving 3 financial 3	organisation 4 planning 5 administrative 4 implementation 3	teaching 5 writing 2 expressing 4 interpersonal 1

LPL2's most comfortable communication approaches include written communication beforehand, providing an overview, idea chunks, involving others, personal touch/sensitive to others. His most natural problem-solving strategies include visualisation, brainstorming, intuition, building on ideas of other team members, and implementation aspects. To take a decision, he may ask, *do I see all the hidden possibilities? can I form a plan to make this work? how will others be affected?*

### **LPL2's reflections as nested within his brain profile**

In the next paragraphs I present the patterns of reflection that emerged from analysing LPL2's reflection on her learning opportunities. These appear connected to all four (4) quadrants, including LPL2's least preferred one.

#### *A quadrant*

The analysis of LPL2's reflection allowed the identification of three patterns of reflection pertaining to the A quadrant, namely fact-based account, issues requiring explanation and clarification, as well as listing.

#### *Fact-based account*

As I have previously explained, through fact-based account the lecturer examines the solid episodes that occurred within the learning opportunity. It includes the theme approached in the session, the organisation of the group/s, lecturer and student observable behaviours and so forth. Below I present LPL2's reflections I identified as framed within this category:

---

LPL2	<i>... this is evidence of the need to call attention to the A and B quadrant. Of course the student was doing the method which is A and B [quadrants]. According to what he manages to do, we kept looking and called attention to the moments that are crucial and need to be thoroughly followed, otherwise the method validity would be nullified. For that reason at that moment there was a warning for the left hemisphere.</i>
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---

#### *Issues requiring explanation and clarification*

No fact should lack explanation for its existence for an extensive period (Herrmann, 1995). This statement illustrates clearly how the A quadrant is associated with the need to have things simplified and clarified. *Issues requiring explanation and clarification* is a pattern of reflection that is linked to the person's need and ability to perceive, verbalise and express things precisely. An exemplar of this pattern of reflection is the following:

---

LPL2 *The same happened in the division of syllables. My analysis indicated that this student is more logical and analytical because, besides the observation we are doing here, I remember his life during the lecturers.*

*For this reason there is a relationship between what I read and what I write and it would help in the visualisation of the way the joint word is written. He has a notion of syllables as elements that are part of the word and which when joined compose the word that is written.*

*... this last group had already finished the activity ... I went there to try to understand what they had done in order to reach the end of the method. They were faster than the others! I don't know if their speed was created by their own group dynamics or the [student acting as] teacher was fast and did not pay attention to collaborating with his students [acting as learners]. They were very fast indeed.*

*I am B quadrant. There are huge differences between the two interventions. Looking back, I observe that in intervention 1, there was a method to be simulated. The method comprised steps, sequence and structure. Such structure coincides with my quadrant. Therefore I expected students to do the simulation following thoroughly the steps of the method. I was not aware that they would face difficulties because they might not be of the same quadrant.*

---

### *Listing*

For the A quadrant the description of reality is of major significance and one of the main strategies to do so is by means of listing its features. Listing is somehow a way of dealing with quantities, since while the lecturer enumerates the facts, events and phenomena he/she might be adding up or putting together things that will constitute the whole picture. In analysing LPL2's reflection, I found some exemplars of this pattern as illustrated below:

---

LPL2 *Here the students would have more attention to observe the others and the lecturers would have the capacity to do management, orientation and commentaries.*

*... about the strategies they would use to collect their information: talking to learners, looking at the exercise books, etc.*

*Looking comparatively, one might observe that in the previous learning opportunity [analysed], I was much more rigorous in terms of rules, structures, steps and sequences.*

---

### *B quadrant*

Three patterns of reflection emerged as associated with the B quadrant, on analysing LPL2's reflection. These include tracking session structure and process, appraising the order and practice makes perfect.

### *Tracking session structure and process*

In my view the pattern of reflection is related to the fact that the B quadrant is associated with carrying out structured tasks and with concentration on the process. Next I present exemplars of LPL2's reflection that demonstrate his concern with structure and process:

---

LPL2 *We are teaching reading and writing. Students go from a phrase to a word and finally to a syllable. That is, the session has a sequence. It is carried out in a joyful way. We noticed that the method has steps. We taught how the steps are organised.*

*... the student who was presenting the lesson presented a table where we normally teach the capital and small letters in print and cursive forms. Normally this activity appears before the syllable table. But what I noticed was that the student put the syllable table before, and then he did the small table of the letter and returned again to the syllable table. In terms of the method this is not the right procedure.*

*I called the student [acting as teacher] to attention ... for word constructions, which he did not register. Because when the students say, for instance BATA, there are BA and TA ... but the [student acting as] teacher did not register. The students [acting as learners] were producing words based on the table, but the method requires the student [acting as] teacher to write and the students [acting as learners] to read the syllable that he indicates but now as a word.*

*... because that student [acting as teacher] did the method ... but there was an important moment missing which is teaching the learner that there is a text case and a cursive letter. And he did not teach. And during the whole session the kind of writing used was cursive and small caps. So if the student [acting as a learner] is faced with a text containing words in capital he/she can have problems to identify what kind of letter it is. This is the reason why I called his attention.*

---

### *Appraising the order*

The pattern of reflection I call "appraising the order" has to do with the practitioner demonstrating favouring having safe and predictable objects and ideas. Analysing LPL2's reflection I could identify many exemplars of this pattern of reflection as I show below:

---

LPL2 *The process took three days and each group already knew when its presentation was going to take place.*

*I took them to the primary school and distributed them according to the theme the group had to develop. I did not enter the classroom so that they had the freedom to observe, ask and talk whatever they found useful, without my presence. So that they could understand. In the end we returned together.*

---

---

*To avoid students losing focus during the observation, I conceived for each group an observation sheet about the theme, about the activities they would carry out while making the observations.*

*... I had a student who was a bit different from the others ... whenever we recommended an activity ... he had other ideas ... and I verified in the film that he was not participating adequately in the session ... where there was interaction between students without much obligation ... he appeared to be isolated... the colleagues taking part in this activity recommended the others to practise the syllable division and I noticed that he did not participate ... we observed that the student did not identify with this kind of activity.*

*... he presented the lesson in an extremely different way. Therefore I asked if this was the way the method is done and the group replied in the negative. Then I said he had cheated the group. He sat down.*

---

### *Practice makes perfect*

According to Herrmann (1995) the B quadrant is coupled with the person wanting to know what has worked in the past; with decisions made according to long-established procedures; and with preserving the tried and true. Within such a context practice is highly valued by the B quadrant learner because it guarantees that what one does is likely to succeed. Subsequently, I present samples of reflective statements that match this pattern:

---

LPL2 *We should maybe have opted by practising outside the classroom and then the students could present ... We should ask the students to do the practising outside the class, but we would not be sure whether they had done so. And it would happen that at the moment of presenting to the whole class we noticed that may be they did not achieve the goals.*

*They could make the presentation according to the combination of preparation outside, while in the first intervention the groups were composed, prepared quickly and presented within the frames of the same session.*

---

### *C quadrant*

#### *People persuasion*

Analysis of LPL2's reflection showed that people persuasion is the only pattern of reflection associated with the C quadrant that emerged. This pattern is aligned with the fact that the C quadrant implies getting groups to work together, building relationships, coaching and counselling, among others. All these personal skills appear in contexts where frequently the LPL is required to influence other people (individuals or groups) to adhere to a certain position, idea or principle. I portray the only exemplar of this pattern of reflection below:

---

LPL2 *It was difficult to convince the students that we assess seriously, to convince them that alone I am not capable of assessing one group performance, since it is composed of many students. Therefore, if together we could assess the performance of six students, I believed that each of us would observe his own focus.*

---

### *D quadrant*

Four patterns of reflection associated with the D quadrant emerged, including awareness to experimenting, attention to space, diversity recognition and attention to devising solutions.

#### *Awareness to experimenting*

The D quadrant is by its very nature an experimental thinking style preference. According to Herrmann (1995), for this quadrant, experience is more valuable than understanding. It thrives on the environment of new ideas, possibilities and varieties. Therefore I found in LPL2's reflection a pattern that put into practice the concern with accommodating experimentation as one of the features of the D quadrant, as I show below:

---

LPL2 *I wanted them to feel what it is to learn based on the method as primary school learners. Besides, I wanted them to know how we proceed to teach other people through such a method so that others could have better comprehension. My problem was to what extent I could integrate all the students doing the method and feeling the varying positions from learner [as method subject] to learner [as teacher who is teaching the method].*

*Some students used part of it and then they felt tired or made space for others to continue. So I was not able to have all the students going through the same experience.*

---

#### *Consideration of space*

The experimental nature of quadrant D, associated with its imaginative, artistic, and fanciful character, is a determinant for the concern with space. In order to allow the free-flow of personal ideas there needs to be space. It is in this context that the pattern of reflection concerned with space emerges, as I depict in the following sample reflections:

---

LPL2 *I think that the groups were very close to one another. It might have been an obstacle for concentration. If we had had a bigger venue we would have had space that would facilitate our job.*

*We had to ... try to find an ample classroom in order to guarantee that the students who did not like noise or who needed more attention and silence could have favourable conditions for their learning. For this reason I think that doing the work outside is ideal. They can work*

---



---

*outside, invite us to attend and comment and then they could present it in the classroom.*

---

### *Diversity recognition*

According to Herrmann (1995) the D quadrant achieves success where there are oddities, varieties and even uncertainties. This character seems to sustain the concern expressed by LPL2 with regard to the need to accommodate the various learning preferences. Such diversity might result in new ideas, possibilities, surprises and visions that compose the nourishment for D quadrant flourishing. The sample reflection below depicts this pattern of reflection:

---

LPL2 *We should pay attention to the fact that the students are not equal. Some of them might find it an opportunity to learn when they are closer, while others might find the noise hindering the attainment of the activities.*

*So we must consider the student diversity and try to manipulate the conditions so that each one can learn more effectively.*

*Even in this video we noticed other ways of showing these moments of the method. That is, the student, according to his capacity, was able to show other ways of showing the method that was organised in sequence.*

*In the second intervention ... I attempted to free the students so that they could present the work using their own quadrants. Here I was not guided solely by structure.*

*Therefore I observed that this experience helped me to understand that there is a need to diversify my vision of the students, not considering them based on my characteristics... during the presentation, I paid attention to what the students were saying, from what quadrant he would be acting, what the relevance of the information he conveyed was, etc.*

---

### *Concentration on devising solutions*

As I recurrently say, all these features are intertwined. The itemisation has mainly the function of making it easy the study the occurrence of the phenomenon or reflection within the whole-brain model. Turn-on indicators of the D quadrant include bringing about change, developing new things and providing vision (Herrmann, 1996). The fact that the D quadrant favours uncertainties and surprises appears to be closely linked with the lecturer tendency to take risks in the pursuit of solutions and new ideas. Below I present illustrations of LPL2's concentration on devising solutions:

---

LPL2 *The groups were composed on the basis of their language ... there were groups which were large and I had to split these into smaller ones. For instance, if I found an eight*

---

---

*member group I used to divide into two groups of four.*

*... some [groups] were overwhelmed by the activity to the point that they could not understand what they were supposed to do. One of the solutions adopted was to change – if a student had difficulties with the method, there was a need to change so that another could perform.*

*If I was going to assess alone the report presentations would not be fair, since I was running the risk of assessing according to my quadrant. For this reason I thought it would be good to involve the students in assessing their colleagues' presentations.*

---

### LPL3's brain profile

LPL3's profile, depicted in figure 4.14, is a triple dominant with two primaries in the left mode and the third primary in the upper right. This profile is characterized by its multi-dominance, yet, in a relative sense, it lacks a level of 'personal touch' that would be present if the lower right C quadrant was also a primary.

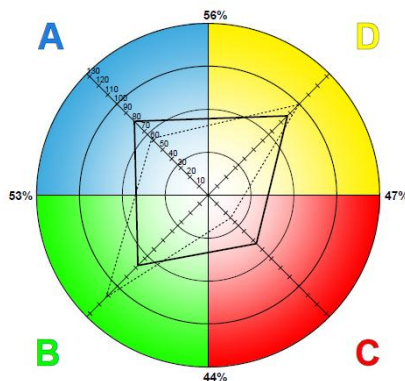


Figure 4.14: LPL3's brain profile

LPL3 preference code, 1-1-2-1, depicted in table 4.10, stands for a primary preference for the A, B, and D quadrants and a secondary preference for the C quadrant. The thinking style quadrant LPL3 most prefer, based upon her responses to the HBDI Survey, is the D quadrant, with a value of 87. Her next most preferred are the A quadrant (81 points) and the B quadrant (77). Her least preferred quadrant is the C quadrant (53).

As table 4.11 shows, descriptors that LPL3 selected as characteristic of herself are artistic, intuitive and imaginative as the one most descriptive of her (D quadrant), logical, critical, rational and factual (A quadrant), controlled (B quadrant).

Table 4.10: LPL3's brain preference code and scores

Quadrant :	A	B	C	D
Preference Code :	1	1	2	1
Adjective Pairs :	5	9	2	8
Profile Scores :	81	77	53	87

These descriptors represent a general overview of her mental preferences in day-to-day life. The work elements she strongly relates to include conceptualising, creative, analytical, organisation, and planning.

Table 4.11: LPL3's key descriptors and work elements.

KEY DESCRIPTORS (*MOST DESCRIPTIVE)	factual x	conservative	emotional	imaginative *
	quantitative x	controlled x	musical	artistic x
WORK ELEMENTS	critical x	sequential	spiritual	intuitive x
	rational x	detailed	symbolic	holistic
	mathematical	dominant	intuitive x	synthesiser
	logical x	speaker	talker	simultaneous
	analytical	reader	reader	spatial
	analytical 4	organisation 5	teaching 4	integration 2
	technical 3	planning 5	writing 5	conceptualising 4
	problem solving 2	administrative 3	expressing 4	creative 5
	financial 3	implementation 2	interpersonal 2	innovating 3

LPL3's descriptors include organising, administrative preferences, conservative, safe-keeping preference, conceptual, holistic, creative, and risk orientated. Her most comfortable communication approaches are brief, clear and precise information, well-articulated ideas presented in a logical format, step-by-step unfolding of the topic, providing an overview, and using visuals. Her most natural problem-solving strategies are factual analysis, research, step-by-step process, time lines, incubation and modelling. To take a decision, LPL3 may ask, "do I have all the facts? what's the 'big picture'? will I be in control?"

### LPL3's reflection as nested within her brain profile

In the next paragraphs I present the patterns of reflection that emerged while analysing LPL3's reflections. These appear associated with the three quadrants pertaining to her profile. I should make a note of the fact that along all the mentoring sessions in which I

collected these reflective thoughts, LPL3 happened to use the third person to refer to herself, especially when she was analysing her interventions concerned with subject matter.

### *A quadrant*

In scrutinising the critique LPL3 carried out regarding her learning opportunity, I could identify three patterns of reflection associated with the A quadrant. These included fact-based account, issue requiring explanation and clarification, and listing.

### *Fact-based account*

Fact-based account entails concentration on reality whereby the lecturer analyses the concrete incidences of the learning opportunity. The examples of fact-based information include what the student or the lecturer did or produced, the features of the venue, the activities, etc. I present LPL3's reflection I found framed within this category below:

---

LPL3 *I confess that this session was difficult to prepare. As you could see it was about gender. The sensation I had was that a good deal of the content of this session had already been treated in previous sessions. Because since the beginning of the module we talked about gender, gender relationships, gender inequalities. So one was left with the sensation that we had talked about this.*

*Something that did not go well and that happens often when we don't give much time for students to prepare is that, during the presentation, the students remain restrained to the information or written notes produced during the discussion and they cannot deduce from them. Apart from the written notes they cannot say anything meaningful.*

---

### *Issue requiring explanation and clarification*

In the previous sections I have elucidated 'issue requiring explanation and clarification' as the other pattern of reflection that emerged as associated with the A quadrant. Within this pattern the practitioner presents assertions with the intention to illustrate facts occurring within the learning opportunity that would be conducive to comprehension of the context in which such facts occur. I depict one exemplar of this pattern of reflection:

---

LPL3 *... writing on the blackboard ... it is something that in my view replaces the projection ... if I had a data-show in front I should be projecting the information ... but because I am there talking and because I think that just by talking there are discourse elements that students might miss ... so everything that is very important in the lecturer understanding the information student must keep, it is anyway recorded on the blackboard. It is like a note-taking by the lecturer which is going to be replicated by the student.*

---

### *Listing*

Listing is another pattern that I have already explained. Somehow it deals with making numbers, through placing things of the same category or class together. A sample of this pattern I could find is presented in the next section:

---

LPL3 *There is a need also to have the student taking the lead, showing to what extent he understood the contents, or how did he understand the contents.*

*... since the beginning of the module we had talked about gender, gender relationships, gender inequalities.*

---

### *B quadrant*

Analysis of LPL3's reflection allowed me to identify 5 patterns associated with the B quadrant. These include following the principles, tracking session structure and process, appraising the order, detail highlighting, and attention to devising solutions.

### *Following the principles*

LPL3's reflection showed that she is concerned with observing the implementation of practices that characterise her brain dominance. Therefore most of her reflective pieces are associated with the B quadrant. Below I present examples of 'following the principles'.

---

LPL3 *When it happens like that [students not reacting to launched questions], the question is re-launched to the whole class and to other groups so that we cannot remain in an environment of pause because we are waiting for a certain group to respond to the lecturer solicitation. Even though, maybe in the sense to stimulate them or call for their consciousness, they are reminded that such participation at a certain moment will contribute to assessment.*

*We prefer a situation of contact in which we get to know one another and on that contact day we already brought the first reading material. We avoided going to the class without the student having the opportunity to peruse the text that would be discussed or the issues that would be discussed. Because that is the only way students can participate. Otherwise the lecturer would be talking alone.*

*Normally, if you have noticed, it is not part of my style to facilitate the session seated ... So I am always moving, getting closer to students... that class does not have many students; moreover, the space is not large. When the classes are big ... in order to have the students close to the lecturer there was a need, not only to be in front moving to left and right, but also I tried to move through the corridors, while talking.*

---

### *Tracking session structure and process*

One of the features of the B quadrant is the concern with carrying out structured tasks, with high concentration during the process. This aspect has to do with the inherent need to be in control in order to get things done (in time). With regard to that, I could find within LPL3 reflection the presence of these elements as it is evidenced by the statements below:

---

LPL3 *... because we are in a trial to put the student producing, constructing his/her own knowledge as a function of content to which he is orientated. So what I think is that the lecture component provided by the lecturer in the class is not enough. There is a need also to have the student taking the lead, showing to what extent he/she understood the content, or how did he/she understand the content. I think that is important.*

*Whenever possible I combine [lecturer-lead and student-lead activities] in order to avoid making the session monotonous. You can imagine what 3 hours with just the lecturer talking would be like! If we don't have the practical component, we create the conditions for the level of interaction lecturer-student to become higher. I always ask questions to students so that the session becomes ours and not mine. And this forces them to be attentive and to do the recommended reading beforehand.*

---

### *Appraising the order*

The B quadrant is characterised among others by the preference for a neat, safe, predictable and orderly environment. For this reason reflection within this quadrant demonstrates concern with the establishment of order in the learning opportunity, as I show in the next two sample reflections:

---

LPL3 *... what I tried to do in order to avoid their dispersion in the pursuit of photo copies and take a long time ... I tried to bring an exemplar of the text for each group.*

*... there is always the need to rescue the students from the way in which they are going, taking into account the discussion. Being discussion about gender inequalities, they started to think about inequalities in other fields rather than education. So there is always the need to make them come back, call their attention to that context in which the discussion about inequalities is taking place, though without invalidating the student's opinion.*

---

### *Detail highlighting*

The B quadrant is the prototypical answer when we look for perfection in detail (Herrmann, 1995). As I explained before, it is due to the interwoven characteristic of these patterns

within the quadrant. Therefore, who seeks order and makes lists should attend to details. Below I share some exemplars of this kind of reflection:

---

LPL3 *Something that is part, I think that it is the characteristic of the lecturer is that she does not manage to teach from beginning to end without writing on the blackboard.*

*I have as well the habit of talking using my hands. I have the impression that things become clearer with gestures.*

*The group disposition is something I would change ... the way they are seated ... in my understanding, in group work, the persons must be front-to-front, not side by side ... but, well, I think that the students are accommodated, when it comes to do group work they remain there ... they do not get up in order to move the chairs. This kind of attitude is typical when there are few group elements.*

---

#### *D quadrant*

Analysis of LPL3's reflections enabled me to identify only one pattern of reflection, linked to the D quadrant namely concentration on devising solutions.

#### *Concentration on devising solutions*

The occurrence of this pattern of reflection can be understood in the context of the person, through the B quadrant, pursuing the perfect environment. Within such an environment the person tracks structure, promotes order and so forth. In this way whatever does not conform to protocol is seen as threatening the entire operation (Herrmann, 1995) and requires "bringing order out of chaos" through changes or the adoption of ways out of the problem at hand. Below I show some exemplars of this pattern of reflection:

---

LPL3 *In my view this intervention was to go beyond a limitation ... in terms of what content to deliver, since the existing impression was that much of what could be said had been already said... then I had to innovate and make the lesson more dynamic in that sense.*

*What novelty can one bring to the session, which is not something repetitive, which cannot be boring for the students? So the strategy that I used, since we were going to talk about gender inequalities in the context of education, I took content that talks about inequalities of opportunities in schooling from another module . I tried to use such content as introductory part to our theme.*

*I tried to organise the content in a way that the lesson would not be repetitive. I tried to bring in new elements ... Even if some contents of the suggested texts had been already approached.*

---



### LPL4's brain profile

LPL4, whose profile is presented in figure 4.15, patterns a triple dominant profile with two primaries in the right mode and the third in Lower Left. According to Herrmann International, it is the clear majority for the female population, 24 percent exhibiting this profile.

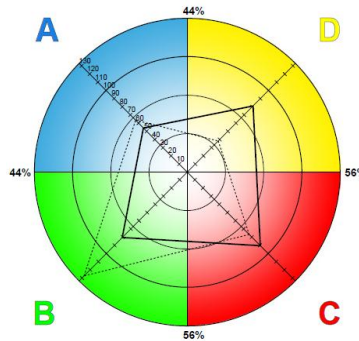


Figure 4.15: LPL4's brain profile

According to the HBDI data summary, LPL4 is triple dominant. Her preference code is 2-1-1-1. Table 4.12 shows LPL4's brain preference code and scores. The thinking style quadrant LPL4 most prefers, based upon her responses to the HBDI Survey, is the C quadrant, with a value of 90. Her next most preferred are the D quadrant (81 points) and the B quadrant (80). Her least preferred quadrant is the A quadrant (54)

Table 4.12: LPL4's brain preference code and scores

Quadrant :	A	B	C	D
Preference Code :	2	1	1	1
Adjective Pairs :	5	10	6	3
Profile Scores :	54	80	90	81

LPL4's descriptors are emotional, spiritual, and intuitive as her 'key descriptor', as indicated in table 4.13. The other descriptors include imaginative, conservative, controlled, logical and rational. The work elements she strongly relates to include teaching, writing, interpersonal, conceptualising, creativity, organisation and implementation.

Table 4.13: LPL4's key descriptors and work elements

KEY DESCRIPTORS (*MOST DESCRIPTIVE)	factual		conservative	x	emotional	x	imaginative	x
	quantitative		controlled	x	musical		artistic	
	critical		sequential		spiritual	x	intuitive	*
	rational	x	detailed		symbolic		holistic	
	mathematical		dominant		intuitive	*	synthesiser	
	logical	x	speaker		talker		simultaneous	
	analytical		reader		reader		spatial	
WORK ELEMENTS	analytical	2	organisation	4	teaching	5	integration	3
	technical	2	planning	3	writing	5	conceptualising	5
	problem solving	5	administrative	2	expressing	3	creative	4
	financial	2	implementation	4	interpersonal	4	innovating	3

LPL4's profile portrays generalised nature, and fairly balanced amount of understanding and ability to use the three primary quadrants, being creative, holistic, interpersonal, feeling, planning and organising. Although the A quadrant is the least preferred, she is still typically quite functional in the use of its logical and analytical aspects. LPL4's most comfortable communication approaches may include written communication beforehand, providing an overview, idea chunks, involving others and personal touch/sensitivity to others. The most natural problem-solving strategies for LPL4 would include visualisation, brainstorming, intuition, building on ideas of other team members, and implementation aspects.

### LPL4's reflection as nested within her brain profile

My analysis of LPL4's reflection that occurred during the mentoring sessions revealed the emergence of a pattern of reflective thinking associated with quadrants A, B and D. In the next paragraphs I describe such patterns and provide the quotations manifesting them..

#### *A quadrant*

My analysis of LPL4's reflection identified two patterns of reflection pertaining to the A quadrant, namely issue requiring explanation and clarification, as well as listing.

