IMPLEMENTING A HOLISTIC MODEL THAT PROMOTES LEARNING STYLE DIVERSITY

by

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ABSTRACT

This mini-dissertation emerged as a result of my enrolment as a Master of Education student in the *Educator Professional Development* course at the University of Pretoria. The pedagogy of the programme enlightened me on the innovative and the most influential learning style theories internationally, consequently justifying the criteria for my professional development as a high school English educator. Developing effective strategies of facilitating learning and creating powerful learning environments are a continual challenge on the part of all education practitioners. This challenge defined the aim of my research, which is to implement effectively an innovative idea that encompasses a holistic learning model that promotes learning style flexibility, as we all have our specific preference in terms of how we learn.

The design of action research allowed for metalearning and it confirmed that my professional instruction and learning style complemented only a few learners in the class. I report empirically on the varied learning opportunities presented and the findings highlight that optimal learning can only be achieved if the diverse learning styles of the learners are accommodated and expanded. Moreover, learners have been armed with insight into their limitations and the way they learn best. As a result, they now have the foresight to maximise their learning by utilising varied learning styles in order to function as well-rounded learners, equipped with the skills for lifelong learning. This innovative model of holistic learning is corroborated by the metaphoric theory of Ned Herrmann who advocates that the brain comprises four quadrants, each with specialised functions linked to learning styles (Herrmann, 1996).

My goal as an education practitioner was aimed at finding ways to improve the learning strategies of my learners. I deemed it necessary to challenge myself as well as other facilitators of learning to review systematically methods of facilitating and assessing instruction and learning outcomes to enhance the performance of learners. These key learning strategies can be achieved by adapting this transferable and generic holistic learning model to learning environments.

Keywords: whole-brain theory; learning opportunity; Herrmann Brain Dominance Instrument (HBDI); action research; learning style diversity; facilitating learning; reflexivity; metalearning.

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CHAPTER 1: ORIENTATION TO THE STUDY

1.1 Introduction

This chapter explains the metaphor for my education practice; the rationale including the critical research questions; the theoretical framework and the research design that guided the development of the research process. It also provides an overall framework of what is explored in the successive chapters.

1.2 Metaphor for my Education Practice

One of the challenging and meaningful tasks I had to embark on during my study as a Master of Education student was to create a metaphoric symbol of my education practice. This task, facilitated by Professor P. H. du Toit, assisted in formulating my vision of my role as an education practitioner, culminating in the formulation of my research topic. The significance of metaphors in teacher education "provides a framework with which to assess teaching and a means for teachers to enhance self-awareness and professional development" (Lin, Shein & Yang, 2012:183). An exploration of metaphors linked to my education practice finally resulted in a zen garden to be considered as a symbolic representation of my ideal education practice.

Figure 1: A Zen Garden Collage

Source: http://www.fotosearch.com/photos-images/sen-garden.html

A zen garden illustrates “the underlying unity of the universe” and takes on the form of expression of the creator (Purkayastha, 1995:421) and in this case, the creator functioning as the learners in my class. Moreover, I see myself as a creator of my own learning and professional development in terms of creating and implementing my innovative idea. In Section 1.5 of this chapter I review the personal context that led to the development of the zen garden as a metaphor of my education practice.

The aesthetic appeal of a zen garden which is displayed via the different shapes such as rocks, water, and sand – that a learner may choose to use – emphasise a metaphoric awareness of the diversity of the learners and the varying combinations of learning styles that guide each learner. The complete structure and alignment of a zen garden could symbolically emphasise the need for a whole-brain or holistic model of learning styles, a concept created by Ned Herrmann (1981). He propounds that metaphorically the brain can be divided into four quadrants and that a person who has a strong preference to a particular quadrant will have a different learning style to another person whose preference lies in a different quadrant. Herrmann (1996) describes each quadrant as a model of learning styles which is explained in detail in Chapter 2 and 3. The construction of a zen garden involves not only the physical aspect, which in my case is the delivery of an innovative idea in the English classroom, but it combines the body, mind, spirit and soul which is similar to Howard Gardner’s (1983) theory of multiple intelligences that focuses on the premise that an educator acknowledges that every learner has innate talents and an educator should assist in enhancing these strengths.

A zen garden is a living work that is continuously changing and adapting, and is similar to the ever-changing world in which we live. This uncertain world is explained later in this chapter when I discuss the educational and scholarly context of teaching, with particular reference to education in South Africa.

Moreover, there are many worldly distractions (economic recession, stress, peer pressure, political uncertainty, popular culture, job security, civil strife and so forth) that may hinder the construction of the Zen Garden and ultimately the learning process, but one (educational practitioners and learners) should not allow these distractions to impede one’s progress. Rather an awareness of these distractions

should enhance the learning process by motivating one to continue on a learning path with integrity, curiosity and a sense of being, despite any impediments. This living work is similar to Whitehead and McNiff's (2006:2) "living theory" on action research that propounds that practitioners conduct their own research and generate their own living educational theories which is what I did when I reflected on the research data in Chapter 5. Furthermore, Whitehead and McNiff (2006:2) advocate that "these theories are living in the sense that they are our theories of practice, generated from within our living practices, our present best thinking that incorporates yesterday into today, and which holds tomorrow already within itself".

The creation of a zen garden allows for creativity, enjoyment, contemplation, a deeper understanding and a refinement of skills which is how one should handle the learning processes. A zen garden is a continual process and is never really finished and is similar to the concept of lifelong learning. My aim as an education practitioner is to be a mediator and to allow every learner an opportunity to be engaged in the learning process, and create opportunities for learners to establish and maintain their own zen garden, which should be innovative, authentic, original, and definitely not generic. At the same time I hope to create a similar zen garden that embraces my philosophy of lifelong learning and assists in my professional development.

A zen garden is a symbol of longevity like the learning process. It should not be forgotten but internalised and seen as an extension of ourselves. The use of bridges and other pathways in a zen garden reinforces the need for communication and collaborative learning.

The philosophy and process behind my teaching practice and learning processes can be best expressed through a quote by a Vietnamese Buddhist monk, Thich Nhat Hanh, who is a poet, a scholar, a peace activist and a Nobel Peace Prize nominee:

> "Whatever the tasks, do them slowly with ease, in mindfulness. Don't do any task in order to get it over with. Resolve to do each job in a relaxed way, with all your attention" (Thich Nhat Hanh, 1987).

Hence learning, that of learners in general, and my own professional learning in particular, should not be a chore, but an art form – each step and technique should

be carefully planned and executed in order to make sense of one's life according to one's own values and virtues.

1.3 Aim of my Research

When a colleague or a parent glibly states that a child is gifted, I endorse that all of us are gifted; some of us have just not realised our gifts as yet. This form of intellectual elitism can be debilitating to learners, and through action research I hoped to show that through hard work we can all optimise our learning strategies by utilising a holistic learning model, and every learner should have the opportunity to be considered gifted.

Hence the aim of this empirical study was to implement an innovative practice that included promoting greater flexibility in my teaching practice via a holistic learning model. My intention was to optimise the varied latent potential – talents and gifts – of my learners, while maintaining a learning style-balanced class that validated my metaphor for my education practice together with the claims I make (McNiff & Whitehead, 2006) and claims in terms of transforming (Du Toit, 2012) my practice.

For this holistic learning model to be viable, I had to consider the following:

i. Once I put into practice the proposed holistic learning model, which was underpinned by the work of Ned Herrmann (Herrmann 1995, 1996), I evaluated the implementation of the related principles as opposed to other learning style theories.

ii. I assessed my learning style and evaluated the implications of my learning style on my teaching practice. I ascertained my learning style profile by completing the Herrmann Brain Dominance Instrument (Herrmann International, 2013), which is a survey that profiles one's preferred learning styles.

iii. I established the learning styles of my learners and this was achieved via the use of Herrmann's (1996) *Turn-On Work* Indicator Map that assisted me in identifying their learning style preferences.

iv. I included learning opportunities with a view to promoting learning style diversity in my teaching practice, which inevitably contributed to my professional learning and development. I chose to use the construct *learning opportunity* as opposed to *lesson* as the latter is regarded rather as an integral part of the old paradigm. As I am focused on transforming my practice, I constantly remind myself that as a scholar one needs to change one's discourse, and instead support the principles of a new paradigm (Slabbert, De Kock & Hattingh, 2009) that promotes, *inter alia*, deep learning (Du Toit, 2004); constructivist learning (Maree, 2004; Gatt & Vella, 2003) and metalearning (Slabbert *et al*., 2009; Watkins, 2001). The notion of *unlearning* or transforming learning by adapting one's discourse is supported by Peck (1993:207) who states, "Taking risks of learning something new requires giving up of the old self and a death of outworn knowledge. To develop a broader vision we must be willing to forsake, to kill our narrower vision".

v. Through the learning opportunities created, learners were able to engage in metalearning. I needed to make these learners critically aware of their learning potential through the process of metalearning as well as task them with the responsibility of reflecting and managing their learning process, which underpins the philosophy of metalearning.

vi. Finally, by conducting this empirical study, I hoped to encourage other education practitioners to review systematically their methods of facilitating learning in order to enhance the performance of their learners. This could be actively achieved by adapting this transferable and generic holistic learning model to the instruction and learning environment.

1.4 Main Research Question and Sub-research Questions

The empirical study was guided by the following questions:

1.4.1 Main Research Question

How can I effectively implement a holistic learning model that promotes learning style diversity and maintains rigorous academic standards at high school level?

1.4.2 Sub-research Questions

i. Why is a holistic learning model the preferred learning model to facilitate learning?

ii. What is my learning style preference according to the Herrmann Brain Dominance Instrument (HBDI)?

iii. How does my learning style preference influence my teaching style?

iv. How do I activate and optimise a holistic learning model in my classroom practice and still maintain rigorous academic standards?

The above questions assisted me in remaining focused during the research process and justified the implementation of the empirical study.

1.5 Contextual Rationale

The rationale for this study is linked to three contextual factors that warranted the purpose of this research. My personal context, the educational context of South Africa in particular, and the scholarly context of education in general contributed to the overall framework of my research.

1.5.1 Personal Context

The metaphor for my educational practice identifies a zen garden as my teaching philosophy. I see each of my learners as having the potential and ability to construct a unique and creative zen garden that symbolises diversity, growth, inspiration, endurance, self-motivation and a spiritual understanding. Even though I validated

holistic and innovative learning as a desired practice, in my teaching practice I believed that I did my learners an injustice and denied them this right by not facilitating or assessing learning according to the different learning styles (Herrmann, 1995). This was of great concern to me, not only professionally, but on a personal level as well. As a result I also re-considered my values that were denied in my practice and perceived myself as a "living contradiction" (Whitehead, 1993:56).

Considering the reflection of my teaching practice, I deemed it imperative that action research, which is a preferred way of monitoring one's professional development (Du Toit, 2011), focused on an area of my profession, which I felt needed to be investigated and transformed (Du Toit 2012). Creswell (2008:4) emphasises that research contributes to our knowledge and he states the following two points about research:

> "It can also provide additional results to confirm or disconfirm results of prior studies. It can help add to the literature about practices that work or advance better practices that educators might try in their educational setting".

Consequently, this action research allowed me to validate the theory of holistic learning on a continuous basis by utilising the underpinned principles in my teaching practice, and to reflect critically on this practice in order to enhance my professional development and construct my personal education theory. The continuous nature of action research was evident throughout my professional learning journey – this being the reason for me referring to what I did in the past (reflecting on action), what is happening currently (reflection in action) and reflecting on how my professional learning will inform my practice in future. These stages of reflecting and self-discovery learning are aligned with the thinking of Schön (1987) who explores how people in particular, and how educators learn as reflective practitioners.

1.5.2 Educational Context

A brief commentary on the educational context that I find myself in – a product of the pre-apartheid educational regime and a post-apartheid educator – fuelled my desire for the enquiry about metalearning; in particular, the learning style discourse. This action research enquiry continues to influence me as it has become my professional metalearning process of choice.

The end of apartheid in 1994 allowed for the reformation of the South African education system. The previous paradigm did not encourage critical-thinking skills and creativity; instead learning content and regurgitating it accurately was rewarded. Vandeyar and Killen (2003:4) concur that "[a]ssessment in this paradigm was characterised by paper-and-pencil tests that emphasised academic exercises and the recall of textbook-based knowledge".

A renovated post-apartheid curriculum was needed to affirm the diversity of the people of South Africa. Launching the National Curriculum Statement (Curriculum 2005) was the proposed solution. By linking the principles of Outcomes Based Education (OBE) to the curriculum framework, varied responses from educators were elicited about curriculum reform: "a few teachers embraced the changes enthusiastically, many reluctantly accepted the changes, and most resisted" (Vandeyar & Killen, 2003:1 & 2). This posed a conundrum, as curriculum reform was imperative, yet was not embraced by many educators and as stated by the African National Congress [ANC] (1995:8), "almost any educational and training policy will come to grief if it does not win the support of two essential constituencies: those who are expected to benefit from it, and those who are expected to implement it".

Curriculum 2005 was later amended and the revised National Curriculum Statement (rNCS) was implemented, focusing on simplifying the 'bombastic' terminology and refining its design features, namely the learning outcomes, critical and developmental outcomes and assessment standards (Vandeyar *et al*., 2003:12, Department of Education, 2000:4). September 2010 included a further policy change to the rNCS with the introduction of the Curriculum and Assessment Policy Statement [CAPS] (DoBE: 2010).

Mseleku (DOE, 2003 in Pudi, 2006:9) believes that "teachers should be encouraged to be creative, imaginative and lead curriculum development" and not merely deliver content and assess learners. Pudi (2006:4) concurs by stating that, "[S]ometimes it becomes necessary to change the changes that have already been made. Like policies, teachers have to be flexible and adaptable to emerging needs". Hence my recommendation in the later chapters stresses the need for in-service training of educators whereby the theoretical components of learning styles as well as their

application in authentic learning environments should comprise part of the evolutionary change to the curriculum, similar to the evolutionary reform that was deemed necessary over the past twenty one years. My literature review and empirical study warrant the inclusion of the learning styles discourse as part of our transformative and progressive curriculum and ongoing professional development. Pudi (2006:11) strengthens this argument by stating that educators should develop lessons that adhere to curriculum stipulations, for example, "addressing the needs of the curriculum such as accommodating learners with diverse learning needs". Research by Du Plessis (2012) advocates that professional development for teachers should be available to teachers throughout their vocation.

The holistic learning model that I propose is compliant with South Africa's educational vision as iterated in the National Curriculum Statement (Department of Education, 2005) and allows for the integration of the Critical Cross-Field Outcomes (Department of Education, 2002) as this learning model promotes the holistic development of learners. It also accommodates the transition to the other curricular enterprise, the CAPS initiative that Maodzwa-Taruvinga and Cross (2012:20) term "emphasising implementation and teacher needs through the centrality of knowledge of subject disciplines".