#### *Issue requiring explanation and clarification*

I have recurrently tried to elucidate what are the features and rationale for "issues requiring explanation and clarification" as a pattern of reflection. Through it the person looks for revealing elements, features and processes of the learning opportunity that might be hidden to the listener. In this way, the lecturer appears to seek to ensure that both (she and her

listener) operate within the same context of understanding. The following paragraphs contain are some exemplars of this pattern of reflection:

---

LPL4 *It was a session where students had to do practical work, they had to elaborate on assessment instruments. Each group had to produce a certain kind of instrument.*

*First I tried to do a retrospective, a recapitulation of the previous session and I tried to search for the activity they had to carry out, in which they had to talk about kinds of assessment. So here we had the groups still trying to put the displays/posters on the wall.*

*The first session was with a large group; besides that they did not have ... how can I say ... the same opportunity to prepare the presentation ..let's say the last group had the possibility to prepare the session according to their choice, while in the first group all of them had to present the session in the same way.*

*The conception of an assessment instrument is a somewhat complicated activity. It does not seem to be complicated, but at its heart ... The students themselves, they did not have the idea, the notion that to conceive the instruments there is need to consider the content.*

---

### *Listing*

For the A quadrant the explanation of reality is of major significance. One way of doing this is dissecting and figuring it out by means of listing its features. Therefore, recurrently listing appears in the reflective discourse associated with the A quadrant as is illustrated below:

---

LPL4 *We were talking about diagnostic, formative and summative assessment.*

*... when a person wants to conceive an instrument, it is complicated because he/she has to see what the objectives, the content are, how the content is tackled in the classroom.*

*... students had to prepare the lesson according to their choice – poster, theatre, poem, story, but approaching the three kinds of assessment.*

*... especially the last group talked about the three kinds of assessment; it showed the importance of the three kinds of assessment, and when each kind occurs.*

*... they did not have the idea that it is necessary to take the objectives, to get the content, and it is necessary to catch the way the content is approached in the classroom.*

---

### *B quadrant*

Two patterns of reflection emerged associated with the B quadrant. These include *practice makes perfect* and *appraising the order*.

#### *Practice makes perfect*

The B quadrant is typified by exploring the belief that things are carried out through tried and approved procedures. In this way, and being risk-avoidant, expectedly this quadrant happens to be linked to practising as a way to guarantee a performance that is near perfection. In this regard I present a sample of LPL4's reflective statements that match this pattern:

---

LPL4 *The other thing ... I would give more time for students to prepare. In the sense of preparing ... not preparing outside, but provide them with time to prepare during the lesson. If they had to finish it they would do that after the session. Because what happened is that they took the activity to prepare outside and they did not manage to do it well. I would give them time, lesson time.*

---

#### *Appraising the order*

The B quadrant tends to struggle for safety and stability. These elements are in many instances brought about by the order which composes its another attribute. For this reason, as I show below, some aspects of LPL4's reflection within this quadrant illustrate concern for the establishment of order:

---

LPL4 *I provided reading material as well as additional references so that they could prepare themselves. I did my own reading and prepared my summaries so that I could orientate myself during and after the presentation. Since I had to do some remarks once, for instance, a group had missed an important aspect, I had to talk about such aspects.*

---

### *C quadrant*

Intuitive conclusions and awareness of feelings are the two patterns of reflection that emerged in connection with the C quadrant.

#### *Intuitive conclusions*

Following Benner and Tanner (as quoted by Perry, 2000) I would say that intuition involves understanding without rationale, intrinsic to the lecturer's practice where he/she operates after gaining a deep understanding of the entire situation. The C quadrant is strongly

associated with intuitive thoughts and behaviours. Therefore, as some text extracts below illustrate, LPL4 examined intuitive conclusions she had during the learning opportunity:

---

LPL4 *I think that students managed to learn, they developed an idea of how to conceive an assessment instrument. These students are being trained to be teachers. In the past they did not have a module about how to conceive an instrument.*

*What I felt in terms of ... when the students were presenting the assignments was that, for instance, the first group presented in theatre format, but they did not talk about kinds of assessment. And it was worrying for me. I wanted to hear them talking about kinds of assessment. But they didn't talk about kinds of assessment, they were showing how diagnostic, formative and summative assessments can be carried out ... I felt that the students were not going in the expected direction, I was bit a nervous. But in the end they explained and it was then that I understood what they wanted to do.*

---

#### *Awareness of feelings*

Within the whole-brain model Herrmann (1996) advances the point that the C quadrant might be considered the most sensitive, receptive and the mood indicator. For him, C concentrates on the past due to its emotional value, which might be comforting or inspiring. Following LPL4's brain profile, I find that she put major emphasis on emotional and spiritual modes. This is probably why she showed awareness of the feelings both she and the students had experienced during the learning opportunity, as I demonstrate below:

---

LPL4 *I was nervous because I knew that I was being video-recorded ... I felt that from my side I was nervous. I tried to do an introduction of the session ... I opened space for them to define [the theme], but in the end I decided about the theme in which they had to work. I did not look at what the...[long hesitation]...styles... [I completed styles or preferences]... the students' preferences were.*

*It is painful to watch one's own lesson ... because I saw the mistakes that I was committing.*

*Apart from the aspect of being nervous with the first group presentation, the remaining presentations went well. ... The problem is that I became a bit nervous, fearing that students were not going in the desired direction.*

*Ah! I enjoyed the presentation of this group! They made it in a kind of poster ... not poster, but diagram.*

---

### *D quadrant*

My further analysis of LPL4's reflection on the learning opportunities she had facilitated, allowed the identification of three patterns of reflection. These are consideration of space, diversity recognition, and concentration on devising solutions.

#### *Consideration of space*

The emergence of the pattern of reflection I call 'consideration of space' is associated with the artistic and visionary character of the D quadrant. We might find that to put into practice such adventurous, imaginative, artistic and visionary ideas generated in this quadrant there is a need for space. This should be understood as both physical and psychological time space, as I depict in the next exemplars:

---

LPL4 *... I would give more time for students to prepare ..., but provide them with time to prepare during the lesson time. If they have to finish it they would do that outside the session ... I would give them time, lesson time.*

*The classroom conditions are not helpful for group work. It is an amphitheatre. In terms of interaction between students and even the lecturer to be orientating the group work, it is difficult. Because they were in an amphitheatre. It is not like a normal classroom, where they are seated in a circle format. The students were not comfortable. Even for me it was difficult to move into each group to explain what should be done and to monitor how it was going on.*

---

#### *Diversity recognition*

Diversity recognition is the pattern I find associated with the D quadrant. Somehow it derives from D quadrant individuals' passion for brainstorming and integration. It implies that the individual will not only acknowledge diversity, but appreciate it as a source of resources necessary for personal and organisational growth. The reflective extracts below appeared in previous pages within the case study of LPL4 action research. Now I depict it as exemplars of "diversity recognition" as one of the patterns of reflection shown by LPL4:

---

LPL4 *... I think that taking into account that I had been working with them for two/three months, I more or less knew the characteristics of each student ... not in general, but a little. I think I had to help the students composing the groups since there were those groups that were formed because all of them were talkative and all are dynamic.*

*Now I would like to try to relate to this ... [I completed model] ... model. There were those who were more logical, they ended up composing one group.*

---

---

*After I had attended to the learningshops and shared this experience, I changed gradually. Now it is normal to find me in my lecturing sessions giving diversified tasks, promoting discussions, etc. thanks to the experience.*

---

### *Concentration on devising solutions*

Generating ideas, causing or bringing about change, inventing solutions and developing new things are some of the indicators Herrmann (1996) employs to typify the D quadrant. Within this state of affairs it is expected that the reflections of a practitioner framed within the D quadrant might include concern for devising solutions. In the next paragraphs I show how this happens in LPL4's reflections:

---

LPL4 *I would do an introduction ... not very long as it happened in this ... And I would find another way of composing the groups ... Knowing the class, those who had always been in the same group, I would try to separate, looking as well at the learning styles. After composing the groups I would announce the task. Because, in this experience, first I announced the task and then asked them to compose the groups. I think that this influences the group composition because some students know that this colleague knows the content in this field.*

*Could I repeat the session? Can I ... facilitate another learning session, but it will not be with this same group? It will be with another. Can I do another video-recording with first semester students? O.K. You said that I would be recording one more. Instead of recording one, I would record two more. Is it possible?*

---

### **LPL5's brain profile**

Figure 4.16 present LPL5's profile, which is a double dominant profile with the two primaries in the lower left and lower right quadrants. It is a double primary in the limbic area.

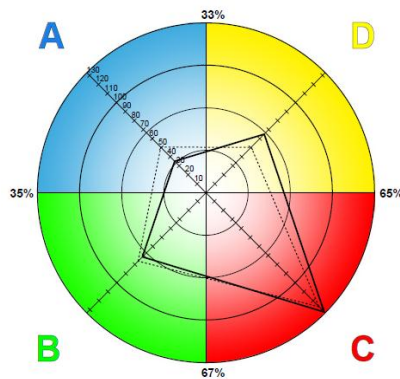


Figure 4.16: LPL5's brain profile



According to the HBDI data summary, LPL5 is double dominant. His preference code 2-1-1-2 stands for primary preference for the B and C quadrants and secondary preference for the A and D quadrants as table 4.14 shows. His responses to the HBDI Survey show that the thinking style quadrant LPL5 most prefers is the C quadrant, where he achieved 132 points. By quite a margin his next most preferred are the B quadrant (71 points) and the D quadrant (65). His least preferred quadrant is the A quadrant (35).

Table 4.14: LPL5's brain preference code and scores

Quadrant :	A	B	C	D
Preference Code :	2	1	1	2
Adjective Pairs :	4	6	10	4
Profile Scores :	35	71	132	65

As table 4.15 shows LPL5 selected the following descriptors: talker, emotional, conservative, spiritual, intuitive, critical, reader, and musical representing his 'key descriptor'. The work elements to which he strongly relates include teaching, writing, expressing, interpersonal, integration, conceptualising, creative and innovating.

In LPL5 both the upper and lower dominant families of profiles unite distinct mental process in a synergistic interchange. The upper modes may, for example, be as comfortable with facts, data and theory (A) as with conceptual frameworks and intuitive insights (D). This results in a cognitive, intellectual approach.

Table 4.15: LPL5's key descriptors and work elements

	A	B	C	D
<b>KEY DESCRIPTORS</b> (*MOST DESCRIPTIVE)	factual quantitative critical x rational mathematical logical analytical	conservative x controlled sequential detailed dominant speaker x reader x	emotional x musical * spiritual x symbolic intuitive x talker x reader x	imaginative artistic intuitive x holistic synthesiser simultaneous spatial
<b>WORK ELEMENTS</b>	analytical 3 technical 2 problem solving 2 financial 1	organisation 2 planning 3 administrative 2 implementation 3	teaching 5 writing 5 expressing 5 interpersonal 5	integration 4 conceptualising 4 creative 4 innovating 4

The lower modes (B and C) bring together a strong sense of detail and structure (B) with a sensitive, emotional awareness of feelings and people (C). This results in a visceral, grounded approach. Both upper and lower modes can experience a sense of two distinct mental perspectives as they look at the world. LPL5 has an opportunity to learn when to apply particular mental processes appropriately to different situations. This allows him to maximise the effectiveness of his mental processes.

LPL5's profile is double dominant with two primary preferences in the lower left B and lower right C quadrants. It is a double primary in the limbic area. LPL5's profile is characterised by very strong preferences for conservative thinking and controlled behaviour with a desire for organisation and structure as well as detail and accuracy from the lower left B quadrant. Persons like LPL5 tend to worry about detail. The primary in the lower right C would equally show itself by emotional and interpersonal preferences, an interest in music, and a sense of spirituality. It would also show in an intuitive feelings sense of this person. The two limbic primaries could represent an important duality for the person to resolve. The opposing qualities of control and structure, of form – and the emotional and interpersonal feelings can cause internal conflict. The clear secondary preferences of the cerebral modes, both upper left A and upper right D, are also characteristic of this profile, with logical and analytical in the upper left A quadrant and holistic and creative thinking of the upper right D quadrant.

LPL5 most comfortable communication approaches may include step-by-step unfolding of the topic, practical answers to 'who', 'what', 'when', 'where' and 'how', understanding how others react, personal touch/sensitive to others. And the most natural problem-solving strategies would include the step-by-step method, time line principles, intuitive feelings and team processes. To take a decision, due to his profile, LPL5 is likely to ask, *what is the appropriate sequence? how does my decision affect others?*

### **LPL5's reflection as nested within his brain profile**

My analysis of LPL5's reflections allowed the identification of patterns of reflection linked to the A, B, C and D quadrants. Remarkably, although LPL5's primary preferences are within the B and C quadrants, I found more patterns of reflection associated with the A and B quadrants. This fact shows that an individual can reflect within a brain quadrant that is not

his/her primary preference. In the next paragraphs I show such patterns and the exemplars illustrating them.

### *A quadrant*

#### *Fact-based account*

Fact-based account entails concentration on reality, whereby the lecturer analyses the concrete incidences of the learning opportunity. The examples of fact-based information include describing what the student or the lecturer did or produced, the activities, etc. I present the LPL5 reflections I found framed within this category below:

---

LPL5 *There continues to be interaction between students and the lecturer, but in this case it is the lecturer who tries to integrate and orientate all about what the learning objectives are which were not previously provided.*

*... within the scientific context, the context of the theme, but always getting what was on the blackboard because these were their inputs.*

*Yes and the data projector ... the use of the blackboard is to show that their contributions are important as elements that co-substantiate the theory or theoretical aspects being approached. For this reason it remains their side-by-side as a reference point for the students, but the whiteboard ... therefore some notes on the whiteboard ... theirs were on the blackboard ... and the data projector was running the theme a little bit more structured, but showing that what is structured is something more than an organisation of the ideas.*

*There was higher prevalence of the lecturer interventions. He did the summary, rather than the student. It ended up being a teacher-centred approach. Since the lecturer had guided the definition of objectives, he established the relationships, etc.*

---

#### *Issues requiring explanation and clarification*

In previous sections I have recurrently elucidated “issues requiring explanation and clarification” as the other pattern of reflection that emerged associated with the A quadrant. Within this pattern the lecturer presents assertions with the intention of illustrating facts occurring within the learning opportunity that would be conducive to comprehension of the context in which such facts occur. I supply one exemplar of this pattern of reflection:

---

LPL5 *To me it seemed that this part was introductory, in which there was a trial to give instructions about a task ... about an activity which was going to be carried out. Therefore it touched more on questions of planning and organising in terms of ... what*

---

---

*seemed ... was that the instructions were too long or too many and maybe repetitive.*

*There is a transition from aspects of instruction and organisation [guided by the lecturer] to aspects which appeal to students involvement in problem analysis. It is about two young boys who move in order to settle in Maputo ... it was to create a scenario that obliged students to do an analysis. So eventually appealing to that upper left [in English] ... the quadrant ... I think that it is the activity that follows.*

*There is a tentative systematisation of what were the contributions of the groups. That is a systematisation directed at the objectives because ... it was an exercise aimed at taking the students to understand that the persons behave in the way they do ... So there is a trial to do a synthesis directed at and framed within the purposes of the session, but now from the side of the lecturer.*

---

### *Listing*

Listing is another pattern that I have already explained more than twice. It is about making numbers, through placing things of the same category or class together. A sample of this pattern I found is presented in the next lines:

---

LPL5 *... yes, it is initial motivation and environment creation, but which seemed to me, well seen now, maybe too much, repetitive, exhaustive ...*

*It seems that there is a transition, without abandoning the analytic aspect, there appear to be a more integrated analysis, which is more fueled by intuition...*

*So there is a trial to synthesize, integrate I don't know ... there is an organisation ... we did this [B]... then we did that [C] ... .now we are doing that [D].*

*... there are these two or three means: the blackboard, the whiteboard and the data projector to expose and to go and get elements for interpretation.*

*So it seems that the learning opportunity turns around these axes, the upper left, upper right and, overall, the lower left.*

---

### *B quadrant*

#### *Following the principles*

The lecturer's concentration on following the principles is connected to the intention to employ what has worked in the past, taking decisions upon long-established procedures. Therefore, within the LPL5 analysis, I could find such a pattern, where he appraises the existence of certain principles he can use within his practice. Two exemplars of this pattern of reflection are the following:

---

LPL5 *Then they had to start to establish the bridge in the sense that afterwards what they had been doing are behaviours, the behaviours are learned via education ... there are values.*

*... the use of the blackboard is to show that their contributions are important as elements that co-substantiate, let's say, the theory or theoretical aspects being approached ... and the data projector is to run the theme logically, a little bit more structured, but showing that what is structured is something more than the organisation of the ideas ... making constructive use of the ideas they had launched and presenting it in a much more organised, structured way.*

---

#### *Tracking session structure and process*

One of the features of the B quadrant is the concern with carrying out structured tasks, with high concentration on the process. This aspect has to do with the inherent need to be in control in order to get things done (in time). Therefore, as it is portrayed below, I could find that LPL5's reflection enclosed awareness of the presence of these elements:

---

LPL5 *... so we started from questions they had to elaborate on them, they made contributions, there was a theoretical part and now there are questions that arise from their side. And they are being cleared; it seems that after having used the toolkit there is in the table, their inputs, the data projector information and the schematic table which appears on the right.*

*There is an introduction entailing instructions about procedures. In the following part there is case analysis or analysis of a hypothetical case. There is cooperation between them, they analyse and describe afterwards. There is a debate, interaction aimed at trying to frame what was their interpretation concerning the case... the debate happened having underneath a certain theme which, in that case, was "the behaviour as motivated" [by some trigger]. Then there is a transition to a more theoretic part, where the lecturer seek to summarise the "motivation" theme and its relationships with a series of another factors.*

---

#### *Detail highlighting*

Some of the known features of the B quadrant are the pursuit of perfection, appraising the order and concern with sequence. Those aspects determine that this quadrant appears to be associated with a search for detail, since all these traits are intertwined. Next I present one text extract containing the details as highlighted by LPL5:

---

LPL5 *Questions are asked by students, which are being cleared. In this case it seems that it was Macamo who asked one question.*

---

### *C quadrant*

#### *Awareness of feelings*

According to Herrmann (1995) the C quadrant is the most sensitive, receptive and the mood indicator. For him, quadrant C concentrates on the past due to its emotional value, which might be comforting or inspiring. Analysing LPL5's reflection, I could identify some extracts of reflective thought directed at showing awareness with feelings. Generally I realised his concern about his own performance, something that cannot be transcribed, but that I could interpret, based on his posture. Therefore I realised he regretted and highly criticised his performance, indicating aspects in which he could have improved his performance. Below I present some reflections conveying his awareness of feelings:

---

LPL5 *I was repetitive in giving instructions, perhaps in a trail to make it clear what I wanted from them. For those students who were attentive from early the commencement, it can be tiresome to hear repetition of instructions...*

*... because telling them the story might have been fastidious and misleading.*

*I would not say that it is very emotional but ... there is a trial to make an appeal to aspects somewhat interpersonal while they are reporting ... each one spontaneously goes on telling what he feels or what the discussion provoked in him/her in a more spontaneous fashion, much more somehow emotional.*

---

#### *People persuasion*

This pattern of reflection is aligned with the fact that the C quadrant implies getting people to work together, building relationships, coaching and counselling, among others. All those personal skills appear in contexts where frequently the LPL is required to influence other people (individuals or groups) to adhere to a certain position, idea or principle. Below I present two exemplars of this pattern of reflection:

---

LPL5 *To me it seemed that this part was introductory, in which there was a trial to give instructions about a task ... in which there was a trial to give instructions about an activity which was going to be carried out following.*

*Therefore there should be care to raise the student's awareness for the focus on the module or theme. Hence, they interpreted the case in their most preferred way so the lecturer had to carry out an effort to re-direct their focus to the main objective.*

---

### *D quadrant*

#### *Diversity recognition*

According to Herrmann (1995), the D quadrant achieves success where there are oddities, varieties and even uncertainties. This pattern derives from the D quadrant passion for brainstorming and integration. It is implied that the lecturer acknowledges the diversity and appreciates it as a source of resources necessary for personal and organisational growth. Below I depict exemplars of this pattern of reflection as exhibited by LPL5:

---

*LPL5 But there are always situations of those who dominate in terms of contributions, while others are more passive.*

*In the sense that from the discussions they have in the groups, there were some that were more intuitive, others were integrating, and still others were holistic.*

*Another improvement that would be implemented, especially in the perspective of promoting a truly holistic learning environment would be a previous exploration of the students' perceptions via brainstorming in groups, in order to find those students who perceive the case in different perspectives.*

---

#### *Concentration on devising solutions*

This pattern of reflection links the person's intent to pursue a perfect environment. Within such an environment the person tracks structure, promotes order and so forth. In this way whatever does not conform to protocol is seen as threatening the entire operation (Herrmann, 1996) and requires "bringing order out of chaos" through changes or adoption of a way out for the problem at hand. As I have mentioned somewhere before, there is overlap between different patterns, such as it happens here between "diversity recognition" and "concentration on devising solutions". As a result there occurs a repetition of certain reflective extracts since they partially belong to both patterns of reflection. Below I present illustrations of LPL5's concentration on devising solutions as the pattern of reflection that demonstrates concern with finding and implementing solutions for problems or uncertainties:

---

*LPL5 It would have been better to hand in a written story for each student to read and re-read, Therefore I found it relevant to distribute small pieces of paper with the description of the story. Such descriptions ought to be objective and clear.*

*Another improvement that would be implemented, especially in the perspective of promoting a truly holistic learning environment would be a previous exploration of the students' perceptions, via brainstorming in groups, in order to find those who perceive*

---



---

*the case from one or other perspective. Then they would be grouped so that they could defend a thesis. Maybe in order to explore better the perceptions, through the accommodation of the different brain quadrants, there would be a preliminary session and then grouping the students.*

---

#### **4.11 How can I (we) use the principles and practices of LSF to design a model of Learning Styles Flexible Reflection (LSFR)?**

Analysis of the LPLs' reflection as nested within their brain profiles showed that they reflect on data, issues and information as associated with their preferred modes of knowing. For instance, associated with the A quadrant, I observed that the LPLs' reflection occurred mainly through fact-based descriptions, explanation and clarification of issues and listing. In doing so, LPLs engaged in analytic and logic processing of facts and events, quantifying occurrences or persons and theorising. Within this quadrant the practitioner reflection appears to be energised by factual information, case descriptions and challenges. Therefore, looking at data presented in the previous paragraphs, I observed increased occurrence of description of facts sustaining my claim.

Turning to the B quadrant, I found that the patterns of reflection that emerged are associated with organising, sequencing, categorising and assembling facts or persons. The reflection within this quadrant was powered by well-structured information (e.g. *I noticed that the student put the syllable table before, then he did the small table of the letter and returned again to the syllable table*), detail outline, precision (e.g. *the process took three days*), and practical examples (e.g. *the student who was presenting the lesson, presented a table where we normally teach the capital and small letters in text case and cursive forms*).

The C quadrant is linked to patterns of reflection that imply sharing, coaching, questioning and moving. The lecturers' reflection within this quadrant is stimulated by feelings-driven issues (e.g. *I was nervous; is painful to watch one's own lesson*), intuitions (*I felt that the students were not going in the expected direction*), hands-on activities.

The patterns of reflection I identified as linked to the D quadrant include activities such as conceptualising, integrating, exploring, discovering and synthesising. The individual reflection within this quadrant is boosted by free-flowing (*try to find an ample classroom in order to guarantee that the students who do not like noise*), novelty (*this experience helps*

*me to understand that there is a need to diversify my vision of the students), vision, incongruity (It might have been an obstacle to concentration), and discovery (I wanted them to know how we proceed to teach other people).*

Identification of patterns of reflection related to different brain quadrants does not mean that the lecturer reflects only within his/her quadrant. In this regard I observed that there were LPLs who reflected mainly outside their brain quadrants. For instance, for LPL5, whose brain profile is 2-1-1-2, I found most sample reflections framed within quadrant B (his second most preferred with 71 points) and A (his least preferred with 32 points). The explanation for this occurrence might be found in his conviction that the task required left-brain related activities such as analysing, processing logically, describing, organising and giving details. Still, this fact might be explained by the iteration – the access to major aspects of functioning - that relates to the left hemisphere generally (Herrmann, 1996).

The other observation is that LPLs always shift their reflections in order to tackle elements out of their comfort zone. In this regard I refer to the next extract of LPL1's reflection:

---

LPL1 *Here there was an important symbiosis ... [categorising in B quadrant] ... While these two students were having an interaction there as interviewer and interviewee ... there was a mixture ... as I said, for instance, students M uses a drawing to try to show that the search for a job is hard process [theorising in A quadrant] ... he shows that it is necessary to walk a lot ... it is necessary to "corrode" the shoes ... No pain, no gain ... so he tried to explain this using that a car is moving there ... there was a tendency to mix the approaches ... because we find that these other students are more rule guided ... [B quadrant] but it happens in an environment of joy ... look that the whole group students were involved ... [B quadrant] it is not like the previous, which just involved two persons, here all 4 group members created the conditions to be involved and participate as such ... I think that the C quadrant is more adequately involved here. But there is a tendency to involve the D, which is more intuitive and spontaneous can be adequate ... [Synthesising in D quadrant].*

---

The LPL1 extract of reflection above shows that he started reflecting in the A and B quadrants (his most preferred) and then gradually he moved to his least preferred D quadrant, making a synthesis of one group performance within the learning opportunity.