1.5.3 Scholarly Context

Collaborative action research conducted by Adams (2000:1) was designed to investigate the efficacy of instruction and learning styles and he concludes his study by highlighting the strong correlation of instruction and learning styles linked to the performance of the learners involved. Adams (2000:2&3) asserts that "[b]y becoming more aware that there is a diversity of learning styles in our classroom, we will be better prepared to reach all students and not just those of our own teaching styles". Adams's (2000:4) study was carried out at a school in America and involved diagnosing instruction and learning styles based on the four different learning styles of Carl Gustav Jung together with the Learning Style Inventory and Teaching Style Inventory developed by Silver Strong and Associates. There are many theories advocating ways to diagnose learning styles (Coffield, Moseley, Hall & Ecclestone, 2004). However, many of the investigations and reports on learning styles are

conducted in an environment different to the social and historical echelons, educational reform and emerging curricular exclusive to the South African environment.

Creswell (2008:4) stresses that research should "add to the knowledge base and the existing literature". My action research process and outcomes reported in this study add to the current body of knowledge on learning styles and use action research as a constructivist, metalearning process for professional development. The constructivist theory is based on the premise that learning occurs as a result of "active construction" in which people are actively involved in creating knowledge and meaning making in a specific cultural or social context (Human-Vogel, 2004:25). Creswell (2008:608) states that "[a]ction researchers do not undertake this form of research to advance knowledge for knowledge's sake," so in a constructivist way, my meaning making was viewed from multiple perspectives including my reviewing of relevant literature, especially those on learning styles. Moreover, I tailor-made a viable and innovative practice that was based on the tenets of current literature and incorporated global trends while still epitomising and honouring the South African education curricula. My proposal of Herrmann's holistic theory is not considered "anachronistic in South African classrooms and context", a description that Chrisholm expressed to the Curriculum Review Committee when she described the facets of OBE 2005 (Maodzwa-Taruvinga & Cross, 2012:20). Ultimately, Herrmann's theory should contribute to the best practice for all South African schools.

In addition, Creswell (2008) lends credence to the scholarly rationale of my enquiry into learning style diversity. He elucidates that educators continually strive to improve practice. I intended to improve my practice by applying Du Toit's Asset-based Model (Du Toit, 2010) in which I investigated the implementation of an innovative idea and focused on my assets that included my instruction and learning style preferences and the talents and learning style diversity of my learners. I identified my innovative idea by framing it as research questions and investigated and monitored my professional development through the research design of action research. So, through the process of self-reflection, learner evaluation and collaborative engagement with my colleagues, I formulated my plan of action in response to my

research questions. Du Toit (2010:9) supports the collaborative initiatives by stating that "[s]elf-driven professional learning and learning collaboratively with other colleagues are essential for promoting a culture of professional learning and creating a learning organisation".

1.6 Research Theoretical Framework

In my classroom practice as a high school English teacher to learners in Grade 9, 10, 11 and 12, I had negated to embrace and promote the different learning styles of each learner in my classroom practice. The result of my action may have caused the learners to disengage with the learning process and I restricted the learners who were attuned to my teaching style from being challenged to use their other learning styles holistically.

There are diverse ways in which people learn; consequently, the role of a facilitator of learning [educator] (Slabbert *et al*., 2009) should be to ensure that every learner's individual learning style is acknowledged and maximised for the highest level of learning to take place. Moreover, learners should be challenged to develop other styles of learning in order to ensure developing their full potential – the ultimate aim of holistic learning.

Taking into account that educators as facilitators of learning are also professional learners, they may prefer to use a teaching style that complements their own learning preference and this may not necessarily be an effective approach for their learners whose learning style may be significantly different. Therefore it is imperative that both educator and learner adopt learning style flexibility in which different learning styles are incorporated, and the flexibility of these styles are promoted and enhanced.

Du Toit (2004:154) states that educators should challenge learners by removing them from their "comfort zones or preferred ways of doing" and one way of achieving this is through Herrmann's theory of learning styles that focuses on how people learn, in particular, in a schooling context.

In order for me to transform my teaching strategies by discovering the best practice of my innovative idea, I needed to be guided by the internationally recognised and

relevant theories, such as Gardner's multiple intelligences (Gardner, 2006), the constructivist paradigm (Adams, Collair, Oswald & Perold, 2004) and metalearning (Biggs,1985). My aim was and still is to offer learners the opportunity to realise their true potential that can be actively achieved by applying the principles of learning styles, as applicable to Herrmann's theory of learning styles (Herrmann, 1996).

As a Master of Education student in Educator Professional Development, I was reintroduced to action research and the theories of learning styles. Intensive and challenging modules that formed part of the coursework motivated me to execute this action research in order to restore harmony between my values and practice. Moreover, it afforded my learners the best possible learning opportunities by making them realise their highest learning potential through lifelong, holistic learning, irrespective of cultural, socio-economic and other contextual factors. Du Toit (2010:9) endorses action research by stating that "[i]t is simply a way that one would regard as a good way of living or a lens for looking into one's living out of values, what one believes in and ensuring that one does not 'live a lie' as far as one's values are concerned".

My challenge as a facilitator of learning is not merely to be aware that each of my learners learns in diverse ways, but to create learning opportunities that offer them a variety of tasks optimising their learning, and creating holistic and balanced learners. My action research, through the collaborative process of colleagues and learners, assisted in monitoring my self-development. Also, it allowed me to create meaningful learning opportunities in order to implement a holistic learning model incorporating common values such as justice, freedom and democracy, which for the purpose of this study, were translated into my educational values.

I used the opportunity of executing an action research project to assess my compliance with the seven roles for educators as outlined by the *Norms and Standards for Educators* (Department of Education, 2000) in my teaching practice. Finally, the research sub-questions guided me in the sense that they:

- assisted in my understanding of a holistic learning model;
- assisted in the reflection of my current learning style and style of facilitating and assessing learning;

- assisted in my understanding of transforming my teaching practice;
- assisted in my understanding of my learners' learning styles;
- allowed for the implementation of an innovative idea in my teaching practice while still maintaining rigorous academic standards according to the criteria outlined by the CAPS document, Independent Examination Board (IEB) and other stakeholders;
- allowed for a self-analysis and an assessment of my transformed practice and reflected critically on the educational value of holistic learning.

The intervention of reflexivity, through action research, allowed me to reflect meaningfully on my teaching and professional learning processes, and assisted in developing my scholarship of teaching so that active and effective learning was optimised. Hence the aim of my action research initially was and still is to promote greater flexibility in my teaching practice by investigating an innovative idea that optimised the varied talents and gifts of my learners, and maintained a holistic and learning style-enhanced class.

I realised that I could no longer use a visceral approach to my practice and had to start positioning my practice so that it reflected a multidimensional approach. In order to achieve this, I had to link my practice so that it took into cognisance an array of theories that would allow me to enhance my role as a facilitator of learning and successfully employ a systemic approach to my practice. These theories are briefly explained in the latter part of this chapter.

1.6.1 Action Research

Action research is a self-reflective process that allows a practitioner or facilitator of learning an opportunity to conduct research by enquiring about his or her teaching practice in a professionally systematic way. It is not about finding out what is wrong with one's practice, but rather a search for knowledge about how to improve one's practice through one's own skills, techniques and strategies. Action research is a deliberate, solution-orientated investigation that is group or personally owned and conducted, in which all participants are equal learners (McNiff, 2002). It is further advocated by McNiff (2002) that action research allows for collaborative learning and for practitioners to live according to their values.

The linking of the terms *action* and *research* highlights the essential features of this method: trying out novel and innovative ideas in one's practice as a means of increasing knowledge about or improving curriculum, instruction and learning (Kemmis & McTaggart, 1988). Some of the reasons for performing action research are to promote personal and professional growth; to improve practice (or transform practice advocated by Du Toit 2012); to enhance student learning to advance the teaching profession (Johnson, 1995) and appraisal of educators' performance (McNiff, 2002).

Through the research design of action research, practitioners have to evaluate, modify their actions if necessary, and justify what they are doing on a continuous basis, and this affords them the opportunity to be accountable and accept responsibility for their action and the way they think (McNiff, 2002).

Consequently, action research is the paradigm that framed my enquiry as confirmed by many prolific researchers as it provided a useful framework for practical and critical research investigations in the educational sector (Du Toit, 2010; Creswell, 2008; Hooley, 2005; Burton & Bartlett, 2005; Biggs, 2003; McNiff, 2002; Zuber-Skerritt, 1992). The tenets of action research and action learning are to "promote empowerment of the staff, challenge historical ways of working and positively influence the culture to make it more open to emergent change" (Thornton, 2010:297).

In addition, action research focuses on self-enquiry, lifelong and reflexive learning and monitoring one's professional development in a systematic way (Du Toit, 2010). Taking into cognisance my contextual rationale, the paradigm of action research was compatible with the factors espoused in my rationale and assisted me in continuously generating my practice theory – a means of scholarly lifelong learning.

In order to assist with my self-reflection, as part of my action research, I created a Transformative Action Research Model for Continued Professional Educator Development, outlining my aspiration for continued professional educator improvement. There are many learning models that have developed over the years since the inception of action research from the works of Kurt Lewin in the 1940s.

I was inspired to create my own action research model after reviewing Du Toit's (2008) non-linear Visionary Action Research Model, depicted in Chapter 3, Figure 10, adapted from the work of Mcniff (2002) and Zuber-Skerritt (1991), as it promotes continual reflection and professional development.

I applied the principles of action research in order to analyse and evaluate my data with the aim of innovating my existing practice or "radically transforming it" and made use of the steps outlined by Du Toit (2010:14-21). As his model focuses on assessment practice *per se*, I adapted it to fit my entire practice that included facilitating and assessing learning. These steps are explained in detail in Chapter 3.

The principles mentioned by Du Toit (2008) are reflected in the work of Hitchcock and Hughes (1995:27) who advocate that,

> "[t]he principle features of an action research approach are change (action) or collaboration between (practitioner-) researchers and research. Action researchers are concerned about improving a situation through active intervention and in collaboration with the parties involved".

Bearing this in mind, I used a variety of data collection techniques that generated qualitative and quantitative data to enhance my action research approach. I reflected on my practice on a continuous basis through the critical feedback from learners in my class by using a Learner Feedback Questionnaire as well as feedback from my colleagues in the educational sector; personal notes; by completing the Herrmann Brain Dominance Instrument (HBDI), a 120 question survey (See Appendix 1), which profiled my learning style; and Herrmann's (1996) *Turn-On Work Indicator Map* which profiled my learners' learning styles.

I regard action research as a justifiable scholarly intervention as it allowed me to ask pertinent questions about my practice as a Master of Education student and as a facilitator of learning, and allowed me to discover answers for myself through critical reflection. In addition it allowed me to conduct my research within a framework that allowed for the compatibility of my educational value system and my professional integrity. It is a "powerful methodology for personal and social renewal" (McNiff, 2002) and I intended to assess and modify my practice during the execution of an

action research spiral. Moreover, after implementation, I would critically reflect on the outcome of each cycle that formed part of my transformative professional learning.

1.6.2 The Roles of Educators or Facilitators of Learning

The *Norms and Standards for Educators* (South Africa, 2000) defines the seven roles of educators and provides an outline of the applied competencies that underpin each role. The list of roles and the applied competencies serve as a description of what is required in order to be a competent educator. It is national policy that the different roles of educators should be developed and assessed. These roles are linked to the registration of qualifications on the National Qualifications Framework (NQF) and educators need to demonstrate the integration of these competencies in the offering of any learning programme or learning opportunity. They also need to implement the roles responsibly and effectively in their educational practice.

As a facilitator of learning, in the South African context, I needed to be compliant with these seven roles for educators as I am required to implement all these roles to the best of my ability. In particular, one of the roles of a facilitator of learning should be to function as a learning mediator. Such a mediator should take into cognisance that every learner has varied learning preferences and learns at his/her own pace. Furthermore, the mediator needs to take these preferences into account when designing learning opportunities that encompass the second role for facilitators of learning, namely that of interpreter and designer of learning programmes and material. Accommodating the various learning styles and multiple intelligences not only promotes human diversity but also enhances learning style flexibility on the part of the facilitator of learning and the learner, inevitably encouraging us to be whole-brain collaborators (Du Toit, 2004). In this way a holistic learning model is endorsed, which is what I advocate.

1.6.3 Theories of Learning Styles

I intended to provide my learners with learning opportunities that allowed for creativity, enjoyment, growth, a deeper understanding and a refinement of skills, which is how we should handle our learning processes. Consequently, since a holistic or integrated learning model was what I advocated, this model should also encompass an integration of a whole-brain model of learning styles in an optimal,

practical and meaningful way by focusing on the following goals (Silver, Strong & Perini, 2000; Du Toit, 2010):

- **Effectiveness**, in terms of maximising the benefits of learning styles and minimising the deficiencies of both multiple intelligences and learning styles.
- **Practicality**, in terms of assisting with the demands that are placed on facilitators of learning from parents, learners or the school in order to present engaging and practical learning opportunities and still adhere to high academic standards.
- **Fairness**, in terms of being compliant in promoting human diversity through academic diversity.
- **Self-regulated learners**, in terms of developing independent learners who are competent in monitoring their own learning.

Therefore, in order to accommodate the various learning styles referred to as learning style flexibility, I needed to take into cognisance the above goals to guide my teaching practice.

1.6.4 Herrmann's Whole-Brain Model

To date, there are a range of learning theories, each with its own strengths and limitations promoting the diverse ways in which learners learn. However, a report on *Learning styles and pedagogy in post-16 learning* (Coffield *et al.*, 2004) enlightened me on selecting the learning style theorist who would best complement my research and practice. This report (Coffield *et al.*, 2004) scrutinised 13 of the most leading models of learning style and rigorously evaluated fundamental learning style models applicable to different learning environments. The research confirmed that Herrmann's whole-brain learning model is invaluable and transferable as it has been applied in various contexts including "personal growth, counselling, group processes, teaching and learning, decision making and management" (Coffield *et al.*, 2004:77).

The instrument that Herrmann utilises in order to profile one's learning or thinking styles is known as the Herrmann Brain Dominance Instrument [HBDI] (Herrmann International, 2013). This tool illustrates how people have a stronger preference to learn according to two or more of the four proposed quadrants and in this way differ in their approach to learning (Coffield *et al.*, 2004). This instrument quantitatively

displays one's degree of learning style preference for each quadrant and not one's intelligence or aptitude. It comprises a survey consisting of 120 items (See Appendix 1) and when analysed, the results are displayed on a four-quadrant grid that corresponds to the four-thinking or learning structures of the brain (See Figure 5.1, 5.2, 5.3 and 5.4 in Chapter 2 for a detailed analysis). Herrmann (1989) recommends that individuals develop flexibility in their thinking or learning styles rather than their preferred or natural way of learning.

Consequently my research focused on Herrmann's theory of learning styles (Herrmann, 1996) that provided the tools and the techniques for the practical professional development of my instruction and learning and which inevitably translated into heightening the creativity and productivity of not only me, but my learners as well.

1.6.5 Theoretical Lens

I filtered the empirical data that I received from my action research through a theoretical lens in order to assist me in evaluating my educational practice. This assisted in channelling my research in a systematic way. This theoretical lens guided me in selecting, analysing and interpreting the relevant data. The results that emerged were invaluable as they offered me the insight to reflect on my professional teaching practice and make crucial adjustments.

It was apparent that the inclusion of different learning styles was fundamental in the learning process and my literature review in Chapter 2 justified Ned Herrmann's theory as the best practice for promoting learning style flexibility, yet still maintaining rigorous academic standards.

The theoretical lens for understanding my research was that of dispositional theory (Perkins, Jay & Tishman, 1993) and action research. Dispositional theory is based on the work of Perkins *et al*. (1993) who emphasise that good thinkers are able to process and make sense of different forms of information because they are equipped with certain dispositions. Perkins *et al*. (1993) point out that critical-thinking dispositions occur as a result of a sensitivity to particular behaviour and as one practices a sensitivity, one becomes more comfortable with using a specific type of behaviour and with favourable factors, this sensitivity could become a fully-fledged

ability. One of the favourable factors could be the role of the facilitator of learning to accommodate learning styles and enhance learning style flexibility in order to diversify the learning experiences of all learners.

Therefore it was apt that dispositional theory provided a lens through which to explore my research. Hence a sensitivity may lead to a learner's use of varied learning styles, especially his or her less dominant learning style and the learner could become more comfortable with using this style in various contexts, provided that favourable conditions exist. Silver *et al*. (2000:27) concur by defining a disposition as beginning with "a sensitivity to certain types of input that can become an inclination for a certain type of behaviour and, finally can be refined so that the individual develops an ability to apply the behaviour in diverse and meaningful ways".

As part of my action research I prepared learning opportunities that encompassed the four quadrants of the brain and incorporated multiple intelligences. Effective learning can take place only when the whole brain is involved, so my focus entailed creating learning opportunities that employed all four modes of the brain and in this way it allowed the learners' preferred learning styles to be "accommodated" and their less preferred learning styles to be "utilised" (Du Toit, 2004:151). All facilitators of learning should be aware that each learner has a different combination of these learning styles and the facilitator of learning should afford every learner the opportunity to enhance his or her learning styles, especially the less developed ones.

Consequently the merging of these theories, thus creating a holistic approach to instruction and learning, allowed facilitators of learning and in particular me, to foster human diversity and maintain rigorous academic standards. This holistic learning strategy allowed learners to feel that they were valued and to realise their full potential in order to succeed by becoming reflexive and critical learners (Silver *et al*., 2000).

1.7 Conclusion

This chapter provides an overview of the orientation to my study, highlighting the factors that catalysed the initiation of my research and that channelled the focus of my main research question. The theoretical framework and an introduction to the various learning theories that informed my research are explored.

Chapter 2 garners the Literature Review that provides a detailed analysis of the various theories linked to learning styles, multiple intelligences and my research. The intensive study of the diverse learning theories allowed me to make an informed decision to integrate the most viable learning theories to be implemented in my teaching practice.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter critically reviews the literature on two leading learning models and examines the process of selecting the most suitable and rigorous learning model that is transferrable to the high school learning environment and warrants professional development. Du Toit (2004) asserts that Kolb's learning theory complements the theory of Herrmann, which deemed the investigation of both learning theories indispensable in order to select an apt and viable model for the intended study.

2.2 A Range of Learning Style Models

I have come to realise that if we (education practitioners) want to improve the way learners learn, if we want better academic results and if we want to create holistic learners we need to understand how we and our learners learn. This entails identifying the learning styles of both the learners and the practitioner. Once identified, the practitioner needs to encourage learning style flexibility by creating learning opportunities that reflect varied learning styles and develop independent lifelong learners.

However, there is an array of learning style models to select from and a process of trial and error was not feasible for the small-scale study on which I had embarked. To refine the complex research field, Coffield *et al*. (2004) compiled a report titled *Learning styles and pedagogy on post-16 learning: A systematic and critical review* in which they identify 71 models of learning style and from these models, they categorise and examine the 13 most influential ones (See Appendix 2). Their review was strengthened by allowing the authors of the various models to comment on the report before it was published. The deficiencies and the merits of the learning models prevalent in the report assisted me in channelling my research and in selecting a learning model that enriched my teaching practice and was of benefit to all of my learners.

2.2.1 Kolb's Learning Style Model

One of the leading models of learning for the past three decades is Kolb's (1985) Experiential Learning Model (ELM) with its impetus on classroom practice and

professional education (Du Toit, 2004; Armstrong, 2000; Healey & Jenkins, 2000; Philbin, Meier, Huffman & Boverie, 1995; Sims & Lindholm, 1993; Rakoczy & Money, 1995; White, 1992). Kolb further contributed to the academia by devising an instrument called the Learning Style Inventory (LSI) in order to test his theory. He espoused that "learning is the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping experience and transforming it" (Kolb, 1984:41).

Kolb diagrammatically represents the ELM in the four-stage cycle below:

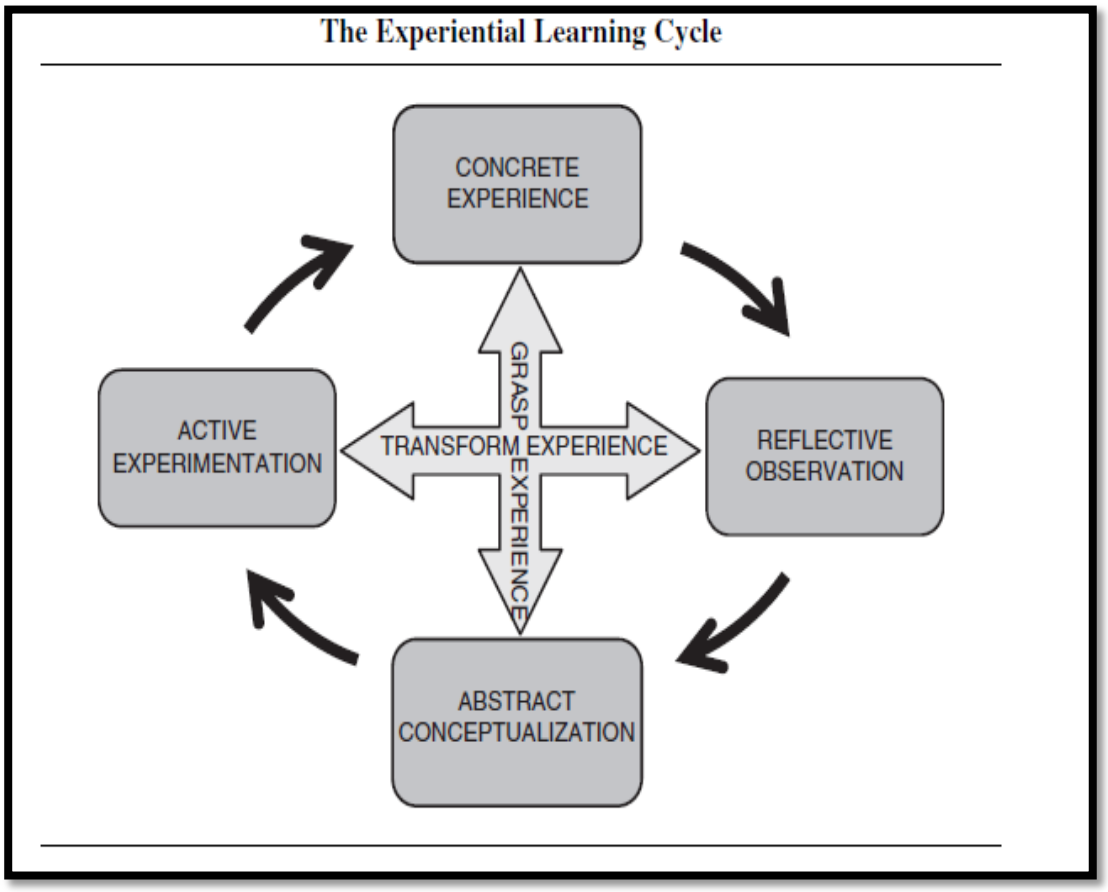


Figure 2: The Experiential Learning Cycle

Source: Kolb A, Kolb D (2009:299)

The cycle identifies the various stages of learning, starting with Concrete Experience that is the first stage a learner experiences when acquiring information. The second stage is Reflective Observation in which the learner reviews or reflects on the experiences from different perspectives. The third stage of Abstract

Conceptualisation occurs when a learner creates generalisations that allow one to develop theories from one's observations or experiences. Finally, the fourth stage of Active Experimentation allows a learner the opportunity to implement what he or she has learned during the Abstract Conceptualisation stage.

The following Table represents Kolb's characteristics of the four stages of the learning cycle:

Table 1: Kolb's Four Stages of the Learning Cycle

Source: Adapted from Du Toit (2004:154-155)

	CONCRETE EXPERIENCE (CE)	REFLECTIVE OBSERVATION (RO)	ABSTRACT CONCEPTUALISATION (AC)	ACTIVE EXPERIMENTATION (AE)
CHARATERISTICS OF EACH STAGE	LEARNING FROM FEELING ▪ Learning from specific experiences ▪ Relating to people ▪ Being sensitive to people and their feelings	LEARNING BY WATCHING AND LISTENING ▪ Carefully observing before making judgements ▪ Viewing issues from different perspectives ▪ Looking for meaning	LEARNING BY THINKING ▪ Logically analysing ideas ▪ Systematic planning ▪ Acting on an intellectual understanding of a problem	LEARNING BY DOING ▪ Being constructive ▪ Taking risks ▪ Influencing people and events through action

Kolb (1976:23) further states that there are four basic types of learning style that are components of the ELM:

Type 1: Converging style

Type 2: Diverging style

Type 3: Assimilating style

Type 4: Accommodating style

The converger tends to be interested in active experimentation and prefers using deductive reasoning in which he or she focuses on a particular problem. Divergers can be considered the opposite to convergers. They prefer concrete experiences and reflective observation and tend to be interested in people. Assimilators prefer to create models and use inductive reasoning. Accommodators prefer concrete experience and tend to take risks (Sternberg, 1997:145). A holistic or well-formed learner functions optimally in all four stages. Figure 3 combines Kolb's four stages in a learning cycle with Kolb's four learning styles.

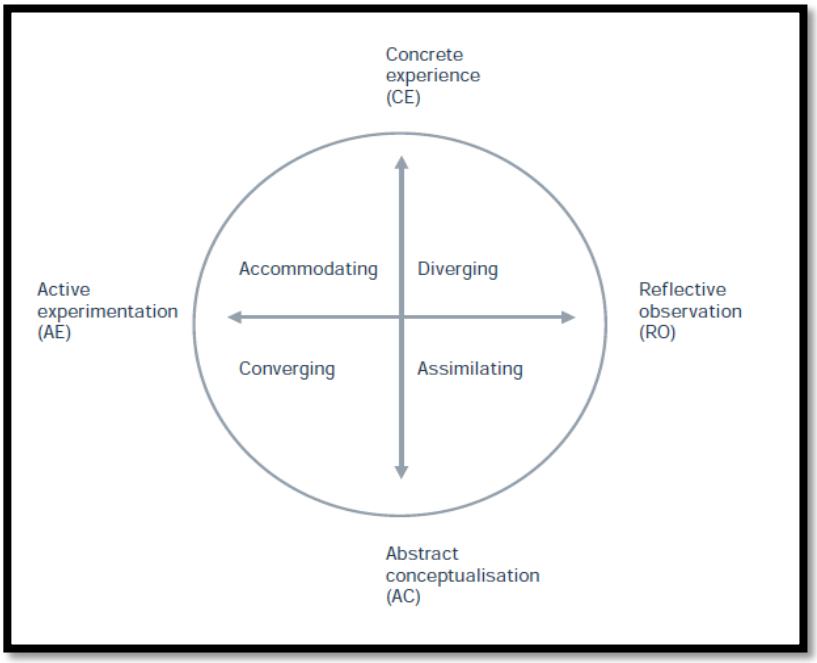


Figure 3: Kolb's learning cycle and learning styles. Adapted from Kolb (1984)

Source: Coffield *et al*. (2004:71)

A brief description of the main characteristics of Kolb's (2000:5) four learning styles is presented next.

2.2.1.1 Type 1: The Converging Style

Learners favouring this learning style move through the stages of Abstract Conceptualisation (AC) and Active Experimentation (AE) in the learning cycle in order to understand an experience, problem, concept or situation. They are competent problem solvers and decision-makers and prefer presenting ideas in a practical way rather than dealing with interpersonal relationships or collaborating with

people. They prefer to work independently by thinking about an idea, then putting it into practice. Their skills are valued in the field of technology and related specialist areas in which objectivity rather than emotion and subjectivity is valued.

2.2.1.2 Type 2: The Diverging Style

These learners move through the stages of Concrete Experience (CE) and Reflective Observation (RO) in the learning cycle in order to understand an experience, problem, concept or situation. They learn best by visualising and observing and then reflecting on the tangible experience. They are imaginative and analyse a situation from multiple perspectives in order to make meaningful decisions that are value-based as they tend to be people-centred. In this way they diverge from an experience and consider diverse possibilities that are constructive to the people involved. They embrace positive feedback and prefer to observe rather than to take action while avoiding conflict as far as possible. Their skills are embraced in the Arts and community-based jobs in which feelings and imagination are considered significant.

2.2.1.3 Type 3: The Assimilating Style

These learners move through the stages of Reflective Observation (RE) and Abstract Conceptualisation (AC) in the learning cycle in order to understand an experience, problem, concept or situation. These are the learners who prefer making decisions based on logic and validation and learn best when lectured or acquiring information from experts in their field. They can process an extensive scope of information and can compartmentalise these in a logical and succinct manner. Abstract ideas that are logical are deemed more valuable than working with people. Their skills are appreciated in the fields of science and research.

2.2.1.4 Type 4: The Accommodating Style

These learners move through the stages of Active Experimentation (AE) and Concrete Experience (CE) in the learning cycle in order to understand an experience, problem, concept or situation. This type of learner learns best by involving him- or herself in the experience and embracing new challenges. Actions are more spontaneous rather than carefully or logically planned. In order to resolve

problems, this learner tends to rely on people rather than on expert knowledge and is willing to take risks. Careers related to people and marketing, value this type of learner.