The observation that lecturers reflect out of their comfort zone, either relinquishing the least preferred or moving forth and back signals that it is possible to think of a model of Learning Style Flexible Reflection (LSFR). Within such a model we would admit that a lecturer can

spontaneously reflect within his/her most preferred modes of thinking or move out of his/her comfort zone either spontaneously or stimulated by the task or by the facilitator's efforts.

Working on the framework and model of De Boer, Steyn and Du Toit (2001) and de Boer et al (2012), I proceeded to the triangulation of findings from LPLs' reflection with literature contributions of scholars such as Clarke et al. (1996), Kearney and Hyle (2004), Korthagen (1993), Leitch (2006), and Yorks & Kasl (2002). Then I concluded that the model of whole-brain reflection would appear to be composed of four layers, namely ways of reflecting, practitioner expectations when reflecting, turn-offs with which the practitioner struggles while reflecting, and a preferred way of reflecting.

Figure 4.17 shows preferred ways of reflecting associated with the different brain quadrants. It shows A quadrant preferred ways of reflecting, including analysing, theorising, quantifying, logical processing and explaining/clarifying. B quadrant dominant learners prefer to reflect through organising, sequencing and categorising, among others. C quadrants' preferred ways of reflecting are discussing human-related issues, sharing and coaching, etc. D quadrants prefer to reflect through conceptualising, synthesising, integrating and summarising.

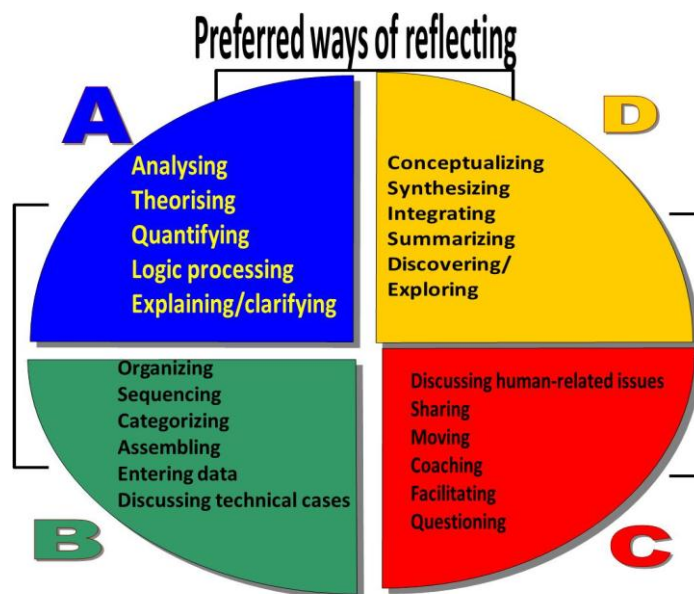


Figure 4.17: Preferred ways of reflecting

Figure 4.18 represents the practitioner turn-offs, the aspects of a situation with which the practitioner struggles while reflecting. Accordingly the turn-offs of the A quadrant include vagueness, expressing emotions, imprecise concepts or ideas, lack of logic and intuitive conclusions. While reflecting B quadrants struggle with unclear information, ambiguity, emotional-driven information and intuitive/unproven conclusions. C quadrants are challenged by struggling with too much data, lack of interaction, facts, theory and logic-orientated information. D quadrant professionals struggle with confinement to procedures, deadlines, logical processes and structured information.

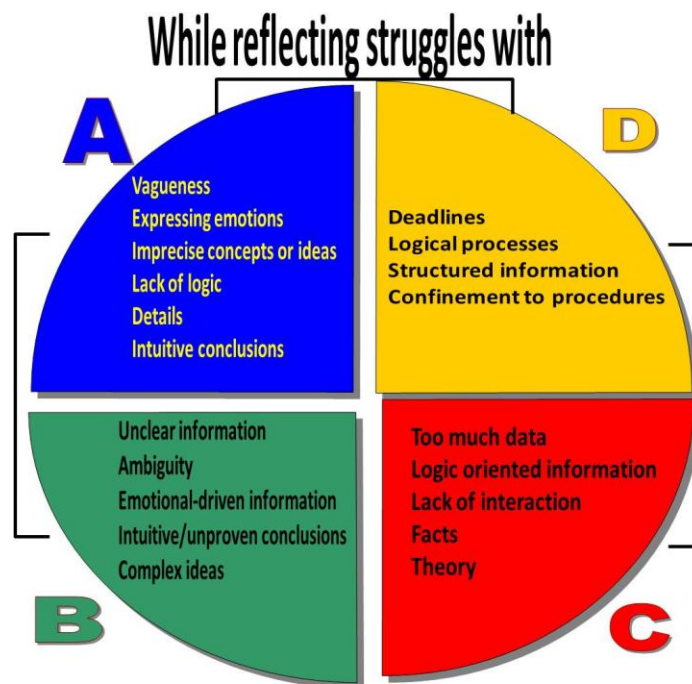


Figure 4.18: Aspects with which the practitioner struggles while reflecting

When a practitioner is about to engage in reflection, he/she carries with him/her a set of expectations related to the situation or phenomenon about which he/she is going to reflect. As figure 4.19 shows, such expectations include, among others, clear purposes, terminology defined, challenging problems and factual/concrete information (A quadrant). Well-structured data/information, detailed outlines, precision and clear instructions are some B quadrant expectations. C quadrant expectations while reflecting include, among other aspects, hands-on activities, small-group discussion, opportunities to share and stories/narratives. Finally D quadrant individuals, while reflecting, expect mental imagery, discovery, problem-orientation, vision orientation and novelty.

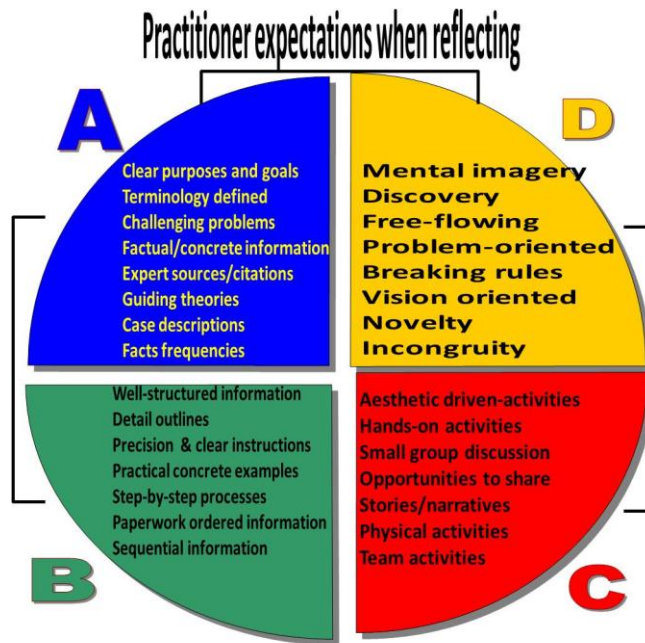


Figure 4.19: Practitioner's expectations when reflecting

The last layer of whole-brain reflection, as presented in figure 4.20, entails ways of reflecting. Accordingly, the A quadrant individual reflects through case studies, scientific research findings and feedback on questionnaires.

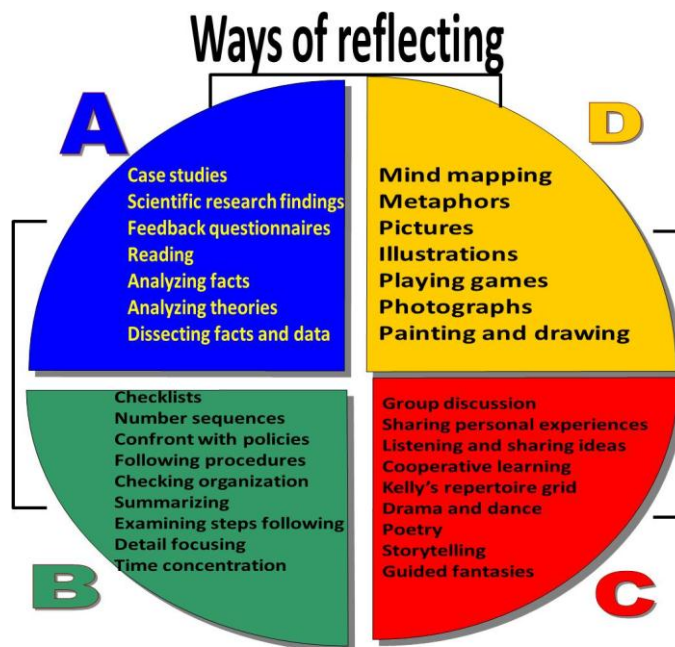


Figure 4.20: Ways of reflecting

Some of the B quadrant preferences include checklists, worksheets, number sequences, being confronted with policies and checking organisation. C quadrant reflection occurs through group discussion, cooperative learning, Kelly's repertoire grid, drama and dance, poetry, storytelling guided fantasies. D quadrant reflection can take place through mind mapping, metaphors, and pictures, playing games, photographs, painting and drawing.

All the layers of reflection I presented in the previous paragraphs of this section compose the model of LSFR as it appears in figure 4.21.

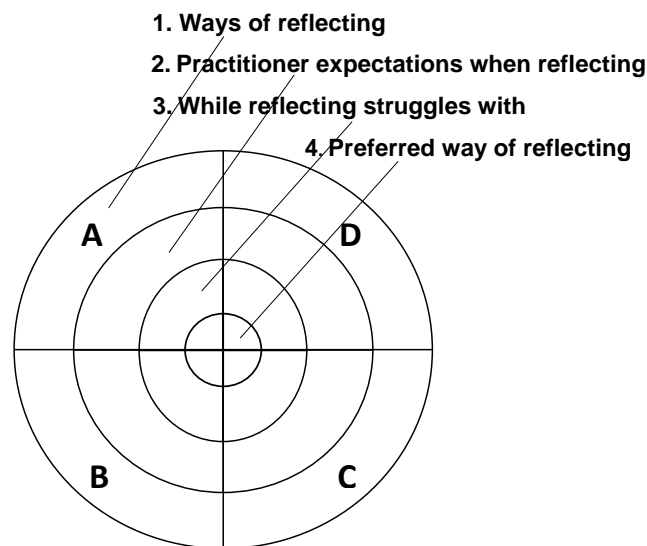


Figure 4.21: Model of whole-brain reflection

According to this model, depending on his/her brain preference, the practitioner should demonstrate determinate ways of reflecting. These in many instances coincide with the different tools for reflection presented in the study. Besides, the practitioner patterns a set of expectations when engaged in reflection. These expectations determine his/her lower or higher focus on certain patterns of information. Hence we have observed that the practitioner, while reflecting, concentrates on explaining issues, on clarification and on listing, on practice as conducive to perfection and appraising the order, or either on intuitive conclusions or on raising awareness of feelings. Within the model, while reflecting, the practitioner struggles with what Herrmann calls turn-offs of his/her quadrants, which are mainly features of his/her least preferred quadrants. Finally there are preferred ways of reflecting.



From the questionnaire on innovative practice data (N=447) I found that although doing it in imbalanced ways, lecturers address the four brain quadrants while facilitating student learning. Hence, most lecturers indicated that they concentrate more on encouraging activities such as the use of textbooks and manuals, critical thinking, lectures, carrying problem analysis and engaging students in activities that involve following precise procedures. These are mostly left-brain related activities. The right-brain related activities indicated are namely group discussions, using visualisation, field trips, guidance by emotions and feelings, guidance by intuition, role play, music and storytelling.

Since there is still to answer the question, How can those practices be used to design a model of LSFR?, I would advance that the learningshops and action research I carried out with the LPLs showed me that under guidance and with interest, understanding and commitment, lecturers gradually adopt LSF within their practices. The lecturers' experiences of implementing LSF, as I presented in case studies section, showed that activities such as field trips, role play, music and storytelling appeared to activate most students involvement during the learning opportunities. All LPLs, after observing their performance, were willing to make improvements towards a full LSF approach. They constructed new meaning and transformed their understanding of how to facilitate student learning through interaction with the outcome of their previous experiences (Gravett, 2005). Therefore, within their subsequent interventions, they appeared to be satisfied with their performance and reported general student satisfaction.

It appears that the gradually increasing lecturer awareness that people learn differently might be conducive to their understanding that people reflect differently as well. This might represent one step ahead towards their adoption of LSFR. However, lecturer engagement in this reflective effort appears to attune their minds to the need to promote reflection, through developing portfolios, diaries and peer feedback. Hence certain LPLs happened to use within their learning opportunities, methods of facilitating learning such as case study (A quadrant) and group discussion (C quadrant) that, according to Gravett (2005), can be employed to promote student reflection. Other LPLs guided the students to reflect on the application of lessons learned from reading materials to their context (A and B quadrants), or to report their experiential learning session through simulation (quadrants C and D). To these tools for facilitating learning I could add the set of tools that scholars (Clarke et al.,



1996; Kearney & Hyle, 2004; Korthagen, 1993; Leitch, 2006; Yorks & Kasl, 2002) indicate to be associated with stimulation of reflection within the right non-rational hemisphere, namely metaphors, drawing and painting, photographs, pictures and guided fantasies. Most of these tools are not entirely new to lecturer practice. Following social constructivism, since each LPL had a unique construction (derived from exclusive practice), I expected to develop the model of LSFR through social interaction, where each LPL's experience, insight and solutions were going to be explored synergistically (Von Glasersfeld, 1995). Therefore the call for lecturers to capitalise on their practices of LSF in order to promote LSFR is not a revolutionary proposal. It is rather a call for the transformation of one's practice through building and expanding on one's previous experience. Such transformation should take place through lecturers' engagement in finding solutions and collaborative construction of new meaning. More precisely, I would call on lecturers to look at the model of whole-brain reflection I presented in the previous section as the guideline to promote LSFR.

The LPLs' practice provided rich and useful insight into the design of LSFR. Their reflections, mainly during the peer mentoring sessions, nested within their brain profiles crossed with scholars' proposals, allowed me to advance a proposal of whole-brain reflection. This model coupled with lecturers' practice directs us to guidelines for adopting LSFR within lecturing practice.

In summary, within the effort to design LFSR, we ought first to look at the whole-brain reflection spectrum that I presented in this chapter. Then we should analyse the potential presented by each way of reflecting (reflective tool), keeping in mind its connectedness with each of the brain quadrants. And finally we should proceed to its implementation, taking into account the students' turn-ons (expectations) and turn-offs (what they struggle with). Constraints, such as time shortage, workload and the number of students determine that the most encompassing tool should take precedence over the others. Following Von Glasersfeld (1995), I would argue that LSFR only appears viable to the extent that it proves to be useful in the contexts in which it was developed through listening to the LPLs, interpreting what they did and said, and trying to build up such a "model" based on conceptual structures.

#### **4.12 Conclusion**

In this chapter I presented the results of the empirical study I have carried out. Hence I presented data from the questionnaire on innovative practice as part of the baseline information. I also presented the results of the semi-structured interviews to senior lecturers and lecturers occupying management positions. Cases studies of action research carried out by LPLs are presented as evidence of the lecturers' engagement in critical reflection as conducive to their professional learning. Then I present the lecturers' reflection as nested within their case studies and brain profiles. I triangulated such reflection data with contributions from scholars and in the pursuit of a model of whole-brain reflection. This is presented in the last section of the chapter.

In the next chapter I present conclusions of this study and implications.

## CHAPTER 5: Conclusions and implications

### 5.1 Introduction

In this chapter I present the conclusions drawn from the empirical study. In the introductory chapter I have presented a detailed account of the context of HE in Mozambique. Still I found it useful to present a brief overview of this context in this chapter. The purpose is to frame the conclusions drawn against this background information. Following the context I proceed to present the main conclusions, in which I distinguish between conclusions from the methodology and those from the remainder of the study. In presenting the results of the study, I organise the sections according to the research questions that guided the study. Finally I present the Implications from this multiple-layered constructivist action research study.

### 5.2 The Mozambican Context of higher education

Throughout the study I stressed the fact that Higher Education in Mozambique is witnessing major multi-dimensional transformations. There is a rapid increase of HEIs, combined with massification of access and diversification of courses offered (Chilundo, 2006). Globalization and internationalization as well emerges as shaping the HE landscape (Brito et al, 2008; Knight, 2008). These transformations require the academic staff to keep abreast. The situation of academic staff in Mozambique is problematic. Besides being shared by many public and private HEIs, some lecturers have low qualifications, while others are even unqualified. For instance, nearly 60% hold only a Bachelor's degree, while 25% have obtained a Master's degree and only 15% have a Doctorate (Mário et al., 2003; Ministério de Educação e Cultura, 2006). Hence the sub-system faces the pressure to increase lecturers' qualifications and professional competence, among others, through the provision of education qualification courses.

Having considered the facts above, I formulated the following main research question: *How can we promote critical reflection on innovative practice contributing to professional development of academic staff in Mozambican Higher Education Institutions?* This question encompasses the following critical questions: To what extent is reflection integrated within existing PD interventions in the Mozambican context of Higher Education? How can I (we) encourage critical reflection in HEIs? What is the relationship between lecturers' brain

dominance profiles and their styles of reflection? How can I (we) use the principles and practices of LSF to design a model of Learning Style Flexible Reflection (LSFR)?

Carrying out this study while bearing in mind the idea of promoting critical reflection, implementing LSF and adopting action research, I was supported and guided by a number of assumptions. Firstly, whole-brain model or LSF as it is implemented in this study appeared to be recommended approach to facilitate learning in such a way that the potential of the lecturer (as professional learner) is maximised. Secondly, LSF offers the mentor the opportunity of facilitating peers professional learning in order to transform their practices with a view to contribute to developing their full potential as whole-learning persons. Thirdly, provision of constructivist learning environment, where lecturers (as professional learners) were going to be confronted with opportunities to interact with authentic problems, was commensurate to afford room for joint process of making meaning through involvement in socially situated learning. Finally, I envisaged action research as recommended way for us to monitor the innovative practice and to promote critical reflection in order to achieve a deep understating of one's experience while contributing to advancing knowledge.

### **5.3 Methodological aspects within the study**

In this study I adopted an action research design complemented by a mixed methods approach, since answering specific research questions required me to integrate qualitative and quantitative data (Creswell et al., 2003). Doing this, I was guided by the assumption that mixing methods would allow me to converge findings and/or to generate a new comprehension (Teddlie & Tashakkori, 2003). Therefore I combined questionnaires on innovative practice, the HBDI results, semi-structured interviews, video- and audio-recording and photographs. The questionnaires, the semi-structured interviews and the HBDI basically provided baseline information for the study.

The process of carrying out my action research, mentoring my fellow lecturers' action research and the assessment made by them allowed me to make the following deductions:

Action research is the appropriate process to follow within the context of mentorship. This process is grounded within the idea of promoting reflection about one's practice. Hence within the study I challenged the LPLs to assess their efforts of implementing the innovative

ideas. Meanwhile, I mentored them in carrying out their efforts. By means of action research, I monitored my practice. As result, I conclude that the process of analysing, assessing and monitoring one's practice is the very essence of action research, which goes beyond providing room for one to share the results of self-assessment with the scholarly community. I find support for my assertion in McNiff and Whitehead (2002) when they show that studying my mentoring practice and its underpinning assumptions by means of action research assists me to develop a creative understanding of myself and my own professional learning and growth. Therefore, in my experience of mentoring my fellow lecturers' professional learning, I enjoyed room to analyse, frame and reframe my practice in order, for instance, to change my style of mentoring from directive to facilitative. In this regard, as mentor, my practice evolved from a situation where I indicated the direction and took many decisions, to a facilitative one where I played a Socratic role, asking questions, being emphatic with fellow opinions, looking for consensus and encouraging their freedom to contribute with challenging ideas.

Another element to co-substantiate my assertion is my learning, from reflecting in my role as mentor, to offering differentiated support to fellow lecturers. With this I mean my increased ability to balance the necessary support and challenge needed by different LPLs, with dissimilar levels of accomplishment and needs. Throughout the process I observed that certain LPLs easily thrived in grasping the main ideas of the study, showing increased confidence and autonomy. Conversely, others were 'surviving'. With some effort I observed that they clearly needed different degrees of support of challenge, which I increasingly managed to achieve.

When lecturers are involved in a professional development programme action research offers them a process to account for what they do in their teaching practice in a scholarly way. As I mention in Chapter 3, scholars support this position. Webber et al. (2003) put it strongly when they indicate that action research is responsive to the changes that the practitioner experiments with in his/her professional development while carrying out research because it is iterative and opens room for him/her to revisit foundational sources. In this study LPLs confirmed it when, in the assessment of the learningshops, they indicated that it would be beneficial to introduce this novelty of matching action research with professional development interventions carried out by the Center for Academic

Development (CAD). Interestingly, one of the LPLs mentioned that he felt that the he was “in better position to observe my behaviour”. He acknowledged the fact that he thought that through acquaintance with action research he was enlightened and emancipated, since he was now in possession of a metaphoric tool that would assist him to learn about his practice, through the dialectical interplay between his practice, his reflection and professional learning. Thus he confirmed that action research is future-oriented.

Action research is the self-reflective inquiry lecturers can employ to monitor their transformative lecturing practices in order to show that they are successfully working according to their values and that their efforts are useful to improve their situation and institutions. This aspect was apparent throughout the action research. In my action research I managed to obtain evidence that I was working according to the values of freedom, collaboration and equality of opportunity. Therefore, within learningshops, adopting a learning-centred approach, I allowed LPLs to conceive their action research proposals, which should be grounded in their practice. Hence they were free to move forwards according to their interests and motivation. Consequently I was promoting freedom and equal opportunities for all LPLs. The equality of opportunities was also present in my efforts to accommodate all the LPLs’ brain quadrants. In these learningshops one of the main learning strategies was group work, which is conducive to collaboration, essential for improvement though discourse and critical reflection.

Within their action research processes the LPLs monitored the extent to which they were working according to these values. In the case studies I show that the LPLs attempted to promote learning environments where their students could learn according to their preferences, what was a embodiment of freedom and equality of opportunities. Hence, action research allowed the lecturers to make their professional lives more meaningful since they communicate their ideas as living theories of their practice, explaining what they were doing, why they were doing it and what they hoped to achieve (McNiff & Whitehead, 2006).

#### **5.4 Main findings and conclusions**

From the results presented in Chapters 4 I could derive a number of findings and conclusions concerning the integration of critical reflection within professional development

and the adoption of LSF as a holistic and learning-centred strategy to facilitate academics' professional learning. These are presented next.

#### **5.4.1 To what extent is critical reflection integrated within existing PD interventions in the Mozambican context of Higher Education?**

Firstly, to answer this research question I realised that two subsidiary research questions are relevant, namely what professional development interventions are offered in the Mozambican context of HE and how critical reflection is integrated within these interventions. Secondly, triangulation of literature, semi-structured interview data and questionnaires on innovative practice data were required. The analysis of such empirical data resulted in the following findings:

The pursuit of postgraduate studies is the main target of professional development efforts in Mozambique. In this regard, when asked about professional development, semi-structured interview respondents mentioned, first and foremost, the pursuit of master's and doctoral courses by academic staff. The same position appears in documents that indicate the need for promoting academic staff qualifications (Chilundo, 2006; Ministério da Educação, 2009a; 2009b; 2010b; Campos, 2011). Short courses appear to compose the second category of professional development activities pursued by lecturers. This may be the result of the lack of formal lecturer certification programmes in Mozambique, which results in many lecturers entering the field without the necessary skills to facilitate learning. Therefore the majority of semi-structured interview respondents (72%) indicated that lecturers participate in courses on HE pedagogy and research methods while the remaining respondents mentioned participation in the field of content knowledge-related training (28%). This is further supported by questionnaire responses, where the majority of lecturers indicated to have attended short courses about teaching methods (80%), research methods (64%), and student assessment (62%). Participation in scientific events, such as conferences, seminars and workshops, is considered as an intervention that brings lots of advantages in promoting lecturers PD. Still, informants concede that there are few opportunities to participate. Among the reasons advanced I found the weak incidence of events organised and with low financial capacity to attend. Research detached from postgraduate training is still a challenge in Mozambique. Sustaining that claim I found semi-structured interview respondents indicating that research is scarce (66%); others argue that there are lecturers who are strongly and



seriously devoted to doing research although there is no support (24%), while a third trend indicates that much research is carried out in answer to the request of Non-Governmental Organizations (NGOs) and international agencies, with the main problem being the shortage of ways to disseminate such research. The discrepancy between doing research and the lack of results dissemination is supported by questionnaire respondents, who show that 62% were involved in scientific research, while only 40% mentioned publication. The respondents indicated that with due attention to certain aspects the levels of scientific research and publication should be increased.

There are two assertions I can make concerning reflection in this context. The first regards the potentialities for reflection to occur as integrated with the PD interventions carried out by the Mozambican HEIs. In this respect I conclude that there is ample room for integration of reflection within PD in Mozambique. In this my point of view is sustained by the information provided by respondents who indicated that interventions such as seminars and discussions, short-courses, research group work, the performance appraisal system and peer lecturing, and mentoring have the potential for the propagation of reflection. Despite such affirmation, I cannot conclude that reflection occurs within these interventions. As I have demonstrated in Chapter 2, literature shows that one intervention can or cannot promote reflection, depending on it being located within the Traditional PD or reflective practice PD. The second assertion regards lecturers being engaged in reflection as part of their professional development. In this regard I recall Van Woerkom (2010) saying there are radical differences between the extent to which participants say they reflect and the provision of examples of their engagement in reflection. Therefore, according to what respondents say, I conclude that reflection appears to be still modestly linked to PD interventions carried out by the Mozambican HEIs. Most semi-structured interview respondents contend that reflection is supposed to be naturally framed within the lecturer practice; yet it occurs in an unsystematic fashion. Still, these respondents indicated a set of activities taking place within their divisions and that, in their opinion, provide space for lecturers to reflect. Such activities include seminars and discussions (indicated by 31% of respondents), short courses (28%) and the work of scientific groups (11%).

#### **5.4.2 How can I (we) encourage critical reflection in HEIs?**

Three sources of information assisted me in answering this question. Firstly, the literature review provided a wide array of possibilities. Secondly, the semi-structured interviews provided those possible ways for the promotion of lecturer reflection that appears to be realistic in the Mozambican context. Finally, the experimental professional development intervention I carried out presented the way I found most appropriate within the frames of my potentialities and limitations. Therefore it represents my living theory of how I manage to promote critical reflection in a collaborative effort with my fellow lecturers. In the next lines I present the deductions I have made considering the inputs from these three sources.

Learningshops offered at faculty, departmental or scientific group level appear to be effective in promoting critical reflection for academic professional development in higher education. Lecturers who participated in the learningshops showed in these meetings increased commitment and everyone struggled to achieve the highest gains from the moment of sharing experiences and constructing meaning based on each lecturer's practice. It was apparent from their increased engagement the intent to grasp this opportunity to link theory to classroom practice, to interpret and assimilate knowledge from peers, books and the experience of carrying out action research. Therefore it provided an opportunity for applying and integrating knowledge obtained from other professional development interventions, such as short courses on teaching methods, student assessment and research methods. Moreover, the learningshops allowed, especially the young lecturers, to feel that they were not alone in facing limitations and feelings and that they could be role-modelled by more experienced peers who shared their experiences. Somehow corroborating this, semi-structured interview respondents suggested roundtable discussions, evaluation meetings and scholarly debate as a way to promote critical reflection of academic staff.

Action research, either framed within learningshops, short courses, etc or not should have the potential to support lecturers' critical reflection. My experience of mentoring the LPLs in carrying out their small-scale action research processes showed me its possibilities and potential. LPLs showed how, while carrying out their action research, they managed to implement the iterative dialogue between theory and practice with enrichment of both their theories and practices. Besides, they presented evidence of the action research being

context-specific and conducive to continuous cumulative meaning-making. Therefore most of the LPLs at a certain point appeared to be pleased with their achievements. They showed how such achievement was sustainable, since they were able to implement its lessons on an on-going basis. Semi-structured interview respondents, in the same direction, argued that lecturers have to approach research as part of their duties and, in some cases, they even mentioned the need for lecturers to turn their daily problems into potentially objects of their research, which can be carried out with simple and accessible resources, such as pencil, paper and time. Visibly, they were point out to action research, which, according to McNiff and Whitehead (2006), can be carried out by anyone if he/she is curious, creative and willing to do it, even with lack of specialised equipment.

We can encourage critical reflection through the creation of new tools or using the existing lecturers' appraisal instruments as reflective tools. This position was sustained by many semi-structured interview respondents. Some lecturers, from institutions such as the UEM, indicate that their institutions have developed a comprehensive lecturer performance appraisal instrument, including self-assessment and assessment by student. The only think is a need to attune such tools as self-assessment and assessment by student as source of information for lecturer reflection.

The organisation of and participation in seminars, conferences and other forms of debate is one way to encourage lecturers' critical reflection that should be more explored. Some respondents conceded that lecturers should meet in a kind of roundtable discussion, which does not impose much requirements, and engage in dialogue about the various events that occur in their living or working environment. Others suggested that lecturers should be more involved in debates and meetings that are organised by other institutions, such as ministries, media and NGOs. A third group advanced that, in cases of HEIs with branches in other provinces, there should be decentralisation to organise such meetings at their level. Such seminars could include regular discussions devoted to curriculum and to student performance, among others, to promote reflective debate. According to respondents, after promoting lecturers' readiness to see criticism as an enriching moment, official meetings such as those occurring at departmental, section or scientific group level should be explored in greater depth to foster critical reflection.

In closer link with the experience of promoting my fellow lecturers critical reflection, through learningshops and action research, in the next paragraphs I describe the resulted lessons. Such lessons concern my practice as facilitator of learning and co-learner. I explained in the study that the lessons I gained as mentor are similar to those of facilitator of learning.

- a) I increasingly understood that lecturers engage in differentiated learning, which entails each LPL constructing own meaning and developing own practice theory.
- b) Through adoption of constructivism, I managed to teach for application, which transcends teaching for understanding. In this regard, I stimulated lecturers to apply in their practice the knowledge they acquired in the PD intervention.
- c) Based on reflection on my practice, which I tried to mirror on my fellow lecturers practice, I improved my style of facilitating learning from directive to truly facilitator.
- d) I increased my management and interpersonal skills. Hence, I learned to maintain and to improve the working dynamics within a mature learning community with own rules and norms established.
- e) I increasingly learned to look to my practice of facilitating learning as holistic, rather than composed by single pieces of strategies linked to the diverse brain quadrants.

The next three lessons are those I achieved as co-learner from this experience in the same way as my fellow lecturers.

- a) We increased our capacity to view our whole practice as value laden. We were guided by values of freedom, collaboration, and equality of opportunities. Accordingly, we learned to judge our practice and to take major decisions concerning how to proceed through gathering evidence of living according to these values. Such evidence was validated by means of critical reflection.
- b) My fellow lecturers increasingly managed to promote ownership of learning, mainly by giving learners opportunities to negotiate meaning. On my side, I managed to

build a community, allowing my fellow lecturers to make their voices heard and to explore the content.

- c) My fellow lecturers learned to plan and facilitate their learning opportunities accommodating the need to consider the curricular portrait in combination with the essence of the whole brain spectrum. Hence, they focused on the four brain quadrant features in terms of their strengths and weaknesses.

#### **5.4.3 What is the relationship between lecturers' brain dominance profiles and their styles of reflection?**

This research question is composed of two subsidiary-questions, namely (a) *What are the lecturers' brain dominance profiles?* and (b) *What is the pattern of reflection typical for each brain profile?* In order to answer the first of the sub-questions, I administered the HBDI to all lecturers participating in the learningshops (LPLs). For the second subsidiary-question I audio- and video-recorded learningshops and mentoring sessions. Then I analysed the transcripts and nested the emergent patterns of reflection within Herrmann (1996) four quadrants. The results show the following:

There was an emergence of patterns of reflection that were linked to the whole-brain model. Hence analysis of LPLs' reflections showed that they tend to reflect mostly within their preferred brain quadrants although, with or without challenge, they could reflect out of their comfort zones. Therefore I observed patterns of reflection that were connected with the following processes: listing, fact-based account and issues requiring explanation and clarification (A quadrant); following the principles, appraising the order, details highlighting, practice makes perfect, and tracking on session structure and process (B quadrant); people persuasion, intuitive conclusions and awareness of feelings (C quadrant); and awareness to experimenting, attention to space, diversity recognition, and notice to devising solutions (D quadrant).

Working on the results indicated above illuminated by the whole-brain model, and in agreement with the literature description by different scholars (Clarke et al., 1996; Kearney & Hyle, 2004; Korthagen, 1993; Leitch, 2006; Yorks & Kasl, 2002) and the ideas of de Boer et al (2012), I advanced a scheme of whole-brain reflection. Such a tentative model, which I consider as one that can inform learning style flexible reflection, would be composed of four

layers, shown in detail in Chapter 4. Such layers include (a) ways of reflecting, (b) practitioner expectations while reflecting, (c) aspects with which the practitioner struggles and (d) preferred ways of reflecting. Since within each layer the four quadrants are present, I find that each person has a different way of reflecting, different expectation, and turn-offs according to the quadrant at which he/she operates at the moment of reflecting.

#### **5.4.4 How can I (we) use the principles and practices of LSF to design a model of Learning Style Flexible Reflection (LSFR)?**

I find this research question entailing two implicit subsidiary-questions, namely (a) *To what extent do lecturers adopt LSF within their practices?* and (b) *How can lecturers' practices be used to design a model of LSFR?* Constructivism appears to be at the very heart of this research question, since it postulates that lecturer professional learning is an active process of constructing meaning through connecting previous experience and new knowledge (Gravett, 20005). Therefore, this question implies lecturers building on their experiences in order to construct new meaning through addressing the model of LSFR. To answer this research question I employed triangulation of the literature review, audio- and video-recording data and questionnaire data. In the next paragraphs I explain my achievement.

In answering the previous research question I observed that lecturers can reflect along all the brain quadrants – hence I can talk about whole-brain reflection. From the questionnaire on innovative practice data I found that lecturers address the four brain quadrants while facilitating student learning, employing an array of methods. Connected to this within the experimental professional development intervention I facilitated, I also found LPLs using diverse methods of facilitating learning that can be employed to promote student reflection. Moreover, the literature presents a number of tools to promote reflection within the right hemisphere, which are not that far from the ones employed by lecturers in Mozambique.

From the exposed in the previous paragraphs, I contend that within the effort to use the principles and practices of LSF to design a model of Learning Style Flexible Reflection (LSFR) we should analyse the potential presented by each way of reflecting (reflective tool) connected with each brain quadrant. Then we should proceed to its implementation, taking into account the students' turn-ons (expectations) and turn-offs (what they struggle with).

Since LPLs were able to implement some efforts towards it, I can argue that LSFR is apparently viable to the extent that experimentally it is proved to be useful.

## **5.5 Implications**

In this report I provide an account of the action research I carried out with fellow lecturers within our practice. It is a description of how I proceeded to promote my fellow lecturers' and my professional learning by the adoption of a truly situated learning approach with the purpose of improving our educational practices. It was an opportunity for us to construct new meaning in order to improve our practice and advance knowledge and theory. Throughout the study I have made it clear that it is not my intention to transfer this study's findings to other contexts and practices. Still, I believe others may, in case of interest, extract lessons to be adapted to their contexts. Due to its magnitude, I believe that a study like this may have implications, either derived from the findings achieved or emanating from its limitations. Therefore, in the next lines I present the implications of this study. Such implications are, on the one hand, derived from the baseline information gathered through questionnaires on innovative practice and semi-structured interviews (for policy level). On the other hand they are derived from the action research process and should inform our (my and LPLs') practice concerning mentorship and the practice of facilitating learning.

### **5.5.1 Implications for practice and policy level**

While carrying out the baseline study I found that HEIs present vast open structures, conducive to professional development, which allow for lecturers to look for themselves and use the opportunities they find. It is an option that stimulates a pro-active attitude but appears to elicit the survival of the fittest and smartest. For me this implies that institutions are challenged, to work on structure and put to function and monitor the guidelines for professional development, especially concerning the pursuit of post-graduate courses.

The questionnaires and respondents in semi-structured interviews have pointed out the importance of scientific research for reflection and professional development. The repercussion of this finding is the urgency in the establishment of a framework conducive to the increase of scientific research. In order to put this to work it is necessary to provide basic conditions such as books/journals, a transparent grant system and salaries to reward research, and regulatory mechanisms and appraisal systems that stimulate research.



Without such conditions there is the danger that the number of lecturers devoted to carrying out research, when faced with the ongoing context, might diminish. Besides, there are calls for the creation of data bases in which all research interests per university lecturer or group are recorded. This might be conducive to the identification of areas or research lines, which assist in the provision of functionality for planned and national agenda-aligned research.

Findings from this study indicate that professional development opportunities cannot be limited to induction courses for new staff. Rather, there is a need for space creation for the inbounds, insiders, boundaries and outbounds (Driscoll, 2000) to share knowledge and experience. These findings present as corollary the needed attention on professional development interventions, which are eminently reflective such as thematic seminars, workshops, discussions between academic staff and employers in the labour market, and in-service opportunities for lecturers to meet at regular intervals to discuss their professional needs and concerns and support one another.

### **5.5.2 Implications for educational research**

My findings, either within the experimental professional development intervention or from semi-structured interview respondents, show that action research is practical, cost-effective and promotes situated learning. The implication of this is the requirement for emphasis to be put on increased dissemination of this way of carrying practitioner research, which is an established process to promote lecturer reflection on own practice, professional development and to advance knowledge. It can be done through, among others, offering specific courses and the establishment of divisions for action research within the unities for professional development at universities.

The review of literature I undertook showed that almost all the studies I found about Mozambican higher education sub-system were more a kind of policy report and general guidelines conceived at the macro level. The repercussion of this shortcoming is the need for research concerned with teaching practice from an inside perspective and concerned with aspects pertaining to the learning process per se. Aspects such as the attitude of lecturers towards prevalent learning styles among their higher education students, teaching styles adopted by HE lecturers, lecturers' attitudes towards professional development,

among others are just some examples of the issues that can be tackled by research initiatives concerning Mozambican HE.

In this study I advance a proposal of whole-brain reflection. As I have made it clear throughout the study, my epistemological belief is that knowledge creation presents mere possibilities, since it is uncertain and ambiguous, and its assertions are provisional. Keeping this in mind and considering the possibility of working with bigger sample and working with more diversified tools to promote reflection, it is apparent that research entirely devoted to deepen the findings concerning the linkage between brain quadrants and reflection is still necessary.

Within a context of limited resources such as Mozambique, it appears that a study focusing on finding out, apart from post-graduate courses, the most context-relevant, useful and cost effective ways to promote lecturers' professional development, should assist in establishing priorities. In my study, as baseline information, I identified the tools being used. Therefore, I would, for instance, recommend a study focusing on finding out what is contained in university or faculty practices in terms of activities judged to be more effective in promoting lecturer' professional development.

This study does not deal with private HEIs. However, during the process it has become noticeable from respondents and some reports that sharing academic staff is an inevitable phenomenon in Mozambique. This implies the necessity of studies concerned with the promotion of professional development in private HEIs, with the place of reflection in private HEIs, with finding out the best ways of sharing academic staff between public and private HEIs, among others.

## CHAPTER 6: Meta-reflection on the action research process

### 6.1 Introduction

I titled this chapter meta-reflection since it consists of my reflection on the process of carrying out this action research in an whole-brain effort to

*identify, reflect upon, record, share and assess my personal learning processes, preferences, styles and difficulties throughout the learning experience (Leitch & Day, 2001:241).*

I recall that the overarching theory underlying my study is the Herrmann model, which states that our social and professional practices should be viewed through the four quadrant lenses, since different people present different degrees of preference and avoidances for different ways of knowing. Therefore our actions towards them must be whole-brained.

Looking over the process of carrying out this study, which was a reflective venture, I found that it provided me with rich experiences from which I could extract valuable lessons. Therefore my aim in writing this chapter is to describe and discuss thoroughly such personal learning experiences that I had or observed. In doing so I consider and sometimes try to answer some of the following questions: what personal challenges did I face, and how did I go about in order to cope with them? What experiences appeared to be the significant sources of my personal learning? What did I do in order to acquire knowledge related to certain practices or occurrences? Could I have done anything differently in order to learn something? I did this because engaging in reflection, according to Luttrell (as quoted by Husu, Toom & Patrikainen, 2008), implies sustaining several, and occasionally contradictory, constituents and emotions and expanding instead of narrowing the fields of analysis.

Hence, throughout the chapter, and through the whole-brain lenses, I look back on my experience of carrying out action research on my practice of facilitating lecturers' professional learning and, following Glen, Clark and Nicol (1995), I try to reconstruct, re-enact and/or re-capture its events and accomplishments with a view to finding the possibility of living life more richly 'from the inside'. Such a process appears to be a meta-constructivist

endeavour, since it entails extracting new knowledge from the process of carrying out my action research which was per se a constructivist endeavour. This substantiates the epistemology of my study, namely constructivism. Accordingly I view professional learning as a collaborative process that involves multifaceted actors in terms of background and perspectives. Such learning entails professionals constructing meaning that represents merely possibilities and, being uncertain and ambiguous, giving provisional answers.

## 6.2 Reflective benchmarks of my meta-reflection

In Chapter 2, while discussing the models of reflection and resonating with scholars' proposals, I advanced an expanded and embedded a tri-partite model of reflection. Here I further expand such a model towards my model of meta-reflection, presented in figure 6.1.

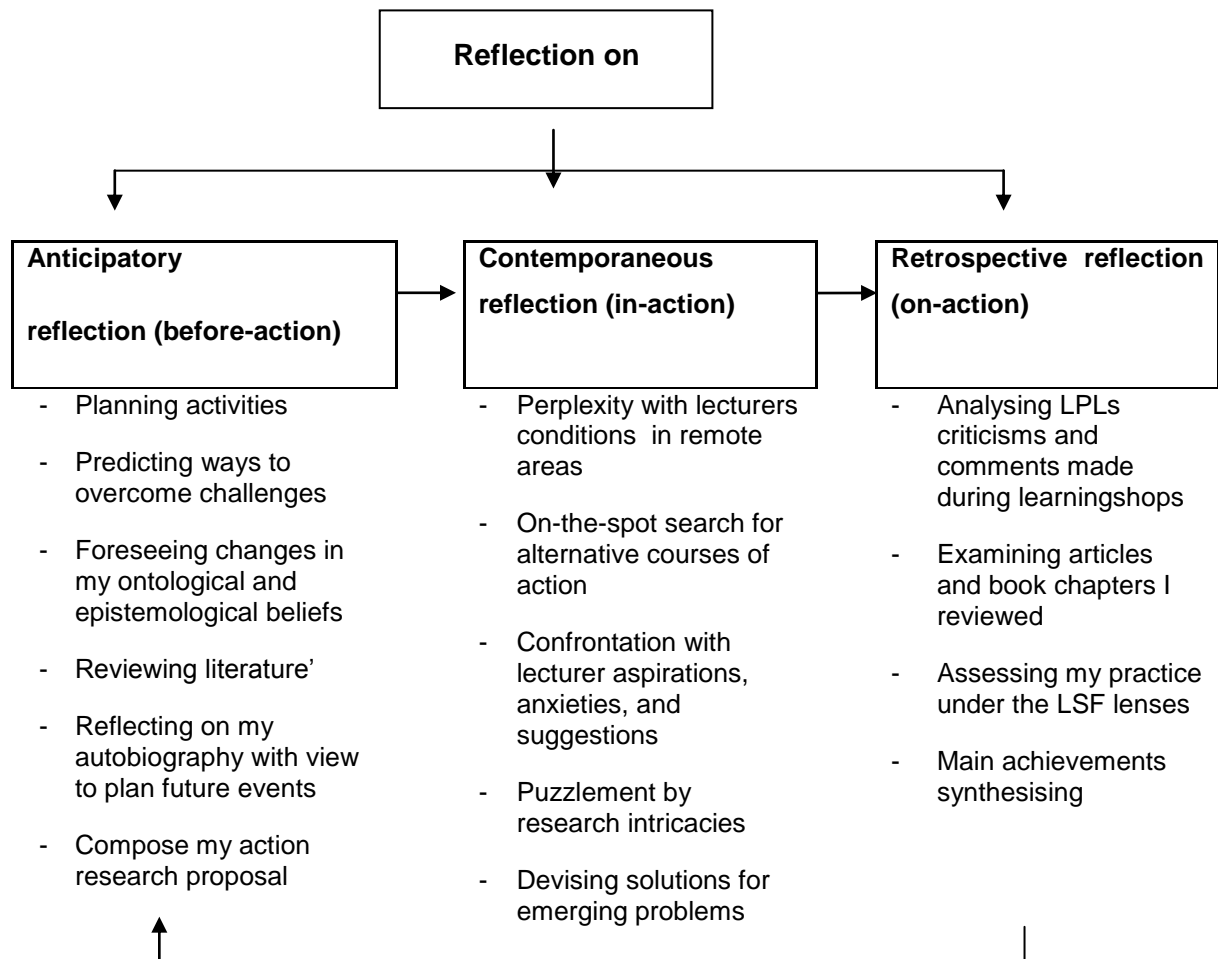


Figure 6.1: My model of meta-reflection

The main idea underlining this model of meta-reflection is that now I am engaged in a process of reflecting on the reflections I engaged in while I carried out my action research. Therefore I am reflection on my tri-partite reflection. The tri-partite model derives from the complementarities between Schön's (1983) and Van Manen's (1995) schemes of reflection. Thus Van Manen distinguished anticipatory reflection (on future occurrences); retrospective reflection (past experiences) and contemporaneous reflection (present). Within this view, "anticipatory reflection" appears to be a novelty, considering the scheme of Schön. Within it I assessed the conditions and developed the necessary strategies for successful action. It happened before the event occurred. This concept was additionally developed by other authors, such as Conway (2001), Eraut (as quoted by Husu et al., 2008), and Ong (2011). While the literature does not appear to problematise the reflection-in-action and reflection-on-action, for anticipatory reflection I observed the emergence of diverse designations, including reflection-before-action and reflection-for-action. To unify I employed "anticipatory", which emerges as overarching for what happens before (and for action).

While proceeding to meta-reflection on my action research process, I used these three forms of reflection as my timeframe benchmarks. Therefore I analysed, discussed, associated and made inferences from the acquisitions occurring within each of these three moments: anticipatory, contemporaneous and retrospective reflection.

### **6.2.1 Anticipatory reflection**

My anticipatory reflection entailed planning and predicting the activities I intended to carry out. It had the advantage of potentially reducing or preventing problems I would have encountered by defining alternative strategies to deal with unexpected situations (Ong, 2011). It was about my

*looking toward what was about to happen with knowledge of the past from the viewpoint of the point in time (Conway, 2001:90).*

As Ong (2011) suggests, in doing this, it was important to write down my plan or thoughts about the intervention I had planned to carry out. It appeared to be helpful in assisting and guiding my efforts towards implementation of the intervention and in finding out alternative courses of action if initial plans did not work. Somehow it appeared to assist the evaluation of the intervention. Therefore my anticipatory reflections focused on the whole process of

planning the baseline study (entailing semi-structured interviews and questionnaires), the action research and its entrenched processes of facilitating learningshops and mentoring sessions.

Prior to the commencement of that enriching venture which was the process of carrying out this study, my experience with research was with traditional research. While doing research for my Master's degree, I compared students in different courses to find the correlation between assessment demands and learning styles (deep disciplined, deep undisciplined, surface disciplined and surface undisciplined). In this my attachment to the positivistic paradigm becomes apparent. Firstly, I was working in a context of doing research on students, employing questionnaires and a learning style inventory. Therefore I was working under the assumption that authentic knowledge is founded on experience and only through observation and experiment can it be developed (Cohen et al., 2003). Aligned with this I was accustomed to seeing the lecturer (as researcher) and the student (as research participant) as separate and independent entities that could not interact. Being distant from students, especially during the research I would carry out on them, appeared to be necessary to avoid contaminating the findings. Therefore my epistemological view until then was that knowledge is accurate and certain, since it is derived from rigorous compliance with scientific methods. When I finished my Master's course, as a result of carrying out my research on students, I was still thinking of developing further studies in line with the traditional positivist paradigm. Doing research on students through learning style inventories and questionnaires comprised the coherent body of knowledge I had acquired until then. Mezirow (1997) labels this "frames of reference", which are the structures of assumptions by means of which I was making sense of my experiences of carrying out research.

The beginning of my doctoral studies implied the acquisition of new knowledge that led me to open up my frames of reference to scrutiny, see alternative ways of carrying out research, and therefore proceed differently (Cranton & King, 2003). Such transformation was additionally fuelled by the critical encounters I had with others. For instance, through my contact with my promoter and the attendance of research support sessions at the University of Pretoria, I became acquainted with other research paradigms, along with their assumptions. I had a series of action-orientated meetings with the promoter and problem-

focused research support sessions with fellow doctoral students. A part of this entailed contacting critical friends to get support, suggestions and critical feedback.

Talking to a critical friend about my ideas of carrying out research concerning student reflection (as I had done in my Master's), he suggested that it would be interesting to find out, before doing so with students, if lecturers themselves reflect on their practice. This idea was later crystallised and materialised after I had met Dr Du Toit who, apart from being passionate about holistic learning styles and action research, is very familiar with promoting reflection, since he is co-ordinator of a formal qualification in HE, namely the Postgraduate Certificate in Higher Education (PGCHE) offered at the University of Pretoria. The suggestion to carry out action research with fellow lecturers challenged me to assume an anti-positivist stance. Hence I was entering a broad approach of naturalistic inquiry where my understanding of the social world depended on the standpoint where I had to locate myself as element of the very reality I was investigating (Cohen et al., 2003). Therefore I had to see myself (and act) as an autonomous person and I started to see knowledge as a subjective undertaking.

I can use transformative learning theory to explain what happened to me here. This theory contends that when I am confronted with unexpected and discrepant situational conditions such as I had experienced, I face the need to revise such assumptions, mainly through critical reflection. Hence, in order to revise my assumptions I engaged in a critical reflection as informed by diverse experiential learning opportunities.