In recent amendments to Kolb's theory, he introduced three orders of learning style (Kolb, Boyatzis & Mainemelis, 2001). The first order comprises the four basic types of learning style discussed earlier in the chapter: diverging, assimilating, converging and accommodating. The second order allows for the combination of these learning styles: the assimilating and converging styles. Finally, the third order focuses on individuals who are holistic learners and are able to assimilate the four learning styles. The focus of my research pertained to the third order as I intended to promote holistic learners who were learning style-balanced learners and could adapt competently to various learning environments. Although Kolb's learning style model complements the work of Herrmann's learning theory, the limitation of Kolb's theory is that "[e]xploratory research into these second- and third-order styles has only just begun and there are no systematic studies as yet" (Coffield *et al*., 2004:63). In addition Coffield *et al*. (2004) summarised the strengths and weaknesses of Kolb's Learning Style Inventory (LSI). It is the weaknesses of Kolb's LSI that dissuaded me from selecting this learning model as a viable study for my action research.

Table 2: Kolb's Learning Style Inventory (LSI)

Source: Coffield *et al*. (2004:71)

	STRENGTHS	WEAKNESSES
GENERAL	▪ Learning styles are not fixed personality traits, but relatively stable patterns of behaviour. ▪ 30 years of critique have helped to improve the LSI, which can be used as an introduction to how people learn.	▪ Should not be used for individual selection.
DESIGN OF THE MODEL	▪ Learning styles are both flexible and stable. ▪ Based on the theory of experiential learning which incorporates growth and development.	Three elements need to be separated: ▪ Process = the four stages of the learning cycle ▪ Level = how well one performs at any of the four stages ▪ Style = how each stage is approached.

RELIABILITY	Changes to the instrument have increased its reliability.	Long, public dispute over reliability of LSI. Third version is still undergoing examination.
VALIDITY		▪ The construct validity of the LSI has been challenged and the matter is not yet settled. ▪ It has low predictive validity, but it was developed for another purpose – as a self-assessment exercise.
IMPLICATIONS FOR PEDAGOGY	▪ In general, the theory claims to provide a framework for the design and management of all learning experiences. ▪ Teachers and learners may be stimulated to examine and refine their theories of learning; through dialogue, teachers may become more empathetic with learners. ▪ All learners to become competent in all four learning styles (active, reflective, abstract and concrete) to produce balanced, integrated learners. ▪ Instruction to be individualised with the help of IT.	▪ The notion of a learning cycle may be seriously flawed. ▪ The implications for teaching have been drawn logically from the theory rather than from research findings.
EVIDENDE OF PEDAGOGICAL IMPACT		▪ There is no evidence that 'matching' improves academic performance in further education. ▪ The findings are contradictory and inconclusive. No large body of unequivocal evidence on which to base firm recommendations about pedagogy.
OVERALL ASSESSMENT	One of the first learning styles, based on an explicit theory. Problems about reliability, validity and the learning cycle continue to dog this model.	
KEY SOURCE	Kolb 1999	

2.2.2 Herrmann's Whole-Brain Model

Ned Herrmann classified his learning theory as the whole-brain model in which he metaphorically considers the brain to consist of four quadrants of thinking styles or learning styles in which each quadrant has a specialised thinking structure.

The whole-brain or holistic model is a merger of the following quadrants (Herrmann, 1996:6):

- The A-quadrant Analyser:
  Logical thinking, analysis of facts, processing numbers.
- The B-quadrant Organiser:
  Planning approaches, organising facts, detailed review.
- The C-quadrant Personaliser:
  Interpersonal, intuitive, expressive.
- The D-quadrant Visualiser:
  Imaginative, big picture thinking, conceptualising.

Herrmann's (1996) theory evolved from the work of Roger Sperry and Paul MacLean. Sperry proposed that the brain was divided into a left and right hemisphere, each with specialised functions and Paul MacLean developed the Triune Brain Model. It is the theories of Sperry and MacLean that influenced Herrmann to create a four-part model that represents the whole-brain theory. According to Herrmann (1996:15), "[t]his four-quadrant model serves as an organizing principle of how the brain works: four thinking styles metaphorically representing the two halves of the cerebral cortex (Sperry) and two halves of the limbic system (MacLean)".

The specialised functions of the left and right hemisphere are listed in the table which appears next.

Table 3: Specialised functions associated with each brain hemisphere (adapted from Trotter, 1976)

Source: Du Toit (2004:148)

LEFT HEMISPHERE	RIGHT HEMISPHERE
Speech/verbal	Spatial/music
Logical, mathematical	Holistic
Linear, detailed	Artistic, symbolic
Sequential	Simultaneous
Controlled	Emotional
Intellectual	Intuitive, creative
Dominant	Minor (quiet)
Worldly	Spiritual
Active	Receptive
Analytic	Synthetic, gestalt
Reading, writing, naming	Facial recognition
Sequential ordering	Simultaneous comprehension
Perception of significant order	Perception of abstract patterns
Complex motor sequences	Recognition of complex figures

The whole-brain learning model (Hermann, 1996) establishes the specialised functions associated with the left and right hemisphere of the brain. The left hemisphere is logical, analytical, quantitative, rational and verbal, whereas the right hemisphere is conceptual, holistic, intuitive, imaginative and non-verbal (Du Toit, 2004:149). Herrmann (1996) emphasises that even though these hemispheres have different functions, they are linked as a result of physical connections that ensure an integrated brain activity (Du Toit, 2004).

Figure 4 provides a visual representation of Herrmann's whole-brain theory. The four quadrants are different clusters of cognitive functions or learning (thinking) structures of the brain. The top two quadrants of the left and right hemisphere represent the cerebral mode, and the lower two quadrants of the left and right hemisphere represent the limbic mode that incorporates visceral or feeling-based processes.

One may have a particular preference for one quadrant and this is regarded as a strong or dominant preference. A preference develops as a result of an attraction or aversion to each of the descriptors that characterises each quadrant (See Figure 4). Herrmann (1996:20) asserts that "[m]ental preferences can lead to 'turn-on' work and avoidances to 'turn-off' work", hence being 'turned on' is considered highly motivational and being 'turned off' is considered discouraging or daunting.

Having holistic or learner-style flexibility is preferable to possessing a dominant preference or preferences. Although each quadrant has its advantages, it also contains limitations and extensive research demonstrates that optimal learning occurs when the whole brain is activated during the learning process (Du Toit, 2004; Knowles, 1990; Buzan, 1991; Ornstein, 1997). In order to activate whole-brain or holistic learning, all four quadrants need to be triggered and this is illustrated in Figure 4 that forecasts Herrmann's whole brain instruction and learning model that promotes learning style flexibility.

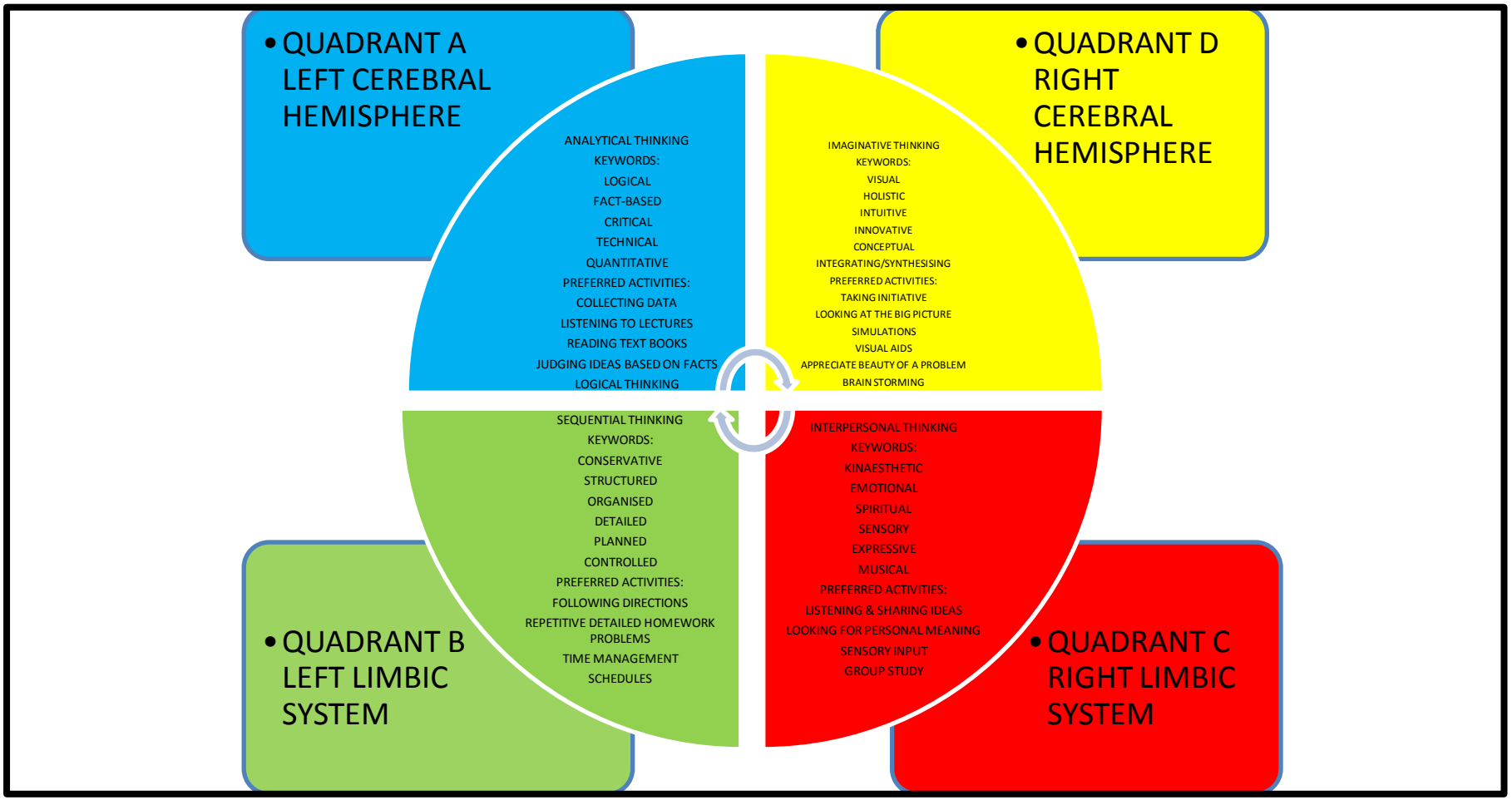


Figure 4: Herrmann's Whole-Brain Model
Source: Herrmann (1996)

Once one has completed the HBDI which is explained in Chapter 1, one is grouped into the following principle profiles (Herrmann International, 2004):

- Single Dominant Profiles
- Double Dominant Profiles : Left or Right
- Double Dominant Profile: Upper and Left
- Double Dominant Profile: Diagonal
- Triple Dominant Profiles
- Quadruple Dominant Profiles

The single dominance diagrams (Figures 5.1, 5.2, 5.3, 5.4) highlight the dominant thinking/learning preference prevalent in each quadrant. Keywords are listed in Figure 4 that describes the learning style of one who prefers thinking or learning in a specific quadrant.

In order to create the visual representation of one's profile, the HBDI needs to be administered, followed by the evaluation of an accredited HBDI specialist. A Data Summary sheet is provided that gives one the scores one has selected in each quadrant (See Appendix 3 to view my Data Summary sheet). These scores are then tabulated in four columns that represent the quadrants A, B, C and D from left to right. The A and B column characterise the left brain mode. The C and D columns represent the right brain mode. Four percentages are represented on the four cardinal points of the graph and these represent the preferences for the Left, Right, Upper and Lower modes. The Left mode comprises the A and B quadrants that metaphorically represent the left half of the brain's limbic system and cerebral cortex. The Right mode comprises the C and D quadrants that metaphorically represent the right half of the brain's limbic system and cerebral cortex. The Upper mode, consisting of quadrants A and D, represent the cerebral hemisphere metaphorically. Finally, the Lower mode merges the B and C quadrants, which represent the right and left halves of the limbic system metaphorically (Herrmann International, 2004).

The profile scores reflected in the Data Summary sheet are graphically represented along the diagonal axes. A range of 0 to approximately 130 is represented from the radius to the circumference. Herrmann (2004) allotted the terms Primary, Secondary and Tertiary, the Code 1, 2 and 3 respectively in order to indicate the preference codes of an individual.

A Primary preference that is designated as Code 1 refers to the profile score with a total over 66 and a score over 100 indicates a very strong preference. A primary quadrant is indicated by a heightened or dominant preference for the related activities specific to that quadrant. Every profile indicates at least one primary score that is represented in the Single Dominant profiles in Figures 5.1, 5.2, 5.3 and 5.4. However, a profile could also have 2, 3 or 4 primary preferences representing a Double Dominant profile: left or right mode; upper and left mode; diagonal; triple dominant and quadruple dominant profiles.

A Secondary preference Code 2 refers to the profile score of 34 to 66. A secondary rating indicates a 'comfort zone' in relation to the type of activities affiliated with this quadrant (Herrmann, 2004:5). It is still a preference but not as distinct as a primary or multiple primary preference codes.

A tertiary preference that is designated as Code 3 refers to the score of 0 to 33. An individual with this preference code will avoid activities prevalent in this quadrant as there is a lack of preference.

An explanation of the Single Dominant profiles in each quadrant is provided next.

People with an A quadrant dominance are analytical thinkers who could be described as having some or all of the key descriptors: logical, fact-based, objective, analytical, quantitative, critical and technical. Even if the situation contains dialogue that is subjective in nature, this individual will be able to extrapolate facts and analyse the situation in a logical and rational manner. His or her preferred activities could include collecting data, reading textbooks and listening to informative lectures. Figure 5.1 represents a quadrant A dominant profile, visually plotted.

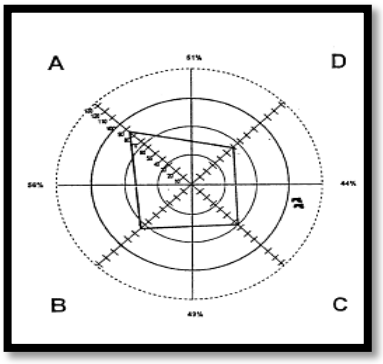


Figure 5.1 A quadrant thinking preference

Source: De Boer & Van den Berg (2001:127)

Quadrant B learners are sequential thinkers who could be described as conservative, structured and organised. Their preferred activities may include following directions, time management projects and work related to schedules and planners. Learners operating in this quadrant do not like transformation and prefer maintaining the status quo.

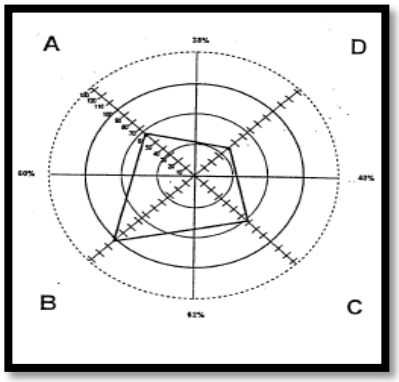


Figure 5.2 B quadrant thinking preference

Source: De Boer & Van den Berg, (2001:127)

C-quadrant dominant learners are interpersonal thinkers who are kinaesthetic, emotional and spiritual. Their preferred activities range from listening, sharing ideas and stories during activities involving group study and interpersonal experiences.

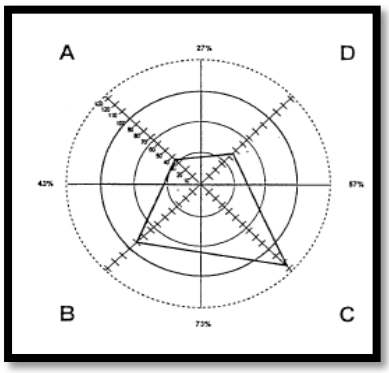


Figure 5.3 C quadrant thinking preference

Source: De Boer, & Van den Berg, (2001:127)

A preference for the D-quadrant entails learners who are imaginative thinkers. They display characteristics of integration, holism, visualising, innovation and intuition. Their preferred activities include brainstorming and simulations.

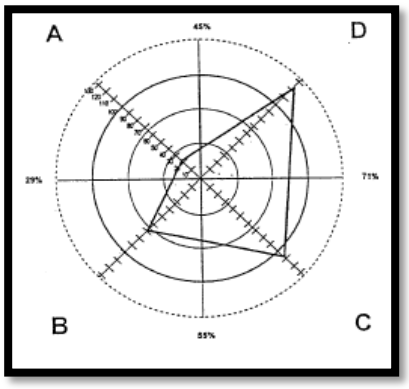


Figure 5.4 D quadrant thinking preference

Source: De Boer, & Van den Berg, (2001:127)

For a detailed explanation of the other principle profile groupings one should refer to Appendix 5.

Coffield *et al*. (2004:84) summarise the strengths and weaknesses of Herrmann's Brain Dominance Instrument (HBDI). The strengths and the overall assessment of the model outweigh the weaknesses, consequently rendering this learning model as a viable study for my action research.

Table 3: Herrmann's Brain Dominance Instrument (HBDI)

Source: Coffield (2004:84)

	STRENGTHS	WEAKNESSES
GENERAL	▪ The HBDI and new ways of using it effectively have been developed over more than 20 years. ▪ The 'whole-brain' model is compatible with several other models of learning style.	
DESIGN OF THE MODEL	▪ It is based on theory which, although originally brain-based, incorporates growth and development, especially in creativity. ▪ Learning styles as defined by the HBDI are not fixed personality traits, but to a large extent learned patterns of behaviour.	▪ As with most self-report instruments, it is possible to complete it with the intention of presenting a particular profile. ▪ Some will find the HBDI items hard to read and understand.

RELIABILITY AND VALIDITY	Internal evidence suggests that the HBDI is psychometrically sound, and new analyses can draw on an enormous international database.	There are very few independent studies of the reliability and validity of the HBDI.
IMPLICATIONS FOR PEDAGOGY	▪ HBDI-based feedback does not seek to attach permanent labels to the individual. ▪ Herrmann provides rich accounts of how people think and learn, valuing diversity and arguing for mutual understanding. ▪ Teachers, learners, managers and workers may be stimulated to examine and refine their ideas about communication and learning. ▪ Herrmann argues that all learners need to develop stylistic flexibility and, where appropriate, extend their range of competence.	The pedagogical implications of the 'whole-brain' model have not yet been fully explored and tested.
EVIDENCE OF PEDAGOGICAL IMPACT		Although well established in the business world, the use of the HBDI has yet to be extensively validated in education.
OVERALL ASSESSMENT	A model which, although largely ignored in academic research, offers considerable promise for use in education and training. It is more inclusive and systemic than many others, taking an optimistic, open and non-labelling stance towards the development of people and organisation.	
KEY SOURCE	Herrmann 1989	

2.2.3 Multiple intelligences

In order to accommodate learning style flexibility, the facilitator of learning needs to be aware of the multiple intelligences proposed by Gardner (1999). The inclusion of different learning styles and multiple intelligences is crucial in the learning process and my theoretical framework consists of these two learning theories, and my lens through which to understand these theories is dispositional theory (Perkins *et al.*, 1993). The merging of these two learning theories, creating a holistic approach to instruction and learning, allows educators to foster human diversity and maintain rigorous academic standards. This integrated learning strategy allows learners to feel that they are valued and to realise their full potential in order to succeed by becoming reflexive and self-aware learners (Silver *et al.*, 2000).

In 1983, Howard Gardner defined intelligence as a person's ability to use a learned skill, generate products or find solutions to problems in a manner that is accepted and valued by the individual's community (Sousa, 2006). Gardner's theory works on the premise that the educator recognises that each learner has innate talents and the facilitator of learning should assist in enhancing these strengths. As a result learners feel confident and are more willing to take risks during the learning process. Therefore the focus is no longer on whether the child is intelligent or not, but rather on "how is this child intelligent?" (Beachner & Pickett, 2001:2). Gardner rejected the accepted use of IQ testing that some schools utilise in order to determine the educational limitations of a learner (Beachner *et al.*, 2001). Instead, through empirical research, Gardner identified other ways in which people are intelligent, and in this way refuted the testing of the traditional IQ test, which basically measured language and mathematical abilities.

In Gardner's pioneering book, *Frames of Mind* (1983), he divides the traditional mental intelligence theory (IQ) into seven distinct categories of intelligence. In his later research, he added an eighth intelligence (Gardner, 1999), but insisted that these intelligences are not fixed categories as every person possesses all of these intelligences, but chooses to use them in different situations and can develop each intelligence. All facilitators of learning should be aware that every learner has a "different combination" of these intelligences, and the facilitator should afford every learner the opportunity to enhance these intelligences (Du Toit, 2004:147), especially the less developed ones.

These are Gardner's (1996) eight intelligences:

1. Verbal/Linguistic
2. Mathematical/Logical
3. Visual/Spatial
4. Musical/Rhythmic
5. Bodily/Kinaesthetic
6. Interpersonal
7. Intrapersonal
8. Naturalistic

Gardner's theory challenges facilitators of learning to find out how each child is talented and optimise this giftedness. In addition he states that it is imperative to develop the less dominant intelligences as well, because one uses one's intelligences in varying combinations daily in order to execute various tasks (Teele, 2000:46). Furthermore, Gardner (1983) states that it is often in vocational pursuits that we see the enhancement and potential of these intelligences.

A brief description of Gardner's (1983) intelligences is provided next.

2.2.3.1 Verbal-Linguistic Intelligence

The auditory skills of a linguistic learner are highly developed and they tend to benefit from activities that are language - and listening-based. Their thinking patterns are based predominantly in words rather than in picture format and they are often good speakers, storytellers and actors. Therefore these learners learn best when they speak or hear words (Beachner *et al*., 2001). In order to identify a learner who is highly skilled in this intelligence, one needs to identify a learner who loves reading and writing; telling stories; a good speller; enjoys trivia, crossword puzzles and games linked to word associations; can easily recall places, names and dates and prefers using word processing programmes on a computer. In order to nurture this learner, one needs to encourage the reading and writing process through activities such as journal writing, creative writing, plays, debates, speeches and report writing (Tele, 2000). However, it is important to note that not all linguistically competent learners can perform at an elevated level with every one of these linguistic skills. Some may be good in a particular aspect such as reading, but may need assistance in developing their writing skills. Tele (2000) stresses that learners who do not process mainly using their verbal or linguistic intelligence may have difficulty learning to read if they are not assisted in developing their reading skills in multidimensional ways in order to complement their dominant intelligence.

2.2.3.2 Logical-Mathematical Intelligence

Logical-mathematical intelligence learners have a highly developed scientific ability (Jasmine, 1996:4) or as Lazear (2004:29) labels it, pattern-seeking intelligence. Lazear (2004:29) states that this intelligence searches for patterns, including "number patterns, thought patterns, color patterns, traffic patterns, relationship patterns, and so on". These patterns are developed initially from examples in the

real world and become increasingly abstract when one tries to understand the relationships that exist in the identified patterns (Lazear, 2004). People with this type of intelligence are keen to solve mathematical problems and simply think like a conventional scientist. However, it is important to note that traditional mathematical patterns are not the only patterns that govern this intelligence. Word, visual and sound patterns may also be included as features of this intelligence (Lazear, 2004). The following are the key cognitive abilities of logical-mathematical intelligence:

- **Problem Solving**: Learners use a variety of problem-solving techniques to solve scholastic problems in various subject-related areas.
- **Thinking Patterns**: Learners use thinking skills and thinking models to process and understand subject-related material.
- **Calculation Processes**: Learners use logical calculation skills that are subject related.
- **Logical Analysis**: Learners use inductive and deductive reasoning skills to establish credible arguments related to their studies.
- **Mathematical Operations**: Learners are encouraged to contextualise a performed operation to concrete examples in their daily life (adapted from Lazear, 2004:31).

There are many successful methods of incorporating multiple intelligences and learning styles in one's classroom practice; however, my focus was to afford my learners learning opportunities to enhance all eight of their intelligences and their learning styles through carefully designed learning opportunities. I ensured that learners were given the chance to work in all the intelligences and learning styles, from their less developed to their most developed.

2.2.3.3 Spatial Intelligence

Learners with this disposition learn best from visual presentations such as demonstrations, videos and pictures, as they tend to think using picture or image formations. These learners like to design, build, paint, sketch or sculpt their ideas and prefer expressing their feelings through the use of art techniques (Gardner, 1983). In order to nurture this intelligence, one should encourage a learner to view and create movies; design book covers; create cartoons, comic strips, scrapbooks; design and create models, costumes, displays, murals, game boards and so forth

(Beachner *et al*., 2001). Spatial learners usually take notes in class by drawing pictures or mind maps in order to retain the content, and these learners can even learn to spell by visualising a picture of a word, and then writing the correct spelling of the word several times within the picture. This is considered to be an effective method of teaching spelling, as every time a spatial learner hears the word, he or she visualises the related picture, and within this picture is the correct spelling (Teele, 2000). It is important to note that although visualisation is an important component of spatial intelligence, it is not directly linked to vision or sight, as it can be highly developed in people who are blind (Campbell, Campbell & Dickinson, 2004).

2.2.3.4 Musical Intelligence

Musically inclined learners are responsive to sounds in their environment, appreciate music and may even listen to music when reading or learning. Rhythmic movements and activities can be used to engage musical learners in the learning process as rhythm triggers the musical part of the brain, and it is through this process that learners are able to apply and retain information (Teele, 2000). This intelligence is considered to have a "stronger consciousness-altering effect" as compared to the other intelligences, as musical compositions, rhythms or tunes can influence one's emotion or response (Lazear, 2004:55). As a result of its close association with emotions, music can be used in the classroom to create an atmosphere that can promote a constructive environment that enhances the learning process (Campbell, 2004).

2.2.3.5 Bodily-Kinaesthetic Intelligence

People with this intelligence have a highly developed tactile sense and can control objects or move accurately with little effort (Silver *et al*., 2000). These learners take pleasure in physical challenges and learn best through activities linked to movement, performance and action. They may often be labelled as hyperactive if they are not given the opportunity to learn through physical action. In order to identify a bodily-kinaesthetic learner, one may look for a learner who excels in sport; is restless when seated for an extended period; is interested in touching objects when learning and communicates through movement (Beachner *et al*., 2001). Bodily-kinaesthetic intelligence involves using one's body in a skilled way and Campbell *et al*. (2004:65)

state that this intelligence includes “the ability to unite body and mind to perfect physical performance”. Bodily-kinaesthetic activities allow learners to be active participants in the learning process.

2.2.3.6 Interpersonal Intelligence

Learners possessing this intelligence are naturally friendly and sociable. They are attuned to the needs of other people and are sensitive to the variations in people’s mood, attitudes and desires. They are generally excellent team players and learn best when they can relate to other people. They are often in leadership positions and are naturally social, and learn best when they interact with other people (Silver *et al*., 2000). In order to nurture interpersonal intelligence, one could encourage group research projects, role-playing, debates and group activities aimed at problem-solving (Beachner *et al*., 2001).

2.2.3.7 Intrapersonal Intelligence

These learners are able to gain access to their own feelings and emotional states. Usually these learners choose to learn on their own as they trust their self-understanding to guide them. Learners who have highly developed intrapersonal intelligences have an acute awareness of their emotions, dreams and thoughts, and can use this information to guide their lives. These learners in most cases are self-confident, and are usually non-conformists and set realistic goals (Silver *et al*., 2000). To nurture intrapersonal intelligence one should encourage independent work, journal writing and self-reflection (Beachner *et al*., 2001).

2.2.3.8 Naturalistic Intelligence

Naturalistically inclined learners are responsive to their natural environment, enjoy being outdoors and tend to classify living and non-living things in nature using patterns or features (Silver *et al*., 2000). Gardner expands this intelligence by defining a naturalist as one who has the ability to classify flora and fauna, recognises sounds in the environment, observes and explores relationships in nature, and can easily identify patterns and associations in the animal and plant kingdom (Gardner, 1996). In order to nurture this intelligence, one would encourage a learner to write reports based on nature and the environment, execute gardening projects and participate in outdoor learning activities and nature walks (Beachner *et al*., 2001).

With regard to learning styles, there are a number of learning-style theorists who interpret human personality in a variety of ways; however, their research contains similar elements with regard to the process of learning. I have chosen to amalgamate the theory on multiple intelligences as proposed by Gardner (1999) and Ned Herrmann's (1996) learning-style model represented in Figure 6. These two theories complement each other because the multiple-intelligence theory focuses on the content of the learning and the connection between learning and the eight intelligences and pay little attention to the way people "perceive and process information", and the contrary is true for learning styles (Silver *et al.*, 2000:41). In other words, the multiple intelligence model is concerned with content or the "what" of learning whereas learning styles focus on the "how" of learning (Silver *et al.*, 2000:24).