For the purpose of my reflection I employed three of the critical reflective lenses suggested by Brookfield (1995) namely theory, colleagues and autobiography. My anticipatory reflection was facilitated by my knowledge and experience, which were expanded by the fact that at the time I was well-acquainted with the literature, experienced in lecturing, professional learning and mentorship (Ong, 2011). Therefore, adopting A and B quadrant-directed activities, I first embarked on a long and thorough process of reviewing theoretical literature about the whole-brain model, LSF, action research, reflection and professional development. This process allowed me to gain an illuminating perspective on these themes and helped me interpret and understand my experience, naming and questioning it. Through the second critical reflective lens (Brookfield, 1995), I revisited my previous experiences



(autobiographies), trying to see my practice as “outside observer”, seeking significant features of that practice. For this purpose I reviewed certain written notes from my teaching practice, I considered some critical incidents and teaching material from my past experience (A quadrant). Such autobiographic reflection appeared to be significant in the transformation that occurred in my practice, since instead of looking at what students did, I started to look at my own practice as inbound action researcher. Such introspection allowed me to gain some insight into the whole-brain model, since, based on it, I was brainstorming and mapping what would be my brain profile. During the process I carried out C quadrant orientated activities by means of conversations I held with critical friends, colleagues and my promoter in order to expose and share my oral and written ideas and construct meaning. This process of communicative learning (Mezirow, 1997) allowed me to get their versions and critical feedback about the events I was going through.

The elements I mentioned in the previous paragraph allowed me to write my research proposal that I submitted and later defended at faculty level. The whole process of conceiving and planning the action research proposal consisted, among others, of the definition of research question(s), planning data collection and data analysis, conception of the learningshops, planning the mentoring sessions, identification and invitation of potential LPLs and negotiation with FACED on framing learningshops.

Moreover, in composing the action research proposal (this is whole-brain directed activity), I found in my experiences with workshops that I either organised or attended, provided me with insights for conceiving the learningshops I facilitated for my fellow lecturers. The experience of being mentored in the first year as assistant lecturer helped me in visualising how I could facilitate or animate the mentoring to the LPLs. As part of my preparatory efforts I attended additional workshops, such as one on “Use of Action Learning and Action Research for Poverty Reduction”, at the University of Stellenbosch, facilitated by Ortun Zuber-Skerritt, Margaret Fletcher and Ruth Albertyn, among others. This workshop was highly valuable since I could expose my research ideas and get feedback from colleagues from different countries. Besides, the workshop was practice-orientated and some of its activities were based on my and other participants’ needs and expectations. In terms of whole-brain learning I found the experience of attending the workshop as stimulation of all quadrants since there were opportunities to analyse facts (A quadrant), to plan course of

action (B quadrant), to interact with co-participants, sharing ideas (C quadrant), and to experiment and innovate in the pursuit of solutions for problems identified (D quadrant).

The literature review and my experience allowed me to compose the questionnaire on innovative practice. Through this instrument and semi-structured interviews I was going to collect the baseline data to inform the study about the practices of professional development, reflection and LSF in use in the context of HE in Mozambique. Informed by these practices, I brainstormed and mapped the instrument, and then attuned it to my aims on the basis of recurrently piloting it, either in the English version or in the Portuguese one. The exercise of piloting the questionnaire required me to develop or increase my personal skills. In this regard I recall that according to the HBDI Survey summary data the thinking style I most prefer is the B quadrant (with 83 points), followed by the C quadrant (77) and A quadrant (71). Accordingly I can be described as conservative, controlled, dominant and technical. Therefore, to develop my whole-brain, I needed to acquire skills related to interpersonal sphere, imaginative and holistic thinking. Through having to invite and persuade lecturers to fill in the questionnaire, while piloting and during the final data collection, I found myself developing such interpersonal skills, since practice is the prime mechanism one can use to develop a skill.

Contributing to increasing my interpersonal skills was the process of inviting lecturers to attend the learningshops. It is remarkable that during this planning process I was challenged and even frightened by the idea of successfully organising the learningshops for lecturers, due to the conception that, because of work pressure, lecturers have limited time to engage in professional development activities. Attendance was voluntary. Therefore, before identifying and inviting them, I raised a number of questions to myself, including whom I should invite. I had to decide whether to invite only assistant lecturers or representatives from all categories. What would I do in case of massive refusal? Talking to colleagues I got suggestions about how I could proceed. In some cases fellow lecturers supported me, convincing others to attend. My fears ended up being a catalyst for developing interpersonal skills such as persuasion, negotiation and others such as persistence. As a result of my efforts I managed to have the acceptance of 13 lecturers. This was a result of modelling (from previous experiences with experienced lecturers in collecting data) and counselling from colleagues on how to proceed to have lecturers attending. But then, still during the

preparatory phase, I asked myself how I could proceed to motivate them to complete the process and what I could do to meet their expectations; what I could do to show them the significance of such a transformative idea as LSF and action research. Here, communicative learning with my promoter (C quadrant), previous experiences of attending events (B quadrant) and the literature review (A quadrant) assisted me much. Therefore, from previous experiences and the literature, I gained insight into the organisation of short courses and learningshops within professional development interventions. These assisted me with tools and strategies to pursue the participants' expectations, to ground the activities on their experiences, showing their relevance for future practices.

The aspects I discussed in this section appeared to set the scene for me to proceed to the action itself, which consisted of administering semi-structured interviews, questionnaires on innovative practice, and facilitating the leaningshops complemented by mentoring, an effort that I monitored by means of the main action research.

### **6.2.2 Contemporaneous reflection (-in-action)**

The baseline study and the action research compose the heart of my contemporaneous reflection. Due to financial problems (A quadrant), associated with changes within the structure of the DERECCA sponsor, my data collection (B quadrant) ended up being longer than I had initially planned. Therefore, for nearly 18 months (with 6 months delay in between) I administered questionnaires (B quadrant) and conducted semi-structured interviews (C quadrant) to lecturers through institutions located in the southern, centre and northern parts of the country. Through this process I got to know new parts the country, such as Manica province. More importantly, it provided me with vicarious first-hand contact with fellow lecturers working in remote areas, where updated books are a true rarity. I could see that for some of them the lack of working conditions was not an obstacle to their growth, while others, possibly due to low coping resources, easily conformed. Having to collect as many questionnaires and interviews from only a few lecturers, I had to expand my skills in planning through devising timeframe matrices, establishing flexible timetables – including getting there during the night shift. Many times I had to adapt the interview format and vary the venue, including cafeteria, garden and hall, depending on the respondent's preference. I recall one respondent who asked me to meet him in the classroom 45 minutes before a learning opportunity he was going to facilitate. Around 15 minutes after we had started with

the interview students entered the classroom, chatting aloud which made it difficult to audio-record the interview. Within this process I found myself in an impasse, unsure whether I would carry on with the interview in a noisy environment or whether I would ask students to leave the room – but I was foreign there. So I decided to ask them to talk more softly while I took detailed written notes.

In general the outcomes of the process of carrying out interviews and administering the questionnaires included gaining inside and first-hand knowledge of lecturers' ideas, aspirations and anxieties. In this regard, in Chapter 5, I presented many respondents' statements (C quadrant) through which I learned that there is no conformity within the actual state of affairs. Through such statements I gained an understanding that there is room to explore lecturers' disposition, availability and initiatives to promote their professional development, to improve the students' learning opportunities and contribute to institutional and national growth.

For almost two years I facilitated my fellow lecturers' professional learning through learningshops and peer mentoring on the small-scale action research I asked them to carry out. Simultaneously I was carrying out my main action research process. This process took place by means of administering the HBDI, since, as in metalearning and self-regulated learning, LSF requires the facilitator of learning to be aware of his/her learning style preference. The other activities I carried out involved facilitating learningshops (C quadrant) as experimental professional development intervention and facilitating the mentoring sessions (C quadrant), both of which I explored as opportunities to collect data (especially about lecturers' reflection), through audio- and video-recording and photography. As I have recurrently said, mentoring consisted of assisting, supporting and challenging LPLs in implementing LSF within their practice, analysing it, and composing their small-scale action research.

In carrying out this action research, I implemented a synchronous model, according to which, while I was modelling the execution of action research in my efforts to promote lecturers' professional learning, the LPLs were doing their small-scale action research on facilitating learning through LSF within their learning opportunities (Du Toit, 2008). Linked to this process I identified at least two challenges: modelling and monitoring the process. Since

I had to play the role of implementing LSF, I was required to adopt a holistic practice of facilitating learningshops and mentoring. An intricacy I faced here was to step out of my comfort zone to promote activities linked to the D quadrant, my least preferred. The HBDI results opened my eyes to the gap between my preferred ways of learning and informed me of the need to develop more activities linked to the D quadrant. The HBDI results entailed a profile overlay, a data summary and an explanation of the respondent's profile. All of these elements provided knowledge about my strengths and weaknesses, such as key descriptors and preferred work elements. Reflecting on such information concerning the way in which I operated assisted me in constructing meaning about my ability to employ holistic strategies to facilitate LPLs' professional learning through learningshops and mentoring sessions. As I demonstrated in the Chapter 5, I managed to promote a holistic learning environment, although my self-assessment showed that more spontaneous and joyful approaches were necessary. In order to attain such achievement, I had to prepare myself through reading, observing others' practices and rehearsing.

Concerning monitoring the LPLs' practice, I recall that within this study my main focus was their professional learning as a result of my facilitating learningshops and mentoring practice. However, while reporting the case studies I continually made reference to students' learning, behaviour or satisfaction which was not my focus. I have done so as evidence of lecturers' learning and the implementation of LSF within their practices. This shows the challenge I was facing having to monitor my practice of facilitating lecturers' holistic professional learning, having to monitor LPLs' implementing LSF within their practices, and monitoring the process of their monitoring their own practices, reflecting and carrying out their small-scale action research. While mentoring the LPLs, pursuing one of my main intentions within this experience, I had to accommodate the four quadrant spectrum. Therefore, in connection with the A quadrant, I provided LPLs with quantified information through the HBDI handouts; I provided reading material, handed them a range of LSF references and accommodated other LSF principles such as logical rationales and proof of validity. Linked to the B quadrant, I divided the learningshop programme into sections. I provided opportunities for practical application. Other B quadrant principles I implemented included consistent approaches, allocating a reasonable amount of time for each activity, and the provision of examples. I supplied space for activities linked to the C quadrant through the inclusion of cooperative learning activities, mainly by means of discussion and

sharing/expressing ideas. My feeling is that I could have done more, especially in order to promote feeling-based aspects, emotional involvement and personal connection. Linked to the D quadrant I promoted the use of pictures through the exploration of visuals; I encouraged discovering and exploring through their promotion of LSF and conducting of own small-scale action research processes, and offered variety in format and opportunities to experiment. My analysis showed that I could have adopted a more satisfactory approach towards this quadrant (D quadrant) by stimulating more opportunities for fun and spontaneity, and deliberately asking them to use metaphors while examining their practice.

This whole process of facilitating mentoring sessions allowed me to develop my leadership facets, namely transformational and visionary leadership. Transformational leadership is about the promotion of vision, empowerment and change, and it is associated with establishing a clear vision for the institution, task-relevant expertise, widespread participation in decision-making (Hopkins, Ainscow & West as quoted by Bazo, 2011). Some of these principles of transformational leaderships lie at the heart of my action research, with which I was seeking to empower, emancipate and enlighten my fellow lecturers in the pursuit of transformation within their lecturing practices.

I recall that in the beginning the group was composed of 13 lecturers of different ages, years of experience, fields of specialisation and categories, and expectations. One of the challenges I faced was to behave as co-learner or “one of them” when they expected me to be a guidance-provider or ‘one in front of them’. This was even more challenging because (apart from my colleague who was video-recording), in fact, physically I was the only one standing, asking questions and for suggestions, and moderating the discussion. After some sessions the participants dropped-out and the group dynamics moved us into a team of 7 LPLs from multiple fields. Using the Brookfield (1995) lenses, namely review of literature, my experience and support, I managed to construct knowledge that contributed to my increased ability to become a true co-learner rather than teacher or professional development expert.

For this purpose I was further informed by Klasen and Clutterbuck (2002) who contend that mentoring goes beyond an older, more senior or more powerful lecturer providing guidance to a younger, less powerful one. My mentoring practice entailed creating an equal status and democratic space for mutual discussion and development of insight and understanding

(Jipson & Paley, 2000). Such effort resulted in all of us starting to see one another as true co-learners, moving from a mentor-centred environment to a mentee-centred one. This is a concept that I constructed based on my literature study and experience with a view to contributing to the current body of knowledge.

With regard to this achievement, I recall an observation made by one of the LPLs in the last learningshop, when we were assessing the experience:

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LPL3 *It might happen that at certain moment I will contact you in order to learn from you how you managed to unite this group; it might happen that at a certain moment I have a need to do the same thing.*

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The statement above captures the essence of what I was feeling before initiating the process. In fact, it appeared to be a daunting task to have a group of lecturers together in such a kind of venture. But, as one of the semi-structured interview respondents said, despite time constraints, lecturers are eager, motivated and willing to learn. Certainly, it is difficult to have them together, but once we present a sound rationale for them to attend, we link the learning experience with their practice, and we have them there. That is how I managed to get this group of LPLs together. However, saying this does not mean everything had gone smoothly. I faced many challenges and drawbacks associated with the instance of working with lecturers who had busy and over-loaded schedules. Therefore there were instances in which a LPL, due to understandable reasons, would be unable to video-record the learning opportunity, or to be present in the learningshop or mentoring session. When that happened it did not automatically mean that the next video-recording or mentoring session would take place the following day or week. Due to the busy schedules, it meant fighting to find another day, which in many instances took as long as a month.

An additional challenge was linked to doing the research as part-time student and full-time lecturer, supposed to be working on half-time basis in a changing context such as the Mozambican HE. To these intricacies I have to add the fact of being, in a collectivist culture, a son, youngest-brother, and over-all husband and father of two boys (11 and 6 years old now). In this respect, I remember a fellow PhD graduate, who acted as a critical friend at the very beginning of my doctoral studies, saying that my wife had to marry my PhD as well. And neither I nor my wife believes in polygamy! It required of me to expand my planning



skills as well as a sense of working discipline. Therefore I decided that the first three to four hours of the day I would spend working on my research in order to write that day's quota of two paragraphs, as said a University of Pretoria lecturer on the opening day. Apart from this I used to reserve one or two hours at the end of the day to my research – although by that time I was exhausted. The third measure was to spend Saturday mornings in my office doing research. As I said it required the development of highly disciplined behaviour but also resulted in the development of certain anti-social behaviours such as avoiding contact with people who potentially would extend invitations as well as learning to refuse proposals that could undermine my working schedule. Above all, I witnessed in me a true self-regulated learner. In this sense I could plan daily and weekly activities, trying to set realistic goals; then I managed to organise, self-monitor, and self-assess my efforts at various points during the process of acquisition (Zimmerman, 1990).

Access to information, such as reports, plans and other documents locally produced within the institutions was another challenge I faced. As it can be seen from the list of references or through browsing the Internet, the institutions in Mozambique hardly make available information of what they do, especially when it is apparent that it is for research purposes. This was an additional challenge that contributed to the development of interpersonal skills. Therefore I had to use informal channels and explore networks I had or created with staff at the universities and other relevant institutions.

### **6.2.3 Retrospective reflection (-on-action)**

After my professional learning had occurred through action research, I engaged in retrospective reflection, which entails examining and analysing what has happened during the action (Van Manen, 1995; Conway, 2001). This process implies the consolidation of previous acquisitions of knowledge and might lead to planning for improvement (a new anticipatory reflection moment). Accordingly, in the third phase of my meta-reflection, in a retrospective fashion, I took a journey to describe, analyse and discuss reflection that I had carried out. In previous sections I discussed some of the observations made by one LPL at the learningshop evaluation meeting. Such meetings, along with the data collection and analysis processes, provided me with significant information that triggered my reflection on that experimental professional development intervention.

These observations showed me that the effort to carry out this venture had been fruitful; at least in increasing the lecturers awareness for the possibilities to transform their lecturing practice into democratic and egalitarian ones. But then this question featured: *To what extent will they be willing to implement such transformation within their practice?* To some extent this question was answered through the cases studies, where I observed that LPLs increasingly implemented LSF within their practices and wholeheartedly engaged in critical reflection, while carrying out their small-scale action research. I observed further that some LPLs continued video-recording and photographing their learning opportunities beyond the experience we were jointly carrying out.

The LPLs' appreciation, coupled with the analysis of semi-structured interview data (as triangulated with a review of literature) gave me the chance to see the potentialities there are in the field to employ action research not only within lecturing practice, but also within community engagement activities. For instance, a respondent from the ACIPOL indicated that they do community policing, which entails providing training to some community members, who then are charged to keep the order in the community. Later they inquire from the community about the effectiveness of their efforts.

The LPLs' appreciation also showed the relevance of this professional development experience as ongoing practice at university level. They even suggested designations for such professional development intervention, including "flexible learning methodology", "reflective practices within lecturing practice", "learning styles and student performance", "lecturer capacity building in learning styles" and "contemporary practice of facilitating learning". They suggested such inclusion as a way to counteract the actual practices offered by the university that relies on traditional teacher-centred, theory-driven professional development. For them the experience had the additional value of putting together lecturers with different ranges, ages and experiences. The lesson I gained from this is the need to promote a learning-centred and co-mentoring environment, where we were all involved in one another's learning, fulfilling deeper and multiple demands for professional development (Mullen, 2000).

Concerning my learning during data collection, I detected that the discussion of and reflection on the respondents' answers, the state of affairs concerning research and

measure to increase for me was a huge chance to research and learn more about the debate surrounding the relationship between research and teaching as lecturer duties. Therefore I reviewed sections of articles and chapters in this regard. Significant for me was learning that although there is no consensus about whether research should be part of lecturers' duties or solely researchers' duties, it is appropriate to have lecturers doing research because it enhances the quality of student learning and teaching; it enables the institution to attract good lecturers and increase the institutional reputation (Scott, 2005).

Despite the shortcomings I mentioned as related to my practice of facilitating the lecturers' professional learning, such as a lack of spontaneity, playful and joyful approaches, I observed that I managed to promote an environment of freedom, equality, and collaboration within this professional development experiment.

Linked to my practice of facilitating LPLs' professional learning, my analysis shows that I managed to promote the freedom for lecturers to present and share their experiences and ideas, which were explored for further enhancement of our lecturing practice. This was apparent when one of the LPLs commented on the relevance of the course in giving opportunities to connect fellow experiences with one's own.

Wholeness in learning is the hallmark of LSF. The evidence for this is present in the variation of learning activities I carried out. I provided handouts, the HBDI profile overlay and data summary, which included quantified information about the profiles (A quadrant); I mentored the LPLs to implement LSF within their practices and action research (B quadrant); in the learningshops I included elements of cooperative learning, where discussion was the main way of engaging in collaborative learning, (C quadrant), and in the presentations done either by facilitators or by lecturers we explored visuals, PowerPoint slides, transparencies, video-recording, photographs and demonstration of the linkage between the four quadrants and colours (D quadrant).

Beyond all this my main achievement was to manage getting the lecturers to carry out their small-scale action research to monitor their efforts to implement LSF, to gather and discuss the evidence of their practice during the mentoring sessions. This achievement showed that I managed to frame this professional development experience in constructivist and situated

approaches. I accommodated the experience within evidence-based professional development, since I reckoned that all learning is only effective if linked to doing. Following practice theorists, I showed that professional learning is *ongoing social accomplishment knowledge ability, constituted and reconstituted in everyday practice* (Orlikowski, 2002: 252).

### 6.3 Conclusion

I would like to close this chapter and the whole study by making reference to Carr and Kemmis (1986), whose statement I find to be highly encompassing , when I consider this study and the whole context of professional development, both in the context of Mozambique and worldwide.

*Educational problem and issues may arise not only as individual matters, but as social matters requiring collective or common action if they are to be satisfactorily resolved. The outcome of [action] research, therefore, is not just the formulation of informed practical judgement, but theoretical accounts which provide a basis for analyzing systematically distorted decisions and practices, and suggesting the kinds of social and educational action by which these distortions may be removed. Futhermore, while these theories may be made available by the researcher, they are not offered as 'externally given' and 'scientifically verified' propositions. Rather, they are offered as interpretations which can only be validated in and by the self-understandings of practitioners under conditions of free and open dialogue. Hence, professional development, in this view, is a matter of teachers becoming more enlightened about the ways in which their own self-understandings may prevent them being properly aware of the social and political mechanisms which operate to distort or limit the proper conduct of education in society (Carr & Kemmis, 1986:31-32).*

## List of references

Adamu, A. Y, n.d. *Internationalization of higher education and the need for introducing credit accumulation and transfer system (CATS) in Africa: Potential opportunities and challenges*. Tampere, Finland: Tampere University, School of Education, Tampere, Finland. [online]. Available url: <http://www.nai.uu.se/ecas-4/panels/1-20/panel-6/Abebaw-Adamu-Full-paper.pdf>. Accessed 06 December 2012.

Argyris, C. & Schön, D. 1978. *Organisational learning: A theory of action perspective*. Massachusetts: Addison-Wesley Publishing Company.

Armstrong, T. 1994. *Multiple intelligences in the classroom*. Alexandria: Association for Supervision and Curriculum Development.

Ash, S.L. & Clayton, P. H. 2009. Generating, deepening, and documenting learning: The power of critical reflection in applied learning. *Journal of Applied Learning in Higher Education*, 1: 25 – 48.

Atkins, S. & Murphy, K. 1993. Reflection: A review of the literature, *Journal of Advanced Nursing*, 18: 1188-1192.

Babbie, E. & Mouton, J. 2001. *The practice of social research*. Cape Town: Oxford University Press.

Bailey, T., Cloete, N & Pillay, P. 2011. *Case study: Mozambique and Eduardo Mondlane University*. Universities and Economic Development in Africa. Wynberg: CHET.

Ballantyne, R., Hughes, K. & Mylonas, A. 2002. Developing procedures for implementing peer assessment in large classes using action research process. *Assessment and Evaluation in Higher Education*, 27 (5): 427-438.

Barnett, R. 1992. *Improving higher education: Total quality care*. Buckingham: Society for Research into Higher Education & Open University Press.

Barrington, E. 2004. Teaching to student diversity in higher education: How multiple intelligence theory can help. *Teaching in Higher Education*, 9 (4): 421-434.

Bawaneh, A.K.A., Abdullah, A.G.K., Saleh, S. & Yin, K.Y. 2011. Jordanian students' thinking styles based on Herrmann whole brain model. *International Journal of Humanities and Social Science*, 1 (9): 89-97.

Bazo, M. 2011. *Transformational leadership in Mozambican primary schools*. PHD Thesis. Enschede: University of Twente.

Beaty, L. & Cousin, G. 2003. *An action-research approach to strategic development: A case study*. In Eggins, H. & Macdonald, R. (Eds). *The scholarship of academic development*. (pp. 141-151). Maidenhead: Society for Research into Higher Education & Open University Press.

Beaty, L. 1998. The professional development of teachers in higher education: Structures, methods and responsibilities. *Journal in Education and Training International*, 35 (2): 99-108.

Bergom, I., Wright, M. C., & Brooks, M. 2011. Promoting College Student development through collaborative learning. *About campus*. 15 (6):19-25

Biehler, R.F. & Snowman, J. 1997. *Psychology applied to teaching*. (8th edition). Boston: Houghton Mifflin Company.

Biesta, G. 2010. *Pragmatism and the philosophical foundations of mixed method research*. In: Tashakkori, A. & Teddlie, C. (Eds). *SAGE handbook of mixed methods in social and behavioural sciences*. (2nd edition). (pp. 95-117). Thousand Oaks: SAGE Publications.

Biesta, G. J. J. 2010. Why 'what works' still won't work: From evidence-based education to value-based education. *Studies in Philosophy and Education*, 29(5):491-503.

Bishop, R. 2005. *Freeing Ourselves from neocolonial domination in research: A kaupapa Maori approach to creating research*. In: Denzin, N.K. & Lincoln, Y.S. (Eds) . *The sage handbook of qualitative research*. (3rd edition). (pp. 191-215). Thousand Oaks: SAGE Publications.

Blackwell, R. & Blackmore, P. 2003. *Rethinking strategic staff development*. In: Blackwell, R. & Blackmore, P. (Eds). *Towards strategic staff development in higher education*. (pp. 3-15). Maidenhead: Society for Research into Higher Education & Open University Press.

Blanton, M.L., Stylianou, D.A. 2009. Interpreting a community of practice perspective in discipline specific professional development in higher education. *Innovative Higher Education*, 34: 79-92.

Boekaerts, M. & Corno, L. 2005. Self-regulation in the classroom: A perspective on assessment and intervention. *Applied Psychology: An International Review*, 54 (2): 199-231.  
Boekaerts, M. 1999. Self-regulated learning: Where we are today. *International Journal of Educational Research*, 31 (6): 445-457.

Boekaerts, M. 2002. Bringing about change in the classroom: Strengths and weaknesses of the self-regulated learning approach. *Learning and Instruction*, 12: 589-604.