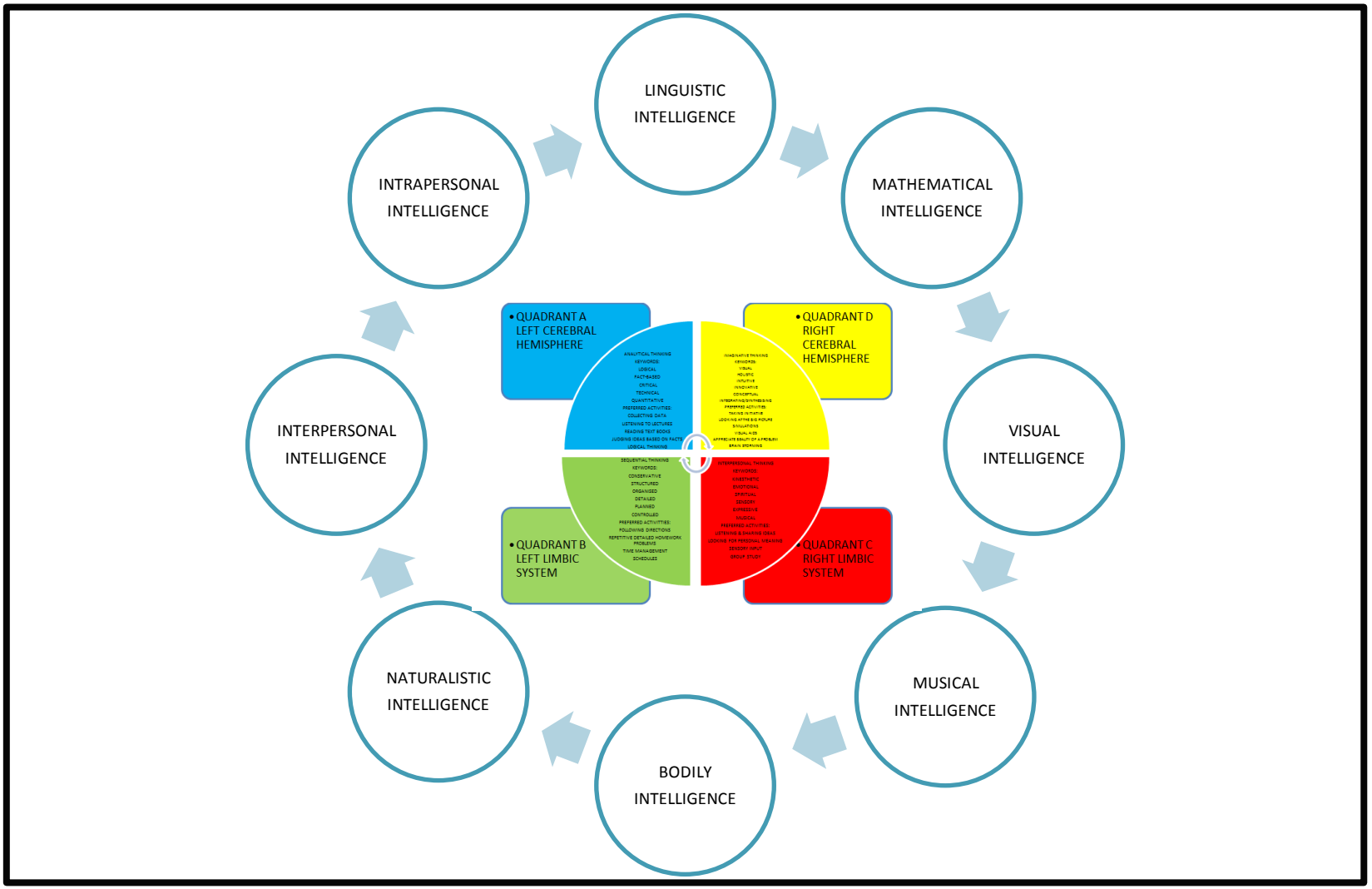


Figure 6: Integration of the whole-brain theory and multiple intelligences

Source: Herrmann (1996) & Gardner (1999)

2.2.4 Emotional Intelligence and Emotional Learning

Emotions play a vital part in establishing whether an individual takes responsibility for his or her learning or relies on others for supervision and assistance. Carlson and Hatfield (1992) describe emotions to be a genetic predisposition that inherently motivates one to respond to the social environment. Therefore emotional learning is referred to as the "gatekeeper to all other learning" since emotions are the chief driving force of the human race (Given, 2000:23). Consequently parents, educators and other stakeholders who ignore the emotional force that governs each learner, and focus on the academic components only, may often be disappointed with their efforts and the net result. Emotional learning motivates learners to accept responsibility for their learning and to persevere until tasks are successfully completed (Given, 2000). Even Gardner (1983) recognises that emotions can assist the learning process when he describes intrapersonal intelligence to involve accessing one's emotions. Emotional intelligence, a term coined by Mayer and Salovey (1997), involves using one's emotions to facilitate reasoning processes, understanding and managing emotions in ourselves and others, and using emotions to assist with cognitive activities and to motivate one. Mayer and Salovey (1997) relate emotional intelligence to being equipped with emotion-related skills that can be grouped into four branches:

1. Perceiving emotions
2. Using emotions to facilitate thought
3. Understanding emotions
4. Managing emotions

Salovey (2004) states that "[e]ducators with well-honed skills on all four branches of emotional intelligence may be less likely to suffer the consequences of burn-out and can be especially effective in addressing the needs of their students".

2.2.5 Facilitating Learning

Facilitating learning is a complex but imperative process that does not involve teaching, which is a common misconception of many people involved in the instruction and learning process. This is further supported by Rooth (2000:35) who states that "facilitation is not teaching, not lecturing, not preaching, and not directing.

Facilitation is providing the resources and structures for participants to explore, learn and develop".

Slabbert *et al.* (2009) and other researchers advocate that facilitating learning seems to be advancing education to its rightful professional level and can be considered an alternative to teaching. Even two decades ago, Holdstock (1987:49) realised that learners should be "facilitated to develop their unique potential" instead of a teaching philosophy that was based on a premise that learners need to be taught "in order to know".

Facilitating learning can be defined as "the deliberate and purposeful intervention of a facilitator of learning to challenge learners into maximising their human potential through the process of authentic lifelong learning" (Slabbert *et al*., 2009:100) or simply, learning that is activated through the facilitation process. Facilitating learning allows the learner to take responsibility for his or her learning under the supervision of an expert facilitator of learning. The facilitator of learning is interested in ensuring quality learning and attaining an outcome of the "highest possible level" (Slabbert *et al*., 2009:100) and this is what I intended to do: initiate and maintain superior learning in my action research study.

2.2.6 Self-regulated Learning, Metalearning and Constructivist Theory

For learning to be meaningful and beneficial, one needs to develop the necessary skills to understand the process of learning. This is referred to as self-regulated learning that involves the process of metalearning or metacognition in learning. Human-Vogel (2004:22) declares that self-regulated learning comprises "assessing your own knowledge, setting your own learning goals and then developing a plan of action that will enable you to achieve those goals".

This form of learning ensures that passive learning and the superficial processing of information is inhibited. Instead, constructive and active learning that is directed and monitored is enhanced and is considered transferable in another context. Self-regulated learning allows learners to control and interpret their learning in situations that are intricate and involve authentic learning and in turn can be linked to the constructivist theory. This theory focuses on active learning and according to Human-Vogel (2004:24), "Constructivist theory assumes that people are actively

involved in construing knowledge and that such knowledge is always construed within a particular social and cultural context".

Hence a facilitator of learning should focus on guiding learners to become responsible learners who take ownership of the learning process. In order to ensure that the highest quality of learning is achieved, learners need to understand how they learn best and inadvertently identify their weaknesses during the learning process; how to monitor their learning and how to adapt their learning styles to different realities. Through the process of self-regulated learning and a combination of Herrmann's (1996) and Gardner's (1999) theories, this is made possible.

2.3 Conclusion

Chapter 2 comprises the Literature Review that provides a detailed analysis of the innovative and leading theories and literature linked to learning styles. The intensive study of the diverse learning theories allowed me to make an informed decision regarding integrating the most viable learning theories to be implemented in my teaching practice.

The investigation confirmed that Ned Herrmann's four quadrant whole-brain model and Gardner's multiple intelligences were the most viable models for my empirical study. It allowed for greater flexibility in my teaching practice and validated a holistic learning model that complements the vision of the South African education system by encouraging critical-thinking skills, creativity and promoting lifelong learners. Invariably, these models are the best practice for promoting learning style flexibility and self-regulated learning, yet still maintaining rigorous academic standards.

CHAPTER 3: RESEARCH DESIGN

3.1 Introduction

This chapter outlines the research design and research methods that were used in my empirical study. It offers insight into the formation of my practical action research plan and presents how the main question and sub-questions steered and guided my small-scale research study as an English teacher at high-school level. Practical action research according to Creswell (2008:600) "involves a small-scale research project, narrowly focuses on a specific problem or issue, and is undertaken by individual teachers or teams within a school or school district". In addition, the ethical principles that were strictly adhered to throughout the research process in order to ensure a valid and reliable outcome are mentioned.

In Chapter 4, I considered the following actions that encompassed my research question and sub-questions:

3.1.1 I report on the assessment of my learning style, as represented in the form of a visual profile and a narrative.

3.1.2 I evaluate the implications of my learning style preferences on my teaching practice.

3.1.3 I report on how I established the learning styles of my learners and how I made them critically aware of their learning potential through the process of self-regulated and metalearning.

3.1.4 Furthermore, I report on the learning opportunities (lessons) that I have designed with a view to promoting learning style flexibility in my teaching practice and inevitably contribute to the professional development of my teaching practice and my professional learning.

3.2 Research Paradigm

As stipulated in Chapter 1, action research is the research paradigm that framed my enquiry as it provides a useful framework for practical and critical research investigations in the education sector (Du Toit, 2010; Creswell, 2008; Hooley, 2005; Burton & Bartlett, 2005; Biggs, 2003; McNiff, 2002; Zuber-Skerritt, 1992). In this chapter I evaluate the criteria and processes that underpin action research that showcases the effectiveness of this paradigm as a viable study for the implementation of my innovative idea. Next, I consider the research context and

participants and outline the benefits of the study while considering the ethical concerns.

3.2.1 Action Research Criteria

Experts in the field offer various definitions on the meaning of action research. However, the one that I found applicable to my study is that stated by Kemmis and McTaggart (1988:5):

> "Action research is a form of collective, self-reflective inquiry that participants in social situations undertake to improve: (1) the rationality and justice of their own social or educational practices; (2) the participants' understanding of these practices and the situations in which they carry out these practices".

Creswell (2008:598) mentions the importance of action research that motivated me in selecting this design to use as my investigative lens for my small-scale empirical study. Below are the key headings that I have adapted for my investigation.

3.2.1.1 Encourages change in schools

Action research encourages transformation (Du Toit, 2012) not only in schools but specifically in my teaching practice. With significant changes to the curriculum over the past 20 years in South Africa, I needed to investigate whether the transformation in my teaching practice is aligned with the changes in the educational setting. I needed to discover a better practice that encouraged change and instead of stifling my learners, encouraged them to participate actively in the learning process through a holistic model of learning.

3.2.1.2 Fosters a democratic (i.e. involvement of many individuals) approach to education

I needed to confirm that even though a renovated post-apartheid curriculum exists in theory, in practice I designed learning opportunities that fostered fairness and democracy by involving all learners, irrespective of race, cultural or social backgrounds and learning styles differences.

3.2.1.3 Empowers individuals through collaboration on projects

I needed to verify whether I empowered my learners to take responsibility for their learning. My accountability as a facilitator of learning is to create learning opportunities that endorse co-operative learning and create self-regulated learners

(Silver *et al*., 2000; Du Toit, 2010) who are competent in monitoring and deepening their own learning.

3.2.1.4 Positions facilitators of learning who function as learners to narrow the gap between practice and their vision of education

Even though I validated a holistic and an innovative approach to learning as my desired practice, my action research process confirmed that my style of facilitating learning complemented only a few learners in my class. In order to align my vision of education with that of my teaching practice, I created varied learning opportunities to accommodate the diverse learning styles prevalent in my class.

3.2.1.5 Encourages facilitators of learning to reflect on their practices

The aim of my action research study was to enhance my professional development by becoming a reflective facilitator of learning and practitioner. Du Toit (2010) stresses that reflection is vital for professional development and learning and assists in monitoring one's scholarly practice. I critically reflected on my practice once I collected and analysed the data.

3.2.1.6 Promotes a process of testing an innovative idea

Mills (2000) created a Dialectic Action Research Spiral that includes one of the models that I used as a framework to initiate my research. In the latter part of this chapter I comment on Du Toit's Visionary Action Research Model (2008) that integrates other critical stages that I used in order to test my innovative idea. Mills's (2000) model shown in Figure 7 together with the expert knowledge of Kurt Lewin (1946), McNiff (2002), Zuber-Skerrit (1992) and Du Toit (2010) inspired me to implement a five-step plan of action and apply what I have learned in order to continue with my professional development in the years to come.

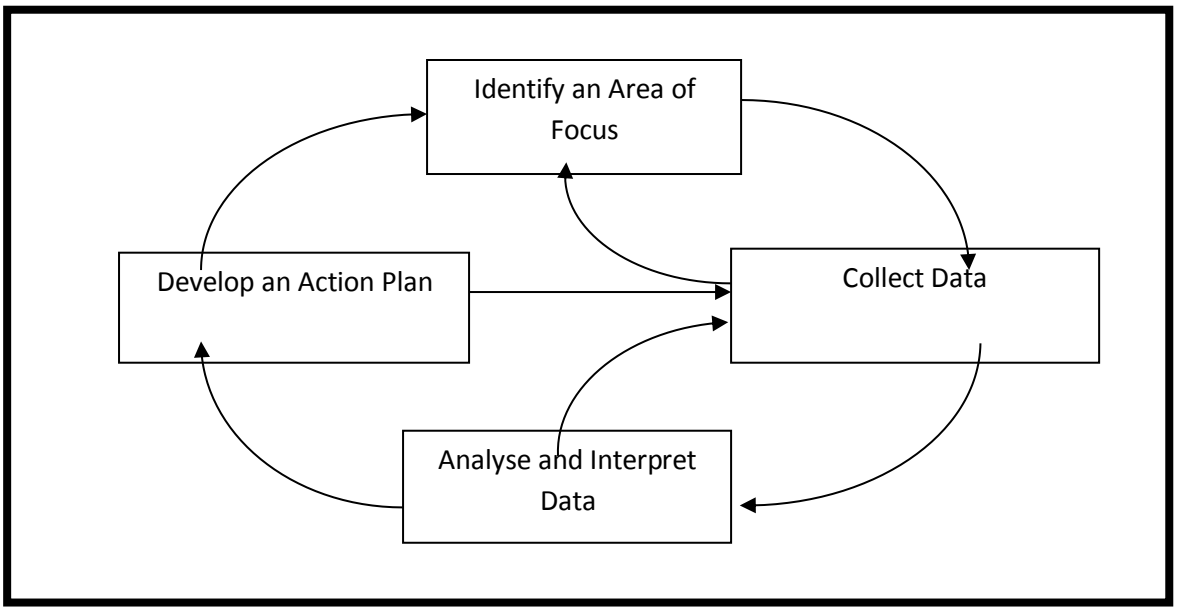


Figure 7: Dialectic Action Research Spiral

Source: Mills (2000)

When considering my reasons for selecting action research as a viable research design, I envisaged myself as a visionary practitioner who was interested in experimenting with an innovative idea that Du Toit refers to as an asset-based approach with the aim of innovating "the current practice or radically transforming it" (Du Toit, 2010:14). This model is discussed in the latter part of the chapter. After reviewing the literature as reported in Chapter 2, I was able to identify the theories of learning I would implement when creating learning opportunities. I was then able to collect, analyse and interpret the data. Furthermore, I was able to create an action plan that is explained in Chapters 4 and 5. Finally I was able to improve my initial action plan as it entailed several cycles that accommodated the multidimensional approaches to an investigation.

Secondly, I utilised the mixed method approach of collecting both qualitative and quantitative data. During the data collection process, I made provision for superior ethical practice that included obtaining consent from the respondents. Thirdly, I analysed and interpreted the data reported in Chapter 4 and explained the findings in Chapter 5. Finally, the last stage in Mills's model includes developing an action plan or chart that is outlined in Chapter 4. Chapter 5 included the recommended actions I deemed imperative in my professional development practice.

3.2.2 Action Research Process

Action research is an innovative study and provided the best way to apply my innovative idea of implementing a holistic learning model based on the principles of learning styles and multiple intelligences through the investigative lens of action research.

There is no fixed process in order to proceed with one's action research process. However, Creswell (2008:609-612) outlines a general approach that I found useful in implementing my innovative idea. This is explained next.

Step 1: Determine whether action research is the best design to use

After reviewing the literature, the blueprint of action research was deemed most useful in order to accommodate the changes that were required in my teaching practice. I continuously kept in mind the asset-based approach proposed by Du Toit (2012) in which identifying a problem is replaced by focusing on an innovative idea, such as the idea of applying a holistic model to facilitate learning in my teaching practice. Creswell (2008:599) describes the two main types of action research design, namely practical action research and participatory action research as represented in Figure 8.

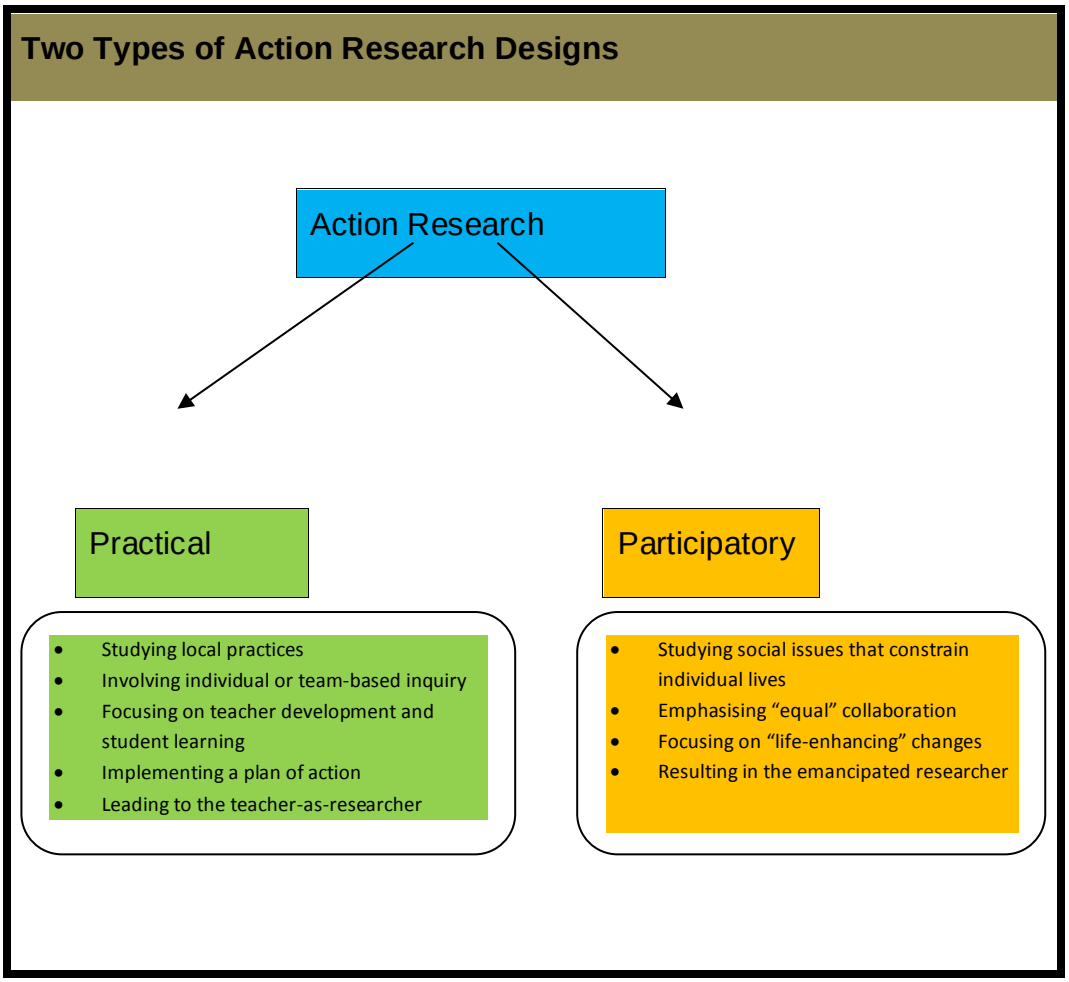


Figure 8: Two types of Action Research Design

Source: Creswell, (2008:599)

The criteria of practical action research afforded me the opportunity to implement my plan of action that was an innovative idea explored in my teaching practice. In Chapter 4, I explain how I collected and analysed the data. I reflected on the process through a variety of means, including negotiating meaning and professionally developing by obtaining critical feedback from the learners as well as engaging in scholarly discourse with my colleagues. I was able to develop and execute my own plan of action once I collected both qualitative and quantitative data. This is explained in detail in Chapter 4.

From the evidence mentioned above, one can see why I regarded practical action research as my investigative lens and why it was a justifiable scholarly intervention. It has allowed me to ask pertinent questions about my practice as a Master of Education student and as a facilitator of learning. Moreover, it channelled my

empirical study so that I was able to discover the answers to my research questions through different means, such as a study of relevant literature, scholarly discourse with other practitioners and critical reflection. These aspects are typical of the constructivist epistemology that is informed by action research.

Step 2: Identify an innovative idea to study

I identified an innovative idea that could enrich my teaching practice, and I formulated research questions accordingly. As a result of disengaging with the learning process by not acknowledging and catering for the diverse learning styles of all my learners, I realised that the implementation of an innovative idea was a way forward to address my dilemma. Also, I used sub-questions to guide the research process to allow me to remain focused and not deviate from my initial plan of applying a holistic model to facilitate learning. The main research question and sub-questions are presented in Chapter 1.

Step 3: Locate resources to help making meaning of the innovative idea

The Literature Review (Chapter 2) gives insight into the various experts and resources that I consulted to generate my innovative idea of a holistic model. In addition, the Research Support workshops and lectures comprising the coursework part of my Master's programme further assisted me. I consulted critical friends who assisted me in formulating my plan of action.

Step 4: Identify the information you will need

This step involved identifying the sources from which I obtained my data. I selected my Grade 9 English class to present my innovative holistic model of teaching and from which I obtained the necessary data. I needed to obtain ethical clearance in order to conduct this research as well as permission from the principal and other stakeholders at my school. Once this had been obtained, the highest standard of ethical practice encompassing this empirical study was strictly applied. Sagor (Creswell, 2008:611) expounds that the more sources one uses, the more they assist with the triangulation process and result in one understanding the application of the principles of the innovative idea of choice more effectively. Also, I needed to familiarise myself with the current trends in research and the literature relating to learning styles, multiple intelligences and learning diversity. This was explored in Chapter 2.

Step 5: Implement the Data Collection

Gathering data requires time and my data collection compilation was conducted over a six month period. I used a variety of data collection techniques that generated qualitative and quantitative data that enhanced my action research approach. I reflected on my practice through the critical feedback from learners in my class by using a Learner Feedback Questionnaire. These feedback forms assisted in monitoring and assessing the quality of my teaching. I obtained feedback from my colleagues in the educational sector and completed a self-evaluation questionnaire to assist with my professional development. Completing the Herrmann Brain Dominance Instrument (HBDI), a 120 question survey, allowed me to profile my learning style. Moreover, to profile my learners' learning preferences, I utilised Herrmann's *Turn-On Work Indicator Map*. Also, I made observations by means of digital recordings of the Grade 9 learning opportunities linked to learning style flexibility in the English classroom. In addition, I provided written and digital evidence (photographs) of the Grade 9 learners' work in order to present the evidence of learning style flexibility.

However, since this was my first action research study, I limited the data collection so that I was able to implement my innovative idea of a holistic model that promoted learning style diversity and multiple intelligences in a practical and manageable way.

Step 6: Analyse the Data

My research was conducted on a small scale and I did not deem it necessary to procure the help of research experts, except for the data gathered by means of the HBDI, which is a commercial instrument and administered by the Ned Herrmann Group in USA. Instead, I analysed the additional data gathered by myself. Chapter 4 outlines the analysis and examination of the quality of data that I obtained once I received ethical clearance. I used descriptive statistics in order to analyse the data and I compared the group data to my learning style profile.

Step 7: Develop a Plan for Action

In Chapter 4, I report on the plan of action I developed and I show how my findings addressed my research questions. I then present some guidelines to other education practitioners in order to review systematically their practice of instruction and learning, if they have not already done so.

Step 8: Implement the Plan and Reflect

Once my results had been analysed and a plan of action developed, I began my next empirical study of applying what I had learned in order to continue with my professional development in future. I reflected on my research questions and the extent to which they were answered as well as what I had discovered and constructed during the action research study. This is affiliated with the constructivist perspective of action research in which the research participants' personal experiences and views are seen as crucial to the research process and the setting or context of the study is relevant and authentic (Creswell, 2008:50), which in my case is the classroom environment. Moreover, the constructivist perspective allowed me as the research practitioner to position my thinking to realise and appreciate the value of subjectivity and permitted me to report in my studies about my "own personal biases, values, and assumptions" (Creswell, 2008:50).

3.2.3 Developing an Action Plan as an Investigative Lens

McNiff (2008:8) categorically states the following:

> "There is nothing sinister in the idea of influence, and everything to celebrate; most ideas that people have were influenced by someone else, somewhere else in time and space. This is the way that knowledge evolves, a process of learning from others and reworking existing knowledge in new ways".

McNiff's (2000) premise was applied to my study as I aligned my research process with what two leading experts, Zuber-Skerritt (2001) and Du Toit (2008), from the education and research field, were enforcing about the process of action research.

3.2.3.1 Zuber-Skerritt's Action Research Cycle

Firstly, Zuber-Skerritt (2001:15) diagrammatically presents the pragmatic form of action research: a spiral of an action research cycle presented in Figure 9 based on the work of Kurt Lewin, a social scientist:

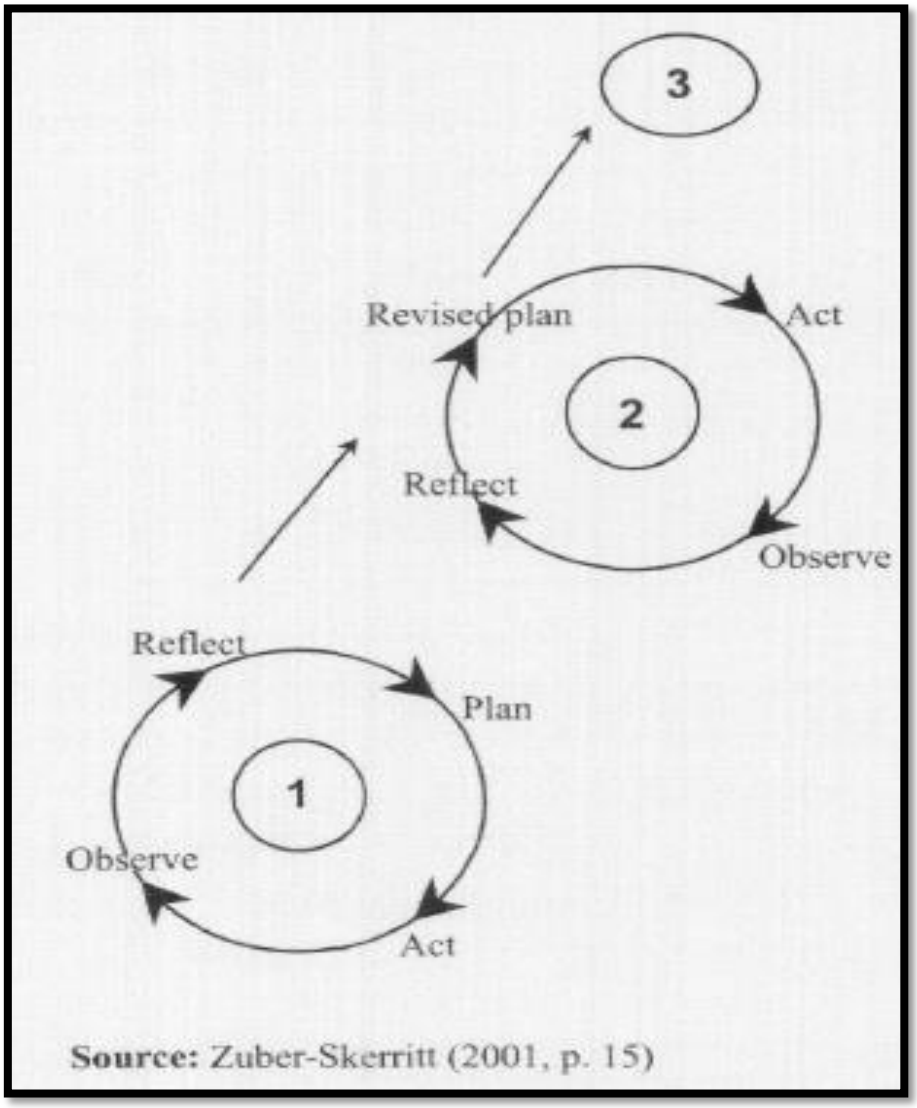


Figure 9: The spiral of an action research cycle

This model represents the action research process that occurs in cycles as represented by the numbers 1, 2 and 3. Each cycle is made up of four phases in which the action researcher does the following:

CYCLE 1 -

Phase 1: Plan

Phase 2: Act

Phase 3: Observe

Phase 4: Reflect

CYCLE 2 -

Phase 1: Revised Plan

Phase 2: Act

Phase 3: Observe

Phase 4: Reflect and so forth

The research cycle is a continuous process similar to my proposed action research plan presented in Chapter 4. It involves research commencing from an enquiry, practical improvement via collaborative learning, self-reflection and a revised action plan that promotes professional development and lifelong learning. These concepts are explained next.

3.2.3.2 Lifelong learning

One of the roles of applied competencies for educators according to the *Norms and Standards for Educators* (South Africa, 2000) is that of scholar, researcher and lifelong learner:

> "The educator will achieve ongoing personal, academic, occupational and professional growth through pursuing reflective study and research in his learning area, in broader professional and educational matters, and in other related fields".