Boud, D., Keogh, R. & Walker, D. 1985. *Reflection: Turning experience into learning*. London: Kogan Page.

Boud, D., Keogh, R. & Walker, D. 1996. *Promoting reflection in learning: A model*. In: Edwards, R., Hanson, A. & Raggatt, P. (Eds). *Boundaries of adult learning*. (pp. 32-56). New York: Routledge.

Brew, A. 2003. *The future of research and scholarship in academic development*. In Eggins, H. & Macdonald, R. (Eds). *The scholarship of academic development*. (pp. 165-181). Maidenhead: Society for Research into Higher Education & Open University Press.



Brew, A. 2007. Evaluating Academic Development in a Time of Perplexity. *International Journal for Academic Development*, 12 (2): 69–72.

Brew, A. 2010. Transforming academic practice through scholarship. *International Journal for Academic Development*, 15 (2): 105-116.

Brito, L.; Brouwer, R. & Menezes, A. 2008. *Mozambique*. in: Teferra, D & Knight, J. (Eds). *Higher Education in Africa: The International Dimension*. Massachusetts/Accra: Center for International Higher Education/Association of African Universities.

Brockbank, A. & McGill, I. 1998. *Facilitating Reflective learning In Higher Education*. Buckingham: Society for Research into Higher Education & Open University Press.

Brookfield, S. 1985. *Self-directed learning: A critical review of research*. In: Brookfield, S. (Ed). *Self-directed learning: From theory to practice*. (pp. 5-16). San Francisco: Jossey-Bass.

Brookfield, S. 1990. *Using critical incidents to explore learner's assumptions*. In: Mezirow, J. (Ed). *Fostering critical reflection in adulthood*. (pp. 177-193). San Francisco: Jossey-Bass.

Brookfield, S. 2009. The concept of critical reflection: promises and contradictions. *European Journal of Social Work*, 12 (3): 293-304.

Brookfield, S.D. 1995. *Becoming a critically reflective teacher*. San Francisco: Jossey-Bass.  
Brown, J.S. & Duguid, P. 1991. Organisational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organisation Science*, 2 (1): 40-57.

Brown, J.S. & Duguid, P. 1998. Organizing knowledge. *California Management Review*, 40 (30): 90-111.

Brown, J.S., Collins, A. & Duguid, P. 1989. Situated cognition and the culture of learning, *Educational Researcher*, 18 (1): 32-42.

Brown, M. & Macatangay, A. 2002. The Impact of Action Research for Professional Development: case studies in two Manchester schools. *Westminster Studies in Education*, 25 (1): 35-45.

Bruffee, K. A. 1999. *Collaborative Learning: Higher education, interdependence, and the authority of knowledge*. (2<sup>nd</sup> ed). Baltimore: The John Hopkins University Press.

Budge, K. & Clarke, A. 2012. Academic development is a creative act. *International Journal for Academic Development*, 17 (1): 59-70.

Bunderson, C.V. 1985. *The validity of the Herrmann Brain Dominance Instrument®*. [Online] Available url: [http://www.hbdi.com/uploads/100021\\_resources/100331.pdf](http://www.hbdi.com/uploads/100021_resources/100331.pdf) Accessed 25 July, 2011.

Buskist, W., Carlson, J.F., Christopher, A.N., Preito, L. & Smith, R.A. 2008. Models and exemplars of scholarship in the teaching of psychology. *Teaching of Psychology*, 35 (4): 267-277.

Butcher, J. & Di Stoncel. 2012. The impact of a Postgraduate Certificate in Teaching in Higher Education on university lecturers appointed for their professional expertise at a teaching-led university: 'It's made me braver'. *International Journal for Academic Development*, 17 (2): 149–162.

Byrne, J., Brown, H. & Challen, D. 2010. Peer development as an alternative to peer observation: a tool to enhance professional development. *International Journal for Academic Development*, 15 (3): 215-228.

Caine, R.N. & Caine, G. 1991. *Making connections: Teaching and the brain*. Virginia: Association for Supervision and Curriculum Development.

Calderhead, J. & Gates, P. 1993. *Conceptualizing reflection in teacher education*. London: Falmer Press.

Campos, B.P. 2011. *Avaliação do plano estratégico para a educação e cultura 2006-2010/11: Ensino superior. [Evaluation of the strategic plan for education and culture 2006-2010/11: Higher education]*. Volume. Maputo: Ministério da Educação.

Carew, A. L., Lefoe, G., Bell, M. & Armour, L. 2008. Elastic Practice in academic developers. *International Journal for Academic Development*, 13 (1): 51-66.

Carr, W. & Kemmis, S. 1986. *Becoming critical*. London: Falmer Press.

Chadwick, P. 1995. Academic quality in TQM: Issues in teaching and learning. *Quality Assurance Education*, 3 (2): 19-23.

Chilundo, A. 2003. *African higher education: An international reference handbook*. [online]. Available url: [http://www.bc.edu/bc\\_org/avp/soe/cihe/inhea/profiles/Mozambique.htm](http://www.bc.edu/bc_org/avp/soe/cihe/inhea/profiles/Mozambique.htm). Accessed 05 April, 2007.

Chilundo, A. 2006. *Capacity building in higher education in Mozambique and the role played by cooperating foreign agencies: The case of the World Bank*. UNESCO. Series Paper no. 12. [online]. Available url: <http://unesdoc.unesco.org/images/0014/001478/147819e.pdf>. Accessed 05 April, 2007.

Clarke, B., James, C. & Kelly, J. 1996. Reflective practice: Reviewing the issues and refocusing the debate. *International Journal of Nursing Studies*, 33 (2): 171-80.

Clegg, S., Tan, J. & Saeidi, S. 2002. Reflecting or acting? Reflective practice and continuing professional development in higher education. *Reflective Practice*, 3 (1): 131-146.

Close, H. 2007. The use of photography as a qualitative research tool. *Nurse Researcher*, 15 (1): 27-36.

Cobb, P. 2002. Theories of knowledge and instructional design: A response to Colliver. *Teaching and Learning in Medicine: an International Journal*. 14 (1): 52-55.

Coffey, A. & Atkinson, P. 1996. *Making sense of qualitative data: Complementary research strategies*. Thousand Oaks: SAGE publications.

Coffield, F., Moseley, D., Hall, E. & Ecclestone, K. 2004. *Learning styles and pedagogy in post-16 learning: A systematic and critical review*. London: Learning & Skills Research Centre.

Cohen, L., Manion, L. & Morrison, K. 2003. *Research methods in education*. London: Routledge Falmer.

Connolly, B. 2008. *Adult learning in groups*. New York: Open University Press.

Conway, P.F. 2001. Anticipatory reflection while learning to teach: From a temporally truncated to a temporally distributed model of reflection in teacher education. *Teaching and Teacher Education*, 17 (2): 89-106.

Corsini, R. 2002. *Dictionary of psychology*. London: Brunner-Routledge.

Cory Jr, G.A. 2000. From McLean's triune brain concept to the conflict systems neurobehavioural model: The subjective basis for moral and spiritual consciousness. *Zygon*, 35 (2): 385-414.

Cranton, P. & King, K.P. 2003. Transformative learning as a professional development goal. *New Directions for Adult and Continuing Education*, 98 (summer): 31-37.

Cranton, P. 2002. Teaching for transformation. *New Directions for Adult and Continuing Education*, 98 (spring): 63-71.

Cranton, P. 2010. *Adult learning and Instruction: Transformative learning perspective*. In: Peterson, P., Baker, E. & McGaw, B. (Eds). *International Encyclopaedia of Education*. (3<sup>rd</sup> edition). (Vol. I, pp. 18-24). London: Academic Press.

Creswell, J.W. 1994. *Research design: Qualitative and quantitative approaches*. Thousand Oaks: SAGE Publications.

Creswell, J.W., Clark, V.L.P., Gutmann, M.L. & Hanson, W.E. 2003. *Advanced mixed methods research designs*. In: Tashakkori, A. & Teddlie, C. (Eds). *Handbook of mixed methods in social and behavioural research*. (pp. 209–240). Thousand Oaks: SAGE Publications.

Crow, J. & Smith, L. 2005. Co-teaching in higher education: Reflective conversations on shared experience as continued professional development for lecturers and health and social care students. *Reflective Practice*, 6 (4): 491-506.

Curry, L. 1990. A critique of the research on learning styles. *Educational leadership*, 48: 50-56.

Daley, B.J. 2000. Learning in professional practice. *New Directions for Adult and Continuing Education*, 86: 33-42.

Daley, B.J. 2001. Learning and professional practice: A study of four professions. *Adult Education Quarterly*, 52 (1): 39-54.

Daniels, H., Creese, A., Hey, V, Leonard, D. & Smith, M. 2001. Gender and learning: Equity, equality and pedagogy. *Support for Learning*, 16 (3): 112-116 .

Dart, B. 1997. *Adult learner's metacognitive behaviour in higher education*. In: Sutherland, P. (Ed). *Adult Learning: A reader*. (pp. 30-43). London: Kogan Page.

Day, C. 1985. Professional learning and researcher intervention: An action research perspective. *British Educational Research Journal*, 11 (2): 133-151.

Day, C. 1993. Reflection: a necessary but not sufficient condition for professional development. *British Educational Research Journal*, 19 (1): 83-93.

De Boer, A. L., Du Toit, P.H., Bothma, T. & Scheepers, D. 2012. Constructing a comprehensive learning style flexibility model for the innovation of an information literacy module. *Libri* (62): 185–196.

De Boer, A.L & van den Berg, D. 2001. The value of the Herrmann brain dominance instrument (HBDI) in facilitating effective teaching and learning of criminology. *Acta Criminologica*, 14 (1):119-129

De Boer. A.L, Steyn, T. & Du Toit, P.H. 2001. A whole-brain approach to teaching and learning in higher education. *South African Journal of Higher Education*, 15 (3): 185-193.

De Boer. A.L. & Steyn, T. 1999. Thinking style preferences of underprepared first year students in the natural sciences. *South African Journal of Ethnology*, 22 (3): 97-102.

Dewey, J. 1910. *How we think*. London: D.C. Heath & Company.

Direcção de Coordenação do Ensino Superior, 2006. Operational Plan 2006-2010 for the implementation of the second phase of the National Strategic Plan for Higher Education in Mozambique. Maputo: Ministerio da Educação e Cultura.

Directorate for the Coordination of Higher Education. 2006. *Operational plan 2006-2010 for the implementation of the second phase of the national strategic plan for higher education in Mozambique*. Maputo: Ministério de Educação e Cultura.

Donaldsen, P.J. 2001. Using photographs to strengthen family planning research. *Family Planning Perspectives*, 33 (4):176-179.

Downs, R.E. 1961. On the analysis of ritual. *Southwestern Journal of Anthropology*, 17 (1): 75-80.

Driscoll, M.P. 2000. *Psychology of learning for instruction*. (2<sup>nd</sup> edition). Boston: Allyn & Bacon.

Druger, M. 2005. *Advice for teaching at the university level*. In: Tice, S.L., Jackson, N., Lambert, L.M & Englot, P. (Eds). *University teaching: A reference guide for graduate students and faculty*. (2<sup>nd</sup> edition). (pp. 1-7). New York: Syracuse University Press.

Du Toit, P.H. 2006. *Facilitating adult learning: Reader*. Pretoria: University of Pretoria.

Du Toit, P.H. 2008. Matching learning style flexibility and action research for academic staff development. Paper presented at AERA Conference, 24-28 March, New York.

Du Toit, P.H. 2010. *An action research process to monitoring one's professional development as lecturer*. Pretoria: Foundation for Professional Development.

Du Toit, P.H., De Boer, A. & Bothma, T. 2010. *Multidisciplinary collaboration: A necessity for curriculum innovation*. Paper presented at the world library and information congress. 10-15 August, Gothenburg, Sweden.

Du Toit, P.H., De Boer, A. & Steyn, T. 2004. *Learning style flexibility*. In: Du Toit, P.H. (compiler) *Facilitating adult learning: Reader*. Pretoria: University of Pretoria.

Duffy, T. M. & Jonassen, D. H. 1992. *Constructivism: New implications for instructional technology*. In: Duffy, T. M. & Jonassen, D. H. (Eds). *Constructivism and the technology of instruction: a conversation*. (pp. 1-16). New Jersey: Lawrence Erlbaum Associates.

Dymond, S.K., Renzaglia, A., Rosenstein, A., Chun, E.J., Banks, R.A., Niswander, V. & Gilson, C. L. 2006. Using a participatory action research approach to create a universally designed inclusive high school science course: A case study. *Research and Practice for Persons with Severe Disabilities*, 31 (4): 293-308.

Ebest, S.B. 2001. *Action research on action research; Emancipatory research or abuse of power?* In: Zeni, J. (Ed). *Ethical issues in practitioner research*. (pp. 72-82). New York: Teachers College Press.

Eraut, M. 1994. *Developing professional knowledge and competence*. London: The Falmer Press.



Evans, L. 2002. What is Teacher Development?, *Oxford Review of Education*, 28 (1):123-137.

Fazio, X. 2009. Teacher development using group discussion and reflection. *Reflective Practice*, 10 (4): 529-541.

Ferman, T. 2002. Academic professional development practice: What lecturers find valuable. *The International Journal for Academic Development*, 7 (2): 146-158.

Fernandes, A.M. & Mattoo, A. 2009. *Professional services and development: A study of Mozambique*. Washington: The World Bank.

Fook, J., White, S. & Garder, F. 2006. *Critical reflection: a review of contemporary literature and understandings*. In White, S., Fook, J. & Garder, F. (Eds). *Critical reflection in healthy and social care*. (pp. 3 – 20). Maidenhead: Open University Press.

Fosnot, C. T. 1996. *Constructivism: A psychological theory of learning*. In Fosnot, C. T. (Ed). *Constructivism: Theory, perspectives and practice*. (pp. 8 – 33). New York: Teachers College press.

Franco, J. Service learning: celebration concept. [online] Available url: <http://learningtogive.org/papers/paper240html> Accessed 7 March, 2012.

Frick, L. & Kapp, C. 2009. *The professional development of academics: In pursuit of scholarship*. In: Bitzer, E. (Ed). *Higher education in South Africa: A scholarly looking behind the sciences*. (pp. 255-282). Stellenbosch: Sun Press.

Fry, P. & Utui, R. 1999. *Promoting access, quality and capacity-building in African higher education: The strategic planning experience at the Eduardo Mondlane University*. Washington: The World Bank.

Fuchs, R. F. 1962. Academic freedom and the first amendment: the right to learn. *Vital Speeches of the Day*, 28 (13): 411-414.

Gardner, H. 2003. Multiple intelligences after twenty years. Paper presented at the American Educational Research Association, Chicago, Illinois, April 21, 2003.

Genç, S.Z. 2008. An evaluation of teachers' views of primary school principals' practice of democratic values. *Social Behavior & Personality: An International Journal*, 36(4): 483-492.

Ghaye, T. & Lillyman, S. 2010. *Reflection: Principles and practice for healthcare professionals*. London: Quay.

Ghesquière, P., Maes, B. & Vandenberghe, R. 2004. The usefulness of qualitative case studies in research on special needs education. *International Journal of Disability, Development and Education*, 51 (2): 171 -184.

Glazer, C., Abbott, L. & Harris, J. 2004. A teacher-developed process for collaborative professional reflection. *Reflective Practice*, 5 (1): 33-46.

Glen, S., Clark, A. & Nicol, M. 1995. Reflecting on reflection: A personal encounter. *Nurse Education Today*, 15 (1): 61-68.

Glennon, F. 2008. Promoting freedom, responsibility, and learning in the classroom: The learning covenant a decade later. *Teaching Theology and Religion*, 11 (1): 32-41.

Goleman, D. 1996. *Emotional intelligence: Why it can matter more than IQ*. London: Bloomsbury Publisher.

Goodnough, K. 2001. Multiple Intelligences Theory: A Framework for Personalizing Science Curricula. *School Science and Mathematics*, 101 (4): 180-193.

Gosling, D. 2003. *Philosophical approaches to academic development*. In Eggins, H. & Macdonald, R. (Eds). *The scholarship of academic development*. (pp. 70-79). Maidenhead: Society for Research into Higher Education & Open University Press.

Gosling, D. 2009. Educational development in the UK: a complex and contradictory reality, *International Journal for Academic Development*, 14 (1): 5-18.

Governo de Moçambique. 2005. *Proposta de Programa do Governo para 2005-2009*. [Government programme proposal for 2005-2009]. Maputo: Imprensa Nacional.

Gravett, S. 2005. *Adult learning: Designing and implementing learning events*. (2<sup>nd</sup> edition). Pretoria: Van Schaik.

Grimmett, P.P., MacKinnon, A.M., Erickson, G.L., & Riecken, T.J. 1990. *Reflective practice in teacher education*. In: Clift, R.T., Houston, W.R. & Pugach, M.C. (Eds). *Encouraging reflective practice in education*. (pp. 20-38). New York: Teachers College Press.

Groccia, J. 2010. *Why faculty development? Why now?* In: Saroyan, A.L. & Frenay, M. (Eds). *Building teaching capacities in higher education: A comprehensive international model*. (pp. 1-20). Virginia: Stylus.

Guba, E.G. & Lincoln, Y.S. 2005. *Paradigmatic controversies, contradictions, and emerging confluences*. In: Denzin, N.K. & Lincoln, Y.S. (Eds) . *The sage handbook of qualitative research*. (3<sup>rd</sup> edition). (pp. 191-215). Thousand Oaks: SAGE Publications.

Hadfield, J. 2006. Teacher education and trainee learning style. *Regional Language Center Journal*, 37(3): 367-386.

Hargreaves, A. & Fullan, M. 2000. Mentoring in the new millennium. *Theory into Practice*, 39 (1): 50-56.

Harley, S. 1993. Situated learning and classroom instruction. *Educational Technology*, 33 (3): 46-51.

Harper, D. 2005. *What's new visually?* In: Denzin, N.K. & Lincoln, Y.S. (Eds) . *The sage handbook of qualitative research*. (3<sup>rd</sup> edition). (pp. 747-762). Thousand Oaks: SAGE Publications.

Harper, S., Gray, S., North, S., Brown, S. & Ashton, K. 2010. *Getting the most from staff: Using talents to the full*. In: Denton, S. & Brown, S. (Eds). *A practical guide to university and college management – Beyond bureaucracy*. (pp. 225-246). New York: Routledge.

Harrington, H.L., Quin-Leering, K. & Hodson, L. 1996. Written case analyses and critical reflection. *Teaching and Teacher Education*, 12 (1): 25-37.

Harrison, J., Lawson, T. & Wortley, A. 2005. Facilitating the professional learning of new teachers through critical reflection on practice during mentoring meetings. *European Journal of Teacher Education*, 28 (3): 267-292.

Healey, M. & Jenkins, A. 2000. Kolb's experiential learning theory and its application in higher education. *Journal of Geography*, 99 (5): 185-195.

Heath, C. Luff, P. & Svensson, M.S. 2007. Video and qualitative research: Analysing medical practice and interaction. *Medical Education*, 41: 109-116.

Herrmann, N. 1995. *The creative brain*. (5<sup>th</sup> edition). North Carolina: The Ned Herrmann Group.

Herrmann, N. 1996. *The whole-brain business book*. New York: McGraw-Hill.

Hicks, O. 1999. Integration of central and departmental development – reflections from Australian universities. *International Journal for Academic Development*. 4 (1): 43–51.

Hitchcock, G. & Hughes, D. 1995. *Research and the teacher: A qualitative introduction to school-based research*. (2<sup>nd</sup> edition). London: Routledge.

Hockley, J. & Froggatt, K. 2006. The development of palliative care knowledge in care homes for older people: The place of action research. *Palliative Medicine*, 20 (8): 835-843.

Hopper, B. & Hurry, P. 2000. Learning the MI way: The effects on students' learning of using the theory of multiple intelligences. *Pastoral Care*, 18 (4): 26-32.

Houston, W.R. & Clift, R.T. 1990. *The potential for research contributions to reflective practice*. In: Clift, R.T., Houston, W.R. & Pugach, M.C. (Eds). *Encouraging reflective practice in education*. (pp. 208-222). New York: Teachers College Press.

Hubball, H. & Poole, G. 2003. A learning-centred faculty certificate programme on university teaching. *International Journal for Academic Development*, 8(1/2): 11-24.

Husu, J., Toom, A. & Patrikainen, S. 2008. Guided reflection as a means to demonstrate and develop student teachers' reflective competencies. *Reflective Practice*, 9 (1): 37-51.

Iaccino, J. F. 1993. *Left Brain – Right Brain Differences: Inquiries, evidence and new approaches*. New Jersey: Lawrence Erlbaum Associates.

Instituto Nacional de Estatística. 2008. *Resultados preliminares do senso de 2007*. [Preliminary Results of the census 2007]. Maputo: Ministério do Plano.

Jackson, N. 2004. Developing the concept of metalearning. *Innovations in Education and Teaching International*, 41 (4): 391-403.

Jasper, M. 2006. *Professional development, reflection and decision-making*. Hong-Kong: Blackwell Publishing.

Jipson, J. & Paley, N. 2000. Because no one gets there alone: Collaboration as co-mentoring. *Theory into Practice*, 39 (1): 36-42.

Johnson, B. & Turner, L.A. 2003. *Data collection strategies in mixed methods research*. In: Tashakkori, A. & Teddlie, C. (Eds). *Handbook of mixed methods in social and behavioural research*. (pp. 297-320). Thousand Oaks: SAGE Publications.

Jones, A. 2010. Examining the public face of academic development. *International Journal for Academic Development*, 15(3): 241-251.

Kearney, K. S. & Hyle, A. E. 2004. Drawing out emotions: the use of participant-produced drawings in qualitative inquiry. *Qualitative Research*, 4 (3): 361- 382.

Kelchtermans, G. 2005. Teachers' emotions in educational reforms: Self-understanding, vulnerable commitment and micropolitical literacy. *Teaching and Teacher Education*, 21 (8): 995–1006.

Kember, D. 2000. *Action learning and action research: Improving the Quality of Teaching and Learning*. London: Kogan Page.

Kemmis, S. & McTaggart, R. 2005. *Participatory action research*. In: Denzin, N.K. & Lincoln, Y.S. (Eds). *The Sage handbook of qualitative research*. (3<sup>rd</sup> edition). (pp. 559-603). Thousand Oaks: SAGE Publications.

Kemmis, S. 1985. *Action research and the politics of reflection*. In: Boud, D., Keogh, R. & Walker, D. (Eds). *Reflection: Turning experience into learning*. London: Kogan Page.

Kemper, E.A., Stringfield, S. & Teddlie, C. 2003. *Mixed methods sampling strategies in social science research*. In: Tashakkori, A. & Teddlie, C. (Eds). *Handbook of mixed methods in social and behavioural research*. (pp. 273-296). Thousand Oaks: SAGE Publications.

Kezar, A. 2001. Theory of Multiple Intelligences: Implications for Higher Education. *Innovative Higher Education*, 26 (2): 141-154.

Kezar, A. 2005. What campuses need to know about organisational learning and the learning organisation. *New Directions for Higher Education*, 131: 7-22.

Kincheloe, J. L. 2004. *Twenty-first-century questions about multiple intelligences*. In Kincheloe, J. L. (Ed). *Multiple intelligences reconsidered*. (pp.3 - 28). New York: Peter Lang.

Kitchener, K.S. & King, P.M. 1994. *Developing reflective judgement: Understanding and promoting intellectual growth and critical thinking in adolescents and adults*. California: Jossey-Bass.

Klasen, N. & Clutterbuck, D. 2002. *Implementing mentoring schemes*. Oxford: Butterworth-Heinemann.

Knight, J. 2008. *The internationalization of higher education: Complexities and realities*. In: Teferra, D and Knight, J (eds). *Higher Education in Africa: The International Dimension*. Massachusetts/Accra: Center for International Higher Education/Association of African Universities.

Knight, P. Tait, J. & Yorke, M. 2006. The professional learning of teachers in higher education. *Studies in Higher Education*, 31 (3): 319-339.

Knowles, J.G. 1993. *Life-History accounts as mirrors: A practical avenue for the conceptualization of reflection in teacher education*. In: Calderhead, J. & Gates, P. (Eds). *Conceptualizing reflection in teacher education*. (pp. 70-92). London: Falmer Press.

Knowles, M. 1993. Andragogy: An emerging technology for adult learning. In: Edwards, R., Hanson, A. & Raggatt, P. (Eds). *Boundaries of adult learning*. (pp. 82-98). New York: Routledge.

Knowles, M. 1996. *Andragogy: an emerging technology for adult learning*. In Edwards, R., Hanson, A., & Raggart, P. (Eds). *Boundaries of Adult Learning*. (pp. 82-98). London and New York.

Kolb, D. 1984. *Experiential learning: Experience as the source of learning and development*. New Jersey: Prentice-Hall.

Korthagen, F.A.J. 1993. Two modes of reflection. *Teacher and Teacher Education*, 9 (3): 317-326.

Koster, B. & Dengerink, J.J. 2008. Professional standards for teacher educators: how to deal with complexity, ownership and function. *European Journal of Teacher Education*. 31 (2): 135-149.