As a facilitator of learning in the South African context, I needed to be compliant and implement the process of lifelong learning in my educational practice. Merely registering for a course and obtaining a certificate was not the solution, but practically applying the principles of action research in my enquiry and reflecting on the process in order to develop professionally were indispensable. This process provided a rigorous way for me to ask pertinent questions involving my practice and 'actioning' my research in a systematic and innovative way. Du Toit (2010:12) confirms:

> "Lifelong learning is not about obtaining formal qualifications only, but about professional learning from an intrapersonal locus of control viewpoint and learning from life in general. However, the focus is not on passive learning but on taking action".

3.2.3.3 Professional Collaborative Learning

In order to gain an objective perspective about my study, collaboration was fundamental. This included collaboration with critical friends or peers. Their expert advice allowed me to evaluate my practice and where necessary, make the changes,

thereby establishing an environment of professional learning. The exchange of ideas and skills motivated me to change and improve my practice on a continuous basis. Altrichter, Kemmis, McTaggart and Zuber-Skerrit (2002:131) state:

> "Action research is participative in that those involved contribute equally to the inquiry, and collaborative in that the researcher is not an expert doing research from an external perspective, but a partner working with and those affected by the problem".

For me the action research paradigm advocated a collaborative approach in which knowledge was gained, shared and even remoulded to create another viable action plan and my personal theory. These plans and theories are explained in Chapter 4 and Chapter 5. My peers and I were equals in this process; "no one tells another what to do in action enquiries; we all share and value one another's learning" (McNiff, 2002). This democratic collaboration led to self-directed professional learning which is incorporated in Du Toit's (2010) asset-based approach.

3.2.3.4 Du Toit's Asset-based Approach

After reviewing the literature about what experts say in the field of action research, I found Du Toit's asset-based approach most compelling to my enquiry.

The literature emphasises that there are a plethora of reasons why people choose to utilise action research as their investigative lens and these valid reasons are accompanied by a variety of approaches one could employ in one's research. When considering my reasons and approaches, I envisaged myself as a visionary practitioner who was interested in experimenting with an innovative idea that Du Toit refers to as an asset-based approach with the aim of innovating "the current practice or radically transforming it" (Du Toit, 2010:14). It is considered an asset for all facilitators of learning to be aware of their instruction and learning style combined with knowing the learning styles of all their learners and this is what I intended to do. It is also important that the practitioner-researcher as a person with an array of qualities is regarded as a human resource asset.

By being willing to transform my educational practice and by being actively involved in the course of my professional learning, I can consider myself what Du Toit (2010:14) terms a "transformational leader" who is "an asset that can be utilised and developed further". I consider myself having the potential to be an asset that can be

developed to my optimal echelon. I see myself as embracing the creed of a transformational leader as I have taken the leadership role of applying a holistic approach that promotes learning style diversity via the tenets of Gardner's and Herrmann's theories and practices. Also, I consider myself to be a leader of transformation as this is the first time that I have attempted to transform my teaching practice by using a holistic approach and it is the first time that an innovative project of this nature has been introduced at my school.

Du Toit's (2008) non-linear Visionary Action Research Model, depicted next [Figure 10] adapted from the work of McNiff (2000) and Zuber-Skerritt (1991) promotes continual reflection and transformative professional learning. However, the crucial difference is that instead of just reflecting or creating a revised plan as shown in Figure 9, Du Toit prefers "planning for innovation" or "planning for transformation" as shown in Figure 10 (Du Toit, 2008). This is aligned with my personal theory as I see myself as a transformational leader.

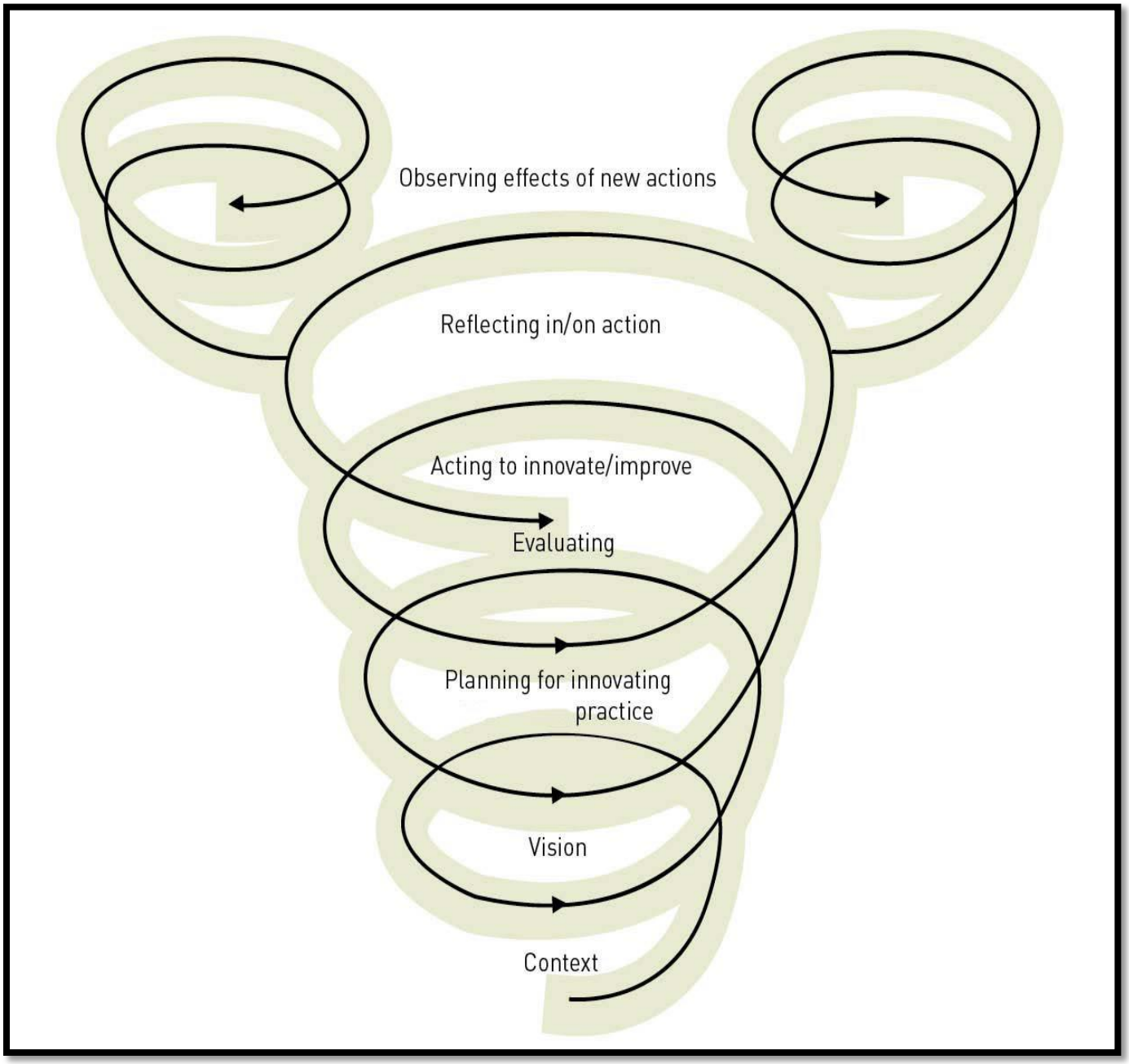


Figure 10: A Visionary Action Research Model

Source: Du Toit, 2008

Figure 10 shows that action research is executed as a spiral, consisting of different cycles, each consisting of different steps. The flexibility of this model allows for an initial cycle of research to occur and then permits the researcher to start in the middle of a cycle that may lead to a different discovery. This allows the action researcher to reflect critically on the process and this "critical reflection is multidimensional and takes many turns" (Du Toit, 2010:15). Moreover, this model

does not only adhere to a cyclic or sequential route, but makes allowance for de-routing cycles and a different focus to be researched, which emphasises the complex process of action research. Du Toit's model (2010:16) incorporates the de-routing cycles that follow a similar phase to the initial action research cycle:

Step 1: Planning for innovation/transformation

Step 2: Acting to innovate

Step 3: Observing the effects of new actions

Step 4: Reflecting in/on action

Step 5: Evaluating

I followed these steps in a systematic way to activate my innovative idea of a holistic model that promotes learning style diversity. I then pursued a new action research cycle after reflecting on the issues emerging from my initial investigation. These steps are explored in Chapter 4.

3.3 Research Context and Participants

The research site was an independent school in Pretoria. My participants consisted of the learners in my Grade 9 English class as a convenience sampling strategy because these participants were "willing and available to be studied" (Creswell, 2008:155). I asked all twenty learners in the class to be participants, as my research required introducing a holistic learning model to all learners in the class and not a particular learner, which supported the equity and fairness process. My research was conducted over a six month period and the holistic learning model that I proposed was compliant with South Africa's educational vision as iterated in the National Curriculum Statement (Department of Education, 2005) and allowed for the integration of the Critical Cross-Field Outcomes (Department of Education, 2002) as this learning model promoted the holistic development of learners. It also accommodated the transition to the CAPS initiative. Furthermore, I used this opportunity to assess my compliance with the seven roles for educators as outlined by the *Norms and Standards for Educators* (South Africa, 2000) in my teaching practice.

3.4 Benefits of the study

The research paradigm of action research allowed me to monitor and evaluate my teaching practice and through the process of reflection, I could make the necessary adjustments in a methodical way to generate my practice theory (Von Glasersfeld, 1989). Carr and Kemmis (1986:162) concur by stating that action research is:

> "... a form of self-reflexive enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices and the situations in which these practices are carried out".

This is further verified by Slabbert *et al*. (2009:143) who propound that action research is a systematic process carried out by improving and transforming a specific facet of one's education practice.

The diverse learning opportunities that incorporated my innovative idea of a holistic learning model allowed for the varied talents and gifts of the participants to be optimised. In addition, learning diversity and developing the full potential of all involved, including me, were promoted and rigorous academic standards were maintained. Consequently, this action research allowed me to validate the theory of holistic learning by utilising the underpinning principles in my teaching practice, and to reflect critically on this practice in order to enhance my professional development and construct my personal education theory.

My action research added to the current body of knowledge as I constructed new meaning and can claim that I have improved my practice (McNiff, 2002:38), innovated and transformed it (Du Toit 2012) based on my experiences, scholarly discourse with colleagues, and so forth which was complemented by reviewing the literature of learning styles and related theories. These theories embraced Herrmann's (1996) whole-brain model, Gardner's multiple intelligences (1999) and Du Toit's asset-based approach (2012) and incorporated a viable and innovative practice that was based on the tenets of current literature and incorporated global trends while still epitomising and honouring the South African Education curricula as explored in Chapter 1.

3.5 Ethical Considerations

In relation to action research, ethical considerations are of paramount importance (Creswell 2008). So when executing my innovative idea, I adhered to the high standard of ethical practice as prescribed by the Research Ethics Committee of the Faculty of Education at the University of Pretoria.

I provided each learner and critical peers with an Ethics Statement Letter and Consent Form, which informed them about my research and intentions, and requested their participation. I assured them that they could withdraw from the research process at any given time and also guaranteed confidentiality, thus allowing the learners and the observers the opportunity to exercise their rights. Each participant, based on his/her decision, needed to sign the applicable consent form with which all respondents complied. (See Appendix 4 for exemplars of Ethics Statement Letters and Informed Consent Forms).

Furthermore, I informed these learners and observer-colleagues that the project focused on transforming my teaching practice by implementing an innovative idea of a holistic learning model which in turn allowed learners to be exposed to various methods of learning and assessment that would benefit their academic work. During the study I reiterated that as a Master of Education student I have come to the realisation that learners learn in different ways and this also entailed showing their understanding in various forms. Therefore, a single method of facilitating and assessing learning would not suffice.

As my research involved minors, I needed to obtain the permission from the parents/guardians for the learners to participate in my study. I provided the parents/guardians with an Ethics Statement Letter and Consent Form, which informed them about my research and intentions, and requested their child's or ward's participation. I assured them that their child or ward might withdraw from this research at any given time and I guaranteed confidentiality.

In addition I needed to get the permission from the principal of my school to conduct this research. I achieved this by means of verbal and written format informing the principal about my research plans by furnishing details about my aims, objectives and methods of data collection. I assured him that my research would not in any way oppose the School Code of Conduct for Staff and that I would adhere to superior

ethical practice. I attached to the permission letter an exemplar of the Ethics Statement Letter and Consent Form that I prepared for the learners, their parents/guardians and participating colleagues outlining my research and ethical approach.

3.6 Conclusion

This chapter presents an overview of the action research design that I used in order to assist me with enriching my teaching practice, in particular the application of learning style flexibility integrated with the theory of multiple intelligences. In order to transform my teaching practice, I incorporated a qualitative and quantitative angle to my study which as a combination, according to Miles and Huberman (1994:42), offers “a very powerful mix”.

CHAPTER 4: EMPIRICAL STUDY

4.1 Introduction

This chapter contains the different sources of data I gathered in order to assist with the triangulation process. According to Creswell (2008:266) triangulation ensures that

> "the study will be accurate because the information draws on multiple sources of information, individuals or processes. In this way, it encourages the researcher to develop a report that is both accurate and credible".

In addition the converging of a mixed methods study of qualitative and quantitative data allows for "blending the strengths of one type of method and neutralizing the weaknesses of the other" (Creswell, 2008:266), thereby heightening my understanding of the various cycles of my innovative idea.

Firstly, I reflected on my teaching practice by describing the results I obtained by completing the Herrmann Brain Dominance Instrument (Herrmann International, 2013). Secondly, I presented the learning style profiles of my Grade 9 English class by using Herrmann's *Turn-On Work* Indicator Map (1996:26) represented in Figure 12. Thirdly, I adapted my lesson plans and presented learning opportunities that encompassed the four quadrants of the brain. Finally, I obtained critical feedback from the learners in my class by using a Learner Feedback Questionnaire, as well as feedback from my colleagues in the educational sector; and I used personal notes.

Effective learning can take place only when the whole brain is involved, so my focus involved creating learning opportunities that employed all four modes of the brain; this allowed the learners' preferred learning styles to be "accommodated" and their less preferred learning styles to be "utilised" (Du Toit, 2004:151).

4.2 Action Research: Qualitative and Quantitative Data Collection

4.2.1 Cycle 1 of my Visionary Action

4.2.1.1 Step 1: Planning for Innovative Practice

Description of my learning style profile

The terms *learning style preference, thinking style preference* and *mental preference* can be used interchangeably. However, in order to remain consistent, I have selected the construct *learning style preference*. In order to ascertain my learning

style profile, I completed the HBDI survey created by The Ned Herrmann Group (Herrmann International, 2013). This survey