Kozma, R.B., Belle, L.W. & Williams, G.W. 1978. *Instructional techniques in higher education*. New Jersey: Education Technology Publications.

Kraft, N.P. 2002. Teacher research as a way to engage in critical reflection: A case study, reflective practice. *International and Multidisciplinary Perspectives*, 3 (2): 175-189.

Kvale, S. 1996. *Interviews: An introduction to qualitative research interviewing*. London: SAGE Publications.

LaBoskey, V.K. 1993. A conceptual framework for reflection in preservice teacher education. In: Calderhead, J. & Gates, P. (Eds). *Conceptualizing reflection in teacher education* (pp. 23-38). London: Falmer Press.

Land, R. 2003. *Orientations to academic development*. In Eggins, H. & Macdonald, R. (Eds). *The scholarship of academic development*. (pp. 34-46). Maidenhead: Society for Research into Higher Education & Open University Press.

Langa, P. 2006. *The constitution of the field of higher education institutions in Mozambique*. Unpublished Masters Thesis. Cape Town: University of Cape Town.

Larochelle, M. & Bednarz, N. 1998. *Constructivism and education: Beyond epistemological correctness*. In: Larochelle, M., Bednarz, N. & Garrison, J. (Eds). *Constructivism and education*. (pp. 3-20). Cambridge: Cambridge University Press.

Lather, P. 2006. Paradigm proliferation as a good thing to think with: Teaching research in education as a wild profusion. *International Journal of Qualitative Studies in Education*, 19 (1): 35-57.

Laurillard, D. 1993. *Rethinking University Teaching: A framework for the effective use of educational technology*. New York: Routledge.

Lave, J. & Wenger, E. 1991. *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press.

Le Cornu, R. 2005. Peer mentoring: Engaging pre-service teachers in mentoring one another. *Mentoring and Tutoring*, 13 (3): 355-36.

Leitch, R. & Day, C. 2001. Reflective processes in action: Mapping personal and professional contexts for learning and change. *Journal of In-Service Education*, 27 (2): 237-260.

Lincoln, Y.S. 2005. *Engaging sympathies: Relationships between action research and social constructivism*. In: Reason, P. & Brandby, H. (Eds). *Handbook of action research: Participative inquiry and practice*. (pp. 124-132). Thousand Oaks: SAGE Publications.

Lumsdaine, E. & Lumsdaine, M. 1995. *Creative problem-solving: Thinking skills for a changing world*. New York: McGraw-Hill.

Lumsdaine, E. & Lumsdaine, M. 1995. Thinking preferences of engineering students: Implications for curriculum restructuring. *Journal of Engineering Education*, 84(2):193-204.

Lynch, K. 1995. Equality and Resistance in Higher Education, *International Studies in Sociology of Education*, 5:1, 93-111.

Macdonald, R. 2003. *Developing a scholarship of academic development: Setting the context*. In Eggins, H. & Macdonald, R. (Eds). *The scholarship of academic development*. (pp. 1-10). Maidenhead: Society for Research into Higher Education & Open University Press.

Mandlate, E.V. 2003. *The staff development program at the Eduardo Mondlane University*. A case study prepared for a regional training conference on improving tertiary education in Sub-Saharan Africa: Things That Work. Accra, September 23-25.

Mann, S.J. 2003. *Alternative perspective on professional practice in academic development*. In Eggins, H. & Macdonald, R. (Eds). *The scholarship of academic development*. (pp. 80-89). Maidenhead: Society for Research into Higher Education & Open University Press.

Mário, M., Buendia, M., Kouvenhoven, W., Alberto, A. & Waddington, C. 2002. *Review of education sector analysis in Mozambique: 1990-1998*. Paris: UNESCO-WGESA.

Mário, M., Fry, P., Levy, L.A. & Chilundo, A. 2003. *Higher education in Mozambique: A case study*. Maputo: Imprensa Universitaria.

Marks, D. F. 2002. Freedom, responsibility and power: Contrasting approaches to health psychology. *Journal of Health Psychology*, 7 (1): 5-19

Marshall, S.J., Adams, M.J., Cameron, A., & Sullivan, G. 2000. Academics' perceptions of their professional development need related to leadership and management: What can we learn? *The International Journal for Academic Development*, 5(1): 42-53.

Mathieson, S. 2011. Developing academic agency through critical reflection: a sociocultural approach to academic induction programmes. *International Journal for Academic Development*. 16 (3): 243-256.

Maynard, T. & Furlong, J. 1994 *Learning to teach and models of mentoring*. In: Kerry, T. and Shelton Mayes, A. (Eds). *Issues in Mentoring*. London, UK: Routledge. pp. 10-24.

McCoog, I. J. 2007. Integrated instruction: Multiple intelligences and technology. *The Clearing House: A journal of Educational Strategies, Issues and ideas*, 81 (1): 25-28.

McKay, J. & Marshall, P. 2001. The dual imperatives of action research. *Information Technology & people*, 14 (1): 46-59.

McKeachie, W.J. 1994. *Teaching tips: Strategies, research, and theory for college and university teachers*. (9<sup>th</sup> edition). Massachusetts: DC Heath and Company.

McKeena, H. 1999. The role of reflection in the development of practice theory: A case study. *Journal of Psychiatric and Mental Health Nursing*, 6 (2): 147-151.

McKernan, J. 1996. *Curriculum action research: A handbook of methods and resources for the reflective practitioner*. (2<sup>nd</sup> edition). London: Kogan Page.

McMillan, J.H. & Schumacher, S. 2006. *Research in Education: Evidence-based inquiry*. (6th edition). Boston: Pearson.

McNiff, J. & Whitehead, J. 2006. *All you need to know about action research*. London: SAGE Publications.

McNiff, J. 1988. *Action research: Principles and practice*. Hong Kong: MacMillan Education.

McNiff, J. 2001. *Action research and the Professional learning of teachers*. A paper presented at the Qattan Foundation, Palestine. January, 2001.

McNiff, J. 2002. *Action research: Principles and practice*. (2<sup>nd</sup> ed). London: Routledge Falmer.

McNiff, J., Lomax, P. & Whitehead, J. 1996. *You and your action research project*. London: Routledge.

Mertens, D. 1998. *Research methods in education and psychology: Integrating diversity with quantitative and qualitative approaches*. Thousand Oaks: SAGE Publications.

Mezirow, J. 1990. *How critical reflection triggers transformative learning*. In: Mezirow, J. (Ed). *Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning*. (pp.1-19). California: Jossey-Bass.

Mezirow, J. 1997a. *Cognitive processes: Contemporary paradigms of learning*. In: Sutherland, P. (Ed). *Adult learning: A reader*. (pp. 2-13). London: Kogan Page.

Mezirow, J. 1997b. Transformative learning: Theory into practice. *New Directions for Adult and Continuing Education*, 74 (summer): 5-12.

Mezirow, J.1985. A Critical theory of self-directed learning. In: Brookfield, S. (Ed). *Self-directed learning: From theory to practice*. (pp. 17-30). San Francisco: Jossey-Bass.

Miles, M.B. & Huberman, A.M. 1994. *Qualitative data analysis: An expanded sourcebook*. (2<sup>nd</sup> edition). Thousand Oaks: SAGE Publications.

Minister for Higher Education, Science and Technology. 2000. *Strategic plan of higher education in Mozambique 2000-2010*. Maputo: MESCT.

Ministério da Educação, 2010c – Sistema Nacional de Acumulação e Transferência de Créditos Académicos. [*National System for Accumulation and Transfer of Academic Credits*]. Maputo: Ministério da Educação.

Ministerio da Educação, 2011. Strategic Plan for Higher Education 2012-2020. Maputo: Ministério da Educação.

Ministerio da Educação. 2007. Sistema Nacional de Avaliação, Acreditação e Garantia de Qualidade do Ensino Superior. [National System of Assessment, Accreditation and Guarantee of Quality in Higher Education] Maputo: Ministerio da Educação.

Ministério da Educação. 2009a. *Lei do ensino superior*. [*Higher education law*]. Maputo: Ministério da Educação.

Ministério da Educação. 2009b. *Estratégia de formação de professores para o ensino superior*. [*Strategy for higher education teachers' training*]. Maputo: Ministério da Educação.

Ministério da Educação. 2010a. *Regulamento de licenciamento e funcionamento das instituições do ensino superior*. [*Regulation for higher education institutions licensing and functioning*]. Maputo: Ministério da Educação.

Ministério da Educação. 2010b. *Regulamento do quadro nacional de qualificações*. [*Regulation for the national qualification framework*]. Maputo: Ministério da Educação.

Ministério de Educação e Cultura. 2006. *Plano estratégico da educação e cultura*. [*Strategic plan for education and culture*]. Maputo: Ministério da Educação e Cultura.

Ministry of Education. 2000. *Gazetted the norms and standards for educators*. [Online]. Available url: <http://www.info.gov.za/speeches/2000/000229249p1003.htm>. Accessed: 09 November, 2007.

Mohamedbhai, G. 2008. *The Effects of Massification on Higher Education in Africa*. Accra: Association for the Development of Education in Africa/Association of African Universities. [Online]. available: <http://www.aau.org/sites/default/files/announce/docs/massification.pdf>. Accessed 06 December, 2012.

Moon, J.A. 1999. *Reflection in learning and professional development: Theory and practice*. London: Kogan Page.

Morse, J.M. 2003. *Principles of mixed methods and multimethod research design*. In: Tashakkori, A. & Teddlie, C. (Eds). *Handbook of mixed methods in social and behavioural research*. (pp. 189-208). Thousand Oaks: SAGE Publications.

Mott, V.W. 2000. The development of professional expertise in the workplace. *New Directions for Adult and Continuing Education*, 86: 23 -31.

Mouton, J. 2001. *How to succeed in your master's and doctoral studies: A South African guide and resource book*. Pretoria: Van Schaik.

Mullen, C.A. 2000. Constructing co-mentoring partnership: Walkways we must travel. *Theory Into Practice*, 39 (1): 4-11.

Muncy, J.A. 2006. Implications of contemporary intelligence: Theories to marketing education. *Journal of Education for Business*, 81 (6): 301-306.

Nieuwenhuis, J. 2007. *Qualitative research designs and data gathering techniques*. In: Maree, K. (Ed). *First steps in research*. (pp. 70-97). Pretoria: Van Schaik.

Oliver, P. 2003. *The student's guide to research ethics*. Philadelphia: Open University Press.

Ollerton, M. 2001. Inclusion and entitlement, equality of opportunity and quality of curriculum provision. *Support for Learning*, 16 (1): 35-40.

Ong, K. 2011. Reflection for action in the medical field. *Reflective Practice*, 12 (1): 145-149.

Onwuegbuzie, A. J. & Teddlie, C. 2003. A framework for analyzing data in mixed methods research. In: Tashakkori, A. & Teddlie, C. (Eds). *Handbook of mixed methods in social and behavioural research*. (pp. 3-50). Thousand Oaks: SAGE Publications.

Orlikowski, W.J. 2002. Knowing in practice: Enacting a collective capability in distributed organizing. *Organisation Science*, 13 (3): 249-273.

Østerlund, C. & Carlile, P. 2005. Relations in practice: Sorting through practice theories on knowledge sharing in complex organisations. *The Information Society*, 21 (2): 91-107.

Osterman, K.F. & Kottkamp, R.B. 1993. *Reflective practice for educators: Improving schooling through professional development*. California: Corwin Press.

Patterson, G. 1999. The learning university. *The Learning Organisation: An International Journal*, 6 (1): 9-17.

Paulsen, M.B. 2001. The relation between research and the scholarship of teaching. *New Directions for Teaching and Learning*, 86 (summer): 19-29.

Perry, M.A. 2000. Reflections on intuition and expertise. *Journal of Clinical Nursing*, 9 (1): 137-145.

Peters, J.M. & Armstrong, J. L. 1998. Collaborative Learning: People Laboring Together to Construct Knowledge. *New Directions for Adult and Continuing Education*, 79 (Fall):75–85.

Philips, J. 2003. Powerful learning: Creating learning communities in urban school reform. *Journal of Curriculum and Supervision*, 18 (3): 240-258.

Pill, A. 2005. Models of professional development in the education and practice of new teachers in higher education. *Teaching in Higher Education*, 10 (2): 175-188.



Pintrich, P.R. 1999. The Role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research*, 31 (6): 459-470.

Postle, D. 2003. *Putting the heart back into learning*. In: Boud, L., Cohen, R. & Walker, D. (Eds). *Using experience for learning*. (pp. 33-45). Buckingham: Society for Research into Higher Education & Open University Press.

Prilleltensky, I. (1997). Values, assumptions, and practices: assessing the moral implications of a psychological discourse and action. *American Psychologist*, 52 (5): 966-967.

Prilleltensky, I. (2001). Value-based praxis in community psychology: Moving toward social justice and social action. *American Journal of Community Psychology*, 29 (5): 747-778.

Proctor, K.A. 1993. *Tutor's professional knowledge of supervision and the implications for supervision practice*. In: Calderhead, J. & Gates, P. (Eds). *Conceptualizing reflection in teacher education*. (pp. 93-112). London: Falmer Press.

Quinn, L. 2003. A theoretical framework for professional development in a South African university. *International Journal for Academic Development*, 8 (1/2): 61-75.

Radloff, A. 2005. *Decentralised approaches to education development: Supporting quality teaching and learning from within faculty*. In: Fraser, K. (Ed). *Education development and leadership in higher education: Developing and effective institutional strategy*. London: Routledge Falmer.

Ramsden, P. 1992. *Learning to teach in higher education*. London: Routledge.

Ray, J. L. & Smith, A. D. 2012. Using Photographs to Research Organizations: Evidence, Considerations, and Application in a Field Study. *Organizational Research Methods*, 15(2) 288-315.

Reason, P. & Brandby, H. 2005. Introduction: Inquiry and participation in search of a world worthy of human aspiration. In: Reason, P. & Brandby, H. (Eds). *Handbook of action*

research: *Participative inquiry and practice*. (pp. 124-132). Thousand Oaks: SAGE Publications.

Richlin, L. 2001. Scholarly teaching and the scholarship of teaching. *New Directions for Teaching and Learning*, 86 (summer): 57-68.

Roche, V. 2001. Professional development models and transformative change: A case study of indicators of effective practice in higher education. *The International Journal for Academic Development*, 6 (2): 120-129.

Rönnerman, K. 2003. Action research: Educational tools and the improvement of practice. *Educational Action Research*, 11 (1): 9-22.

Rooney, P. 2005. *Researching from inside Does it compromise validity? – A discussion*. [Online]. Available url: <http://arrow.dit.ie/cgi/viewcontent.cgi?article=1004&content=Hcart>. Accessed: 29 January, 2013

Rowland, S. 2007. Academic Development: A site of creative doubt and contestation. *International Journal for Academic Development*, 12 (1): 9-14.

Scandura, T. A. & Williams, E. A. 2000. Research methodology in management: Current practices, trends, and implications for future research. *Academy of Management Journal*, 43 (6): 1248-1264.

Scheepers, M. D., de Boer, A.L., Bothma, T. & du Toit, P. H. 2011. A mental model for successful inter-disciplinary collaboration in curriculum innovation for information literacy. *South African Journal of Libraries & Information Sciences*. 77(1): 75-84.

Schön, D.A. 1983. *The reflective practitioner: How professionals think in action*. New York: Basic Books.

Schön, D.A. 1987. *Educating the reflective professional: Toward a new design for teaching and learning in professions*. San Francisco: Jossey-Bass.

Scott, P. 2005. *Divergence or convergence? The links between teaching and research in mass higher education*. In: Barnett, R. (Ed). *Reshaping the university: New relationships between research, scholarship and teaching*. (pp. 53-66). Buckingham: Society for Research into Higher Education & Open University Press.

Seminiuk, A. & Worrall, A.M. 2000. Rereading the dominant narrative of mentoring. *Curriculum Inquiry*, 30 (4): 405-428.

Senge, P. 1997. *Building learning organisations*. In: Pugh, D.S. (Ed). *Organisation Theory: selected readings*. (4<sup>th</sup> edition). (pp. 486-514). London: Penguin Books.

Shepherd, M. 2004. Reflections on developing a reflective journal as a management adviser, reflective practice. *International and Multidisciplinary Perspectives*, 5 (2): 199-208.

Shulman, L.S. 1987. Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57 (1): 1-21.

Silverman, D. 2011. *Interpreting qualitative data: A guide to the principles of qualitative research*. (4th edition). London: SAGE.

Somekh, B. 2006. *Action research: A methodology for change and development*. Maidenhead: Open University Press.

Sousa, L. & Eusebio, C. 2005. When multi-problem poor individuals' values meet practitioners' values! *Journal of Community & Applied Social Psychology*, 15: 353–367.

Sprenger, M. 1999. *Learning & memory: The brain in action*. Virginia: Association for Supervision and Curriculum Development.

Springer, S.P. & Deutsch, G. 1989. *Left brain, right brain*. (3<sup>rd</sup> edition). New York: W.H. Freeman and Company.

Stake, R.E. 2005. *Qualitative case studies*. In: Denzin, N.K. & Lincoln, Y.S. (Eds). *The Sage handbook of qualitative research*. (3<sup>rd</sup> edition). (pp. 443-466). Thousand Oaks: SAGE Publications.

Steyn, T. & Maree, J. 2003. Study orientation in mathematics and thinking preferences of freshmen engineering and science students. *Perspectives in Education*, 21(2): 47-56.

Tann, S. 1993. *Eliciting student teacher's personal theories*. In: Calderhead, J. & Gates, P. (Eds). *Conceptualizing reflection in teacher education*. (pp. 53-69). London: Falmer Press.

Task Force on Higher Education and Society. 2000. *Higher education in developing countries: Peril and promise*. Washington, D.C: The World Bank.

Taylor, M., Abasi, A., Pinsent-Johnson, C., and Evans, K. 2007. Collaborative learning in communities of literacy practice. *Adult Basic Education and Literacy Journal*, 1 (1): 4-11.

Teddlie, C. & Tashakkori, A. 2003. *Major issues and controversies in the use of mixed methods in the social and behavioural sciences*. In: Tashakkori, A. & Teddlie, C. (Eds). *Handbook of mixed methods in social and behavioural research*. (pp. 3-50). Thousand Oaks: SAGE Publications.

Teddlie, C. & Tashakkori, A. 2009. *Foundations of mixed methods research: integrating quantitative and qualitative approaches in the social and behavioural sciences*. Thousand Oaks: SAGE Publications.

TEFERRA, D and KNIGHT, J (eds) (2008). *Higher Education in Africa: The International Dimension*. Massachusetts/ Accra: Center for International Higher Education/ Association of African Universities.

Tigelaar, D.E.H., Dolmans, H.J. M., Grave, W.S., Wolfhagen, I.H.A.P., & Van Der Vleuten, C.P.M. 2006. Portfolio as a tool to stimulate teacher's reflections. *Medical Education*, 28 (3): 277-282.

Toohy, S. 1999. *Designing courses for higher education*. Buckingham: Society for Research into Higher Education & Open University Press.

Towndrow, P. A., Ling, T. A. & Venthan, A. M. 2008. Promoting Inquiry Through Science Reflective Journal Writing. *Eurasia Journal of Mathematics, Science & Technology Education*, 4(3), 279-283.

UEM. 1990. *Regulamento da carreira docente. [Regulation of the lecturing career]*. Maputo: Universidade Eduardo Mondlane.

UEM. 2007. Filosofia do sistema de avaliação de desempenho do corpo docente e investigador: SADE-CDI, Vol I. [Philosophy of the academic and research staff performance appraisal system: SADE-CDI, Vol. I]. Maputo: Universidade Eduardo Mondlane.

UEM. 2010. *Relatório de actividades e financeiro de 2009. [Year 2009 activities and finances report]*. Maputo: Gabinete de Planificação/Direcção de Finanças.

UEM.1999. *Novo quadro curricular da UEM. [New curriculum cadre at the UEM]*. Maputo: Universidade Eduardo Mondlane.

United Nations Development Programme. 2008. *Mozambique national human development report 2008: The role of information communication technologies in achieving the millennium development goals*. Maputo: UNDP.

University of Windsor. 2012. *Celebrating success stories critical for maintaining research excellence*. [Online]. Available url: <http://www.uwindsor.ca> Accessed 7 March, 2012.

Valli, L.R. 1990. *Moral approaches to reflective practice*. In: Clift, R.T., Houston, W.R. & Pugach, M.C. (Eds). *Encouraging reflective practice in education*. (pp. 39-56). New York: Teachers College Press.

Valli, L.R. 1993. *Reflective teacher education programs: An analysis of case studies*. In: Calderhead, J. & Gates, P. (Eds). *Conceptualizing reflection in teacher education*. (pp. 11-22). London: Falmer Press.

Van Boxtel, C. A. M., Van der Linden, J., & Kanselaar, G. (2000). Collaborative learning tasks and the elaboration of conceptual knowledge. *Learning and Instruction*, 10:311–330.

Van Halen-Faber, C. 1997. Encouraging critical reflection in preservice teacher education: a narrative of a personal learning journey. *New Directions for Adult and Continuing Education*, 74:51-60.

Van Hattum-Janssen, N. & Lourenco, J.M. 2008. Peer and self-assessment for first-year students as a tool to improve learning. *Journal of Professional Issues in Engineering Education and Practice*, 134 (4): 346-352.

Van Manen, M. 1995. On the epistemology of reflective practice. *Teachers and Teaching: theory and practice*, 1(1): 33-50.

Van Woerkom, M. 2010. Critical Reflection as a rationalistic ideal. *Adult Education Quarterly*, 60(4): 339-356.

Voges, A. 2005. *An evaluative analysis of a whole-brain learning programme for adults*. PhD Thesis. Pretoria: University of Pretoria.

Von Glasersfeld, E. 1995. *A constructivist approach to teaching*. In: Steffe, L.P. & Gale, J. (Eds.). *Constructivism in education*. (pp. 3-15). Hillsdale, NJ: Lawrence Erlbaum Associates.

Vossensteyn, H., Scott, I., Gillard, E., Mário, M., Matavele, H. & Mlay, G. 2006. *Manual de formação do SNATCA: Estrutura e componentes*. [SNATCA training handbook: Structure and Components]. Enschede/Cape Town/Maputo: Center for Higher Education Policy Studies.

Walkington, J., Christensen, H.P. & Kock, H. 2001. Developing critical reflection as a part of teaching training and teaching practice. *European Journal of Engineering Education*, 26 (4): 343-350.

Wall, D. & Horák, T. 2007. Using baseline studies in the investigation of test impact. *Assessment in Education*, 14 (1): 99-116.

Webber, T., Bourner, T. & O'Hara, S. 2003. *Practitioner-centred research on academic development*. In Eggins, H. & Macdonald, R. (Eds). *The scholarship of academic development*. (pp. 117-128). Maidenhead: Society for Research into Higher Education & Open University Press.

Webster-Wright, A. 2009. Reframing Professional Development Through Understanding Authentic Professional Learning. *Review of Educational Research*, 79 (2): 702-739.

Wehmeier, S., McIntosh, C., Turnbull, J. (Eds). 2005. *Oxford Advanced Learner's Dictionary of Current English*. (7<sup>th</sup> Edition). Oxford: University Press.

Wildman, T.M., Niles, J.A., Magliaro, S.G. & McLaughlin, R.A. 1990. *Promoting reflective practice among beginning and experienced teachers*. In: Clift, R.T., Houston, W.R. & Pugach, M.C. (Eds). *Encouraging reflective practice in education*. (pp. 139-162). New York: Teachers College Press.

Winter, R. 1996. *Some principles and procedures for the conduct of action research*. In: Zuber-Skerritt, O. (Ed). *New directions in action research*. (pp. 13-27). London: Falmer Press.

Wong, F.Y., Kember, D., Chung, L.Y.F. & Yan, L. 1995. Assessing the level of student reflection from reflective journals. *Journal of Advanced Nursing*, 22: 48-57.

Yin, R. 2009. *Case study research: Design and methods*. (4th edition). Thousand Oaks: SAGE Publications.

Yorks, L. & Kasl, E. 2002. Toward a Theory and Practice for Whole-Person Learning: Reconceptualizing Experience and the Role of Affect. *Adult Education Quarterly*, 52 (3): 176–192.

Zeichner, K.M. & Tabachnick, B.R. 1991. *Issues and practices in inquiry-orientated teacher education*. New York: Falmer.

Zimmerman, B.J. 1990. Self-regulated learning and academic achievement: An overview. *Educational Psychologist*, 25 (1): 3- 17.

Zimmerman, B.J. 1994. *Self-regulation of learning and performance: Issues and educational applications*. Hillsdale: Erlbaum.



Zuber-Skerrit, O. 1996. *New directions in action research*. London: Falmer Press.

Zuber-Skerritt, O. 1992. *Professional development in higher education: A theoretical framework for action research*. London: Kogan Page.

## Appendix A: Questionnaire on innovative practice

### QUESTIONNAIRE ON INNOVATIVE PRACTICE

Dear participant

You are invited to complete this questionnaire framed within the research on “Promoting critical reflection for academic professional development in higher education”. It is a study aimed at exploring the available opportunities for professional development in the Mozambican Higher Education.

Please, keep in mind that this is not an assessment of your practice. Therefore, there are not right or wrong answers. The questionnaire will be kept anonymous. Your answers will be handed with great confidentiality.

Thank you for your time



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7. Number of years lecturing in Higher Education: _____ years	V7 <input type="checkbox"/>																		
8. Gender	V8 <input type="checkbox"/>																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">1. Male</td> <td style="width: 50%;">2. Female</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> </tr> </table>	1. Male	2. Female																	
1. Male	2. Female																		
9. Please, indicate your age: _____ years	V9 <input type="checkbox"/>																		

10 Indicate which of the following short courses you have attended?

	1.Yes	2.No
Teaching methods		
Student assessment		
Laboratory classes		
Course design		
Research methodology		
Other 1 (specify)		
Other 2 (specify)		

V10

V11

V12

V13

V14

V15

V16

11 In which of the following education-based institutions have you been trained?

	1.Yes	2.No
Pedagogical University		
(former) Faculty of Education		
(current) Faculty of Education		
Medium Pedagogical Institute		
Other 1 (specify)		

V17

V18

V19

V20

V21

12 In which field is/are located the course(s) you facilitate?

1. Natural Sciences	2. Social Sciences	3. Engineering & Technology	4. Agricultural Sciences	5. Medical Sciences	6. Other

If "Other", specify here \_\_\_\_\_

V22

**Section 2. Professional Development in Higher Education**

13 Signal (✓ or X) which of the following activities you have performed in the last two years.

	1.Yes	2.No
Attendance of conferences, congresses, seminars, workshops, etc		
Being mentored by a more experienced peer		
Attendance of case discussion meetings		
Publication of articles and/or books (chapters)		
Carrying out scientific research		
Joint activity(ies) with other institution(s)		
Attendance of short courses		
Peer-lecturing (mentoring)		
Other (specify)		

V23

V24

V25

V26

V27

V28

V29

V30

V31

When you answer to the following groups of questions consider that  
 1 = Never, 2 = Rarely, 3 = Frequently, 4 = Always, NA = Not applicable

14 With which frequency do you adopt the following aspects in your practice?

	1	2	3	4	NA
Ask a colleague to observe my classes and give feedback on it					
Analyze my classes with my co-lecturer					
keep record of critical incidents					
Ask students' written comment about my classes					
Videotape my classes for later analysis					
keep a diary of my activities					
Administer a student feedback questionnaire					
Developing a professional teaching portfolio					
Other (specify)					

V32  
V33  
V34  
V35  
V36  
V37  
V38  
V39  
V40


15 What do you do after you have faced and solved a challenge in your class?

	1	2	3	4	NA
Engage in on-the-spot talk to a trusted colleague					
Present in regular meetings I have with colleagues					
Present in regular meetings I have with a fixed peer					
Document in my professional teaching journal for later analysis					
Read related literature for comparison					
Other (specify)					

V41  
V42  
V43  
V44  
V45  
V46


**Section 3. Ways of facilitating learning**

16 How often do you accommodate and/or promote the following student characteristics?

	1	2	3	4	NA
Preference for activities that involve following precise procedures					
Guidance by emotions and feelings (happiness, surprise, etc)					
Critical thinking					
Preference for activities that involve music					
Predilection for activities that involve pictures as representations of ideas					
Preference by activities involving exact measures					
Guidance by intuition when making decision					
Predilection for examining parts of the problem when making a decision					

V47  
V48  
V49  
V50  
V51  
V52  
V53  
V54


When you answer to the following groups of questions consider that  
1 = Never, 2 = Rarely, 3 = Frequently, 4 = Always, NA = Not applicable

17 How often do you facilitate your students learning through...

	1	2	3	4	NA
Lectures					
Group discussions					
Action-orientated activities					
Using visualization (diagrams, graphics)					
Problem analyzes					
Brainstorming					
Case study					
Experience-based learning					
Use of textbooks and manuals					
Field trips					
Role play activities					
Musical and storytelling activities					
Individual projects					
Evaluating and testing theories					

V55

V56

V57

V58

V59

V60

V61

V62

V63

V64

V65

V66

V67

V68

18 How often do you seek to develop the following aspects while facilitating learning?

	1	2	3	4	NA
Ability to use non-verbal communication					
Ability to generalize ideas from concrete instances					
Ability to dissect facts and/or ideas					
Ability to wear someone's skin (empathy)					
Skills to interact with people (interpersonal skills)					
Ability to make judgement based on facts					
Ability to look at the issue details (detailed thinking)					
Skills to organize ideas and things					
Ability to plan events and/or acts (planning skills)					
Verbal communication skills					
Ability to be creative (in thinking, generating ideas)					
Ability to put ideas into practice (implementation)					

V69

V70

V71

V72

V73

V74

V75

V76

V77

V78

V79

V80

*Thank you!*



## Appendix B: Quantitative data tables

**Table B1.** Respondents attendance to short-courses

Institution	UEM	UP	ISRI	ISPM	ISPG	ISPT	ACIPOL	Total
<b>Course</b>								
<b>Teaching Methods</b>	190 (79%)	109 (81%)	15 (83%)	10 (67%)	14 (93%)	9 (75%)	8 (89%)	358
<b>Research Methods</b>	151 (63%)	95 (71%)	9 (50%)	10 (67%)	5 (33%)	6 (50%)	8 (89%)	286
<b>Student Assessment</b>	164 (68%)	75 (56%)	9 (50%)	10 (67%)	10 (67%)	8 (67%)	2 (22%)	280
<b>Course Design</b>	47 (20%)	45 (34%)	4 (22%)	6 (40%)	8 (53%)	5 (42%)	1 (11%)	117
<b>Laboratory Classes</b>	31 (13%)	21 (16%)	1 (6%)	4 (27%)	4 (27%)	1 (8%)	1 (11%)	64
<b>Others</b>	31 (13%)	9 (7%)	0 (0%)	5 (33%)	1 (7%)	1 (8%)	0 (0%)	47

**Table B2.** Activities performed by respondents within the previous two (2) years

Institution	UEM	UP	ISRI	ISPM	ISPG	ISPT	ACIPO	Total
<b>Activity</b>								<b>L</b>
<b>Attendance of seminars, conferences, workshops</b>	211 (88%)	105 (78%)	17 (94%)	13 (87%)	13 (87%)	11 (92%)	7 (78%)	380
<b>Attendance of short-courses</b>	168 (70%)	86 (64%)	12 (67%)	14 (93%)	10 (67%)	6 (50%)	9 (100%)	308
<b>Being mentored by a more experienced peer</b>	181 (75%)	79 (59%)	9 (50%)	12 (80%)	13 (87%)	5 (42%)	6 (67%)	306
<b>Carrying out scientific research</b>	173 (72%)	82 (61%)	4 (22%)	8 (53%)	6 (40%)	1 (8%)	4 (44%)	281
<b>Joint activity(ies) with other institution(s)</b>	147 (61%)	55 (41%)	5 (28%)	7 (47%)	12 (80%)	4 (33%)	3 (33%)	236
<b>Peer-lecturing (mentoring)</b>	139 (58%)	55 (41%)	7 (39%)	11 (73%)	5 (33%)	2 (17%)	1 (11%)	222
<b>Attendance of case discussion meetings</b>	120 (50%)	58 (43%)	9 (50%)	7 (47%)	4 (27%)	5 (42%)	3 (33%)	207
<b>Publication of articles and/or books (chapters)</b>	123 (51%)	40 (30%)	3 (17%)	4 (27%)	4 (27%)	2 (17%)	4 (44%)	181
<b>Other</b>	6 (3%)	3 (2%)	0 (0%)	1 (7%)	0 (0%)	1 (8%)	0 (0%)	11

**Table B3.** Respondents' use of reflective practice tools.

Reflection	Institution							Total
	UEM	UP	ISRI	ISPM	ISPG	ISPT	ACIPOL	
<b>Analyze my classes with my co-lecturer</b>	177 (73%)	82 (61%)	7 (39%)	9 (60%)	8 (53%)	4 (33%)	7 (78%)	296
<b>keep record of critical incidents</b>	130 (54%)	55 (41%)	10 (56%)	9 (60%)	11 (73%)	7 (58%)	4 (44%)	227
<b>keep a diary of my activities</b>	121 (50%)	50 (37%)	5 (28%)	10 (67%)	6 (40%)	8 (67%)	6 (67%)	208
<b>Ask students' written comment about my classes</b>	87 (36%)	44 (33%)	8 (44%)	6 (40%)	11 (73%)	5 (42%)	4 (44%)	167
<b>Administer a student feedback questionnaire</b>	100 (42%)	42 (31%)	5 (28%)	4 (27%)	7 (47%)	4 (33%)	1 (11%)	165
<b>Developing a professional teaching portfolio</b>	77 (32%)	47 (35%)	7 (39%)	9 (60%)	6 (40%)	5 (42%)	5 (56%)	157
<b>Ask a colleague to observe my classes and give feedback on it</b>	61 (25%)	36 (27%)	4 (22%)	4 (27%)	5 (33%)	3 (25%)	4 (44%)	119
<b>Videotape my classes for later analysis</b>	10 (4%)	6 (5%)	0 (0%)	0 (0%)	0 (0%)	2 (17%)	0 (0%)	19
<b>Other</b>	7 (3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (8%)	0 (0%)	9

**Table B4.** Lecturers' use of reflective mechanisms after a challenge

Reflection in challenge	Institution							Total
	UEM	UP	ISRI	ISPM	ISPG	ISPT	ACIPOL	
<b>Read related literature for comparison</b>	199 (83%)	118 (88%)	13 (72%)	13 (87%)	14 (93%)	12 (100%)	9 (100%)	381
<b>Engage in on-the-spot talk to a trusted colleague</b>	172 (71%)	103 (77%)	10 (56%)	12 (80%)	11 (73%)	9 (75%)	8 (89%)	328
<b>Present in regular meetings I have with a fixed peer</b>	169 (70%)	87 (65%)	6 (33%)	6 (40%)	9 (60%)	6 (50%)	5 (56%)	290
<b>Present in regular meetings I have with colleagues</b>	122 (51%)	73 (54%)	9 (50%)	9 (60%)	7 (47%)	6 (50%)	5 (56%)	233
<b>Document in my professional teaching journal for later analysis</b>	93 (39%)	48 (36%)	7 (39%)	8 (53%)	9 (60%)	8 (67%)	7 (78%)	182

**Table B5.** frequency of lecturers accommodation of student descriptors

Preferred activities	Institution								Total
	UEM	UP	ISRI	ISPM	ISPG	ISPT	ACIPOL		
<b>Critical thinking</b>	195 (81%)	119 (89%)	12 (67%)	13 (87%)	11 (73%)	9 (75%)	8 (89%)	369	
<b>Activities that involve following precise procedures</b>	169 (70%)	89 (66%)	14 (78%)	10 (67%)	12 (80%)	9 (75%)	7 (78%)	313	
<b>Examining parts of the problem when making a decision</b>	152 (63%)	82 (61%)	8 (44%)	9 (60%)	12 (80%)	8 (67%)	5 (56%)	278	
<b>activities that involve pictures as representations of ideas</b>	129 (53%)	66 (49%)	7 (39%)	6 (40%)	6 (40%)	6 (50%)	2 (22%)	224	
<b>activities involving exact measures</b>	131 (54%)	57 (43%)	4 (22%)	6 (40%)	10 (67%)	10 (83%)	2 (22%)	222	
<b>Guidance by emotions and feelings</b>	59 (24%)	28 (21%)	3 (17%)	7 (47%)	2 (13%)	2 (17%)	3 (33%)	106	
<b>Guidance by intuition when making decision</b>	66 (27%)	25 (19%)	0 (0%)	1 (7%)	3 (20%)	3 (25%)	1 (11%)	100	
<b>Activities that involve music</b>	11 (5%)	13 (10%)	2 (11%)	3 (20%)	0 (0%)	1 (8%)	1 (11%)	32	

**Table B6. lecturers' employment of diverse strategies for facilitating learning**

Institution	Facilitation methods							Total
	UEM	UP	ISRI	ISPM	ISPG	ISPT	ACIPOL	
<b>Group discussions</b>	206 (85%)	125 (93%)	13 (72%)	13 (87%)	14 (93%)	8 (67%)	7 (78%)	389
<b>Use of textbooks and manuals</b>	213 (88%)	114 (85%)	16 (89%)	12 (80%)	10 (67%)	8 (67%)	8 (89%)	383
<b>Problem analyses</b>	196 (81%)	104 (78%)	13 (72%)	12 (80%)	13 (87%)	11 (92%)	8 (89%)	360
<b>Action-orientated activities</b>	176 (73%)	113 (84%)	12 (67%)	11 (73%)	14 (93%)	9 (75%)	7 (78%)	344
<b>Lectures</b>	178 (74%)	109 (81%)	12 (67%)	12 (80%)	14 (93%)	8 (67%)	7 (78%)	343
<b>Using visualization (diagrams, graphics)</b>	183 (76%)	75 (56%)	8 (44%)	12 (80%)	12 (80%)	9 (75%)	6 (67%)	307
<b>Experience-based learning</b>	148 (61%)	86 (64%)	9 (50%)	11 (73%)	10 (67%)	10 (83%)	6 (67%)	282
<b>Case study</b>	147 (61%)	71 (53%)	12 (67%)	6 (40%)	9 (60%)	9 (75%)	7 (78%)	263
<b>Brainstorming</b>	132 (55%)	76 (57%)	10 (56%)	14 (93%)	10 (67%)	6 (50%)	7 (78%)	258
<b>Individual projects</b>	133 (55%)	76 (57%)	7 (39%)	8 (53%)	9 (60%)	7 (58%)	4 (44%)	246
<b>Evaluating and testing theories</b>	126 (52%)	63 (47%)	8 (44%)	5 (33%)	11 (73%)	9 (75%)	7 (78%)	232
<b>Field trips</b>	91 (38%)	23 (17%)	0 (0%)	7 (47%)	11 (73%)	2 (17%)	3 (33%)	138
<b>Role play activities</b>	30 (12%)	35 (26%)	5 (28%)	2 (13%)	1 (7%)	3 (25%)	3 (33%)	80
<b>Musical and storytelling activities</b>	20 (8%)	8 (6%)	4 (22%)	2 (13%)	0 (0%)	2 (17%)	0 (0%)	37

**Table B7.** lecturers' effort to develop whole brain related descriptors

Institution	Institution							Total
	UEM	UP	ISRI	ISPM	ISPG	ISPT	ACIPOL	
<b>Facilitation methods</b>								
<b>Verbal communication skills</b>	216 (90%)	124 (93%)	15 (83%)	14 (93%)	14 (93%)	11 (92%)	8 (89%)	405
<b>Ability to be creative (in thinking, generating ideas)</b>	212 (88%)	129 (96%)	14 (78%)	15 (100%)	12 (80%)	11 (92%)	8 (89%)	404
<b>Ability to generalize ideas from concrete instances</b>	217 (90%)	117 (87%)	16 (89%)	15 (100%)	14 (93%)	11 (92%)	8 (89%)	401
<b>Skills to organize ideas and things</b>	214 (89%)	122 (91%)	13 (72%)	14 (93%)	14 (93%)	11 (92%)	8 (89%)	399
<b>Ability to put ideas into practice (implementation)</b>	206 (85%)	122 (91%)	12 (67%)	15 (100%)	13 (87%)	11 (92%)	8 (89%)	390
<b>Ability to look at the issue details (detailed thinking)</b>	214 (89%)	117 (87%)	12 (67%)	14 (93%)	12 (80%)	11 (92%)	8 (89%)	389
<b>Skills to interact with people (interpersonal skills)</b>	193 (80%)	121 (90%)	13 (72%)	12 (80%)	13 (87%)	9 (75%)	5 (56%)	367
<b>Ability to make judgement based on facts</b>	196 (81%)	115 (86%)	14 (78%)	11 (73%)	11 (73%)	9 (75%)	8 (89%)	366
<b>Ability to dissect facts and/or ideas</b>	197 (81%)	105 (78%)	13 (72%)	13 (87%)	13 (87%)	11 (92%)	7 (78%)	361
<b>Ability to plan events and/or acts (planning skills)</b>	163 (68%)	107 (80%)	12 (67%)	12 (80%)	11 (73%)	8 (67%)	6 (67%)	322
<b>Ability to stand in someone's shoes (empathy)</b>	156 (64%)	82 (61%)	13 (72%)	11 (73%)	12 (80%)	6 (50%)	7 (78%)	289
<b>Ability to use non-verbal Communication</b>	87 (36%)	35 (26%)	6 (33%)	6 (40%)	4 (27%)	3 (25%)	5 (56%)	148

## Appendix C: Interview guide for lecturers

**Position occupied:** \_\_\_\_\_

**Date:** \_\_\_/\_\_\_/\_\_\_ **Time:** \_\_\_\_\_

### Questions:

1. According to the New Curricular cadre, it is important to define a clear strategy of continual improvement of academic staff in Mozambican HEIs.
  - a) To what extent has your institution complied which such demand?
  
2. The need for lecturers to reflect on practice is considered a crucial for lecturers' continual improvement.
  - a) How is that trend accommodated within your institution (faculty or department)?
  - b) Which mechanisms are being adopted to promote critical reflection?
  
3. Attendance of Professional development opportunities, such as conferences and seminars is deemed important for any HE lecturer.
  - a) To what extent is this being achieved within your institution (faculty or department)?
  
4. What activities are being effectively implemented in your institution contributing to:
  - a) Lecturers reflection
  - b) Professional improvement of academic staff.

## Appendix D: Acknowledgement of approval by the Ethical Committee



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

Faculty of Education  
Student Administration

16 May 2011

**STUDENT NO:** 2735315

Mr JJDS Fringe  
Faculty of Education  
University of Eduardo Mondlane  
PO Box 257  
Maputo  
Mozambique

Dear Mr Fringe

### APPROVAL OF TITLE: THESIS

**DEGREE:** PhD: Curriculum and Instructional Design and Development

I have pleasure in informing you that the following has been approved:

**TITLE:** Promoting critical reflection for academic professional development in higher education

**SUPERVISOR:** Dr PH du Toit

**CO-SUPERVISORS:** Prof M Mario

The requirements for theses are listed in the General Information and Regulations of the University. Consult Regulations G.45 to G.61 which are related to theses and the assessment thereof.

Summarised guidelines for the submission and technical details of theses, a checklist as well as a "Notice of Submission" are attached. Kindly note that, in accordance with Regulation G.60 1(a), your written "Notice of Submission" should reach the Student Administration three months prior to submission.

Your registration as a student must be renewed annually before 28 February until you have complied with all the requirements for the degree. You will only be entitled to the guidance of your supervisor if annual proof of registration is submitted.

Yours sincerely

  
for **DEAN**  
**FACULTY OF EDUCATION**



Administration Building, H09  
Groenkloof Campus, University of Pretoria  
PRETORIA 0002  
Republic of South Africa

(012) 420 5695  
(012) 420 5933

[liza.vanbaalen@up.ac.za](mailto:liza.vanbaalen@up.ac.za)  
[www.up.ac.za/education](http://www.up.ac.za/education)



Appendix E: Letter of approval of the thesis title



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

Faculty of Education  
Student Administration

16 May 2011

**STUDENT NO:** 2735315

Mr JJDS Fringe  
Faculty of Education  
University of Eduardo Mondlane  
PO Box 257  
Maputo  
Mozambique

Dear Mr Fringe

**APPROVAL OF TITLE: THESIS**

**DEGREE:** PhD: Curriculum and Instructional Design and Development

I have pleasure in informing you that the following has been approved:

**TITLE:** Promoting critical reflection for academic professional development in higher education

**SUPERVISOR:** Dr PH du Toit

**CO-SUPERVISORS:** Prof M Mario

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Yours sincerely

  
for **DEAN**  
**FACULTY OF EDUCATION**



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Appendix F: Letter to the institutions asking permission to collect data



**UNIVERSIDADE EDUARDO MONDLANE**  
**FACULDADE DE EDUCAÇÃO**

À Direcção de ESCOLA DE  
HOTELARIA E TURISMO  
UEM - INHAMBANE

N/R: 345

Maputo, aos 22 de Setembro de 2008

**Assunto: Autorização de recolha de dados**

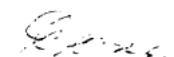
Exmos. Senhores,

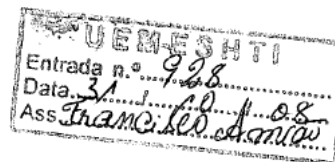
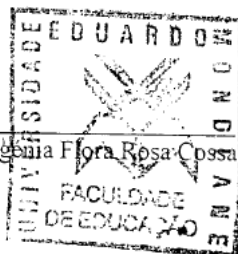
Serve a presente para confirmar que o **dr. Jorge Jaime dos Santos Fringe** é docente desta Faculdade afecto ao Departamento de Psicologia e Ciências de Educação e que é também estudante ao nível de Doutoramento na Universidade de Pretória, na África do Sul, estando para iniciar a recolha de dados para a sua dissertação sobre Reflexão Crítica Como Princípio Essencial do Desenvolvimento Profissional do Corpo Docente no Ensino Superior. A recolha de dados consistirá em entrevistas a directores de Faculdades, Chefes de Departamento e de Secções, na administração de questionários a docentes e na consulta a materiais escritos relevantes.

Assim, agradecemos atenciosamente que V. Excias lhe autorizem o acesso à vossa instituição, solicitando que respondam por escrito à carta em anexo, para efeitos de obtenção de Certificado de Ética da sua instituição de formação.

Sem outro assunto, aproveitamos o ensejo para lhes endereçar os nossos melhores cumprimentos, e colocamo-nos à vossa inteira disposição para quaisquer esclarecimentos.

A Directora

  
Prof. Doutora Eugénia Flora Rosa-Cossa



## Appendix G: Letter of host institutions authorizing to carry out the research



INSTITUTO SUPERIOR DE  
RELAÇÕES INTERNACIONAIS

DEPARTAMENTO DE PLANIFICAÇÃO E COOPERAÇÃO

MAPUTO, 06 DE NOVEMBRO DE 2008

NOTA Nº 12 / DAF-ISRI/08

À UNIVERSIDADE EDUARDO MONDLANE

FACULDADE DE EDUCAÇÃO

DEPARTAMENTO DE PSICOLOGIA E CIÊNCIAS DE EDUCAÇÃO

MAPUTO

Assunto: **Resposta a nota nº 345**

Em resposta a nota acima citada, vimos por este meio informar que o ISRI está disponível para receber o docente, **Dr. Jorge Jaime dos Santos Fringe** para efectuar a **recolha de dados** conforme o pedido por ele formulado.

O docente poderá contactar o Departamento de Planificação e Cooperação que irá acompanhá-lo na realização do seu trabalho.

Saudações Cordiais

O CHEFE DO DEPARTAMENTO

Arnaldo Timóteo Massangaie



## Appendix H: Letter of invitation for lecturers to participate in the learningshops

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UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

FACULTY OF EDUCATION

DEPARTMENT OF CURRICULUM  
STUDIES

### CONVITE PARA PARTICIPAÇÃO NO CURSO

Estimado(a) docente

Como parte de minha formação ao nível de Doutoramento em Estudos Curriculares, na Faculdade de Educação, da Universidade de Pretória, vou organizar e facilitar um curso designado "Prática reflexiva". O curso é constituído por nove (9) sessões, de 2 horas cada, que terão lugar numa frequência de duas (2) sessões por mês..

Este curso será também organizado noutras faculdades e futuramente poderá fazer parte dos cursos oferecidos a docentes da UEM, pela Faculdade de Educação/CDA. O curso é parte das minhas estratégias de pesquisa, concebida no âmbito do desenvolvimento profissional do pessoal académico no ensino superior.

A sua participação neste curso é voluntária e você pode decidir abandonar o processo a qualquer momento se assim julgar. No fim do curso todos os participantes terão direito a um Certificado de Participação, passado pela Faculdade de Educação da UEM.

Para comentários, questão e/ou sugestões, contacte-me no gabinete 302 da Faculdade de Educação - UEM, pelo telemóvel nº 824120440 ou pelo email: [jorge.fringe@uem.mz](mailto:jorge.fringe@uem.mz)

Antecipadamente agradeço a sua cooperação

Cordiais saudações

  
Jorge Jaime Fringe

Prof WJ Fraser: Head: Department of Curriculum Studies  
Faculty of Education, Groenkloof Campus, cor Leyds and George Storrar Ave, Groenkloof, Pretoria 0181 South Africa;  
Tel (012) 420 2966; Fax (012) 420 3003

## Appendix I: Letter of lecturers' informed consent



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1938 - 2008



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

FACULTY OF EDUCATION

DEPARTMENT OF CURRICULUM  
STUDIES

### CONSENTIMENTO INFORMADO

Eu aceito participar no curso intitulado "Prática reflexiva" organizado como parte da pesquisa cujo título é "Reflexão crítica como princípio essencial no desenvolvimento profissional do pessoal académico no ensino superior", tal como está descrita na carta a acompanhar.

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ASSINATURA DO PARTICIPANTE: YPascoal

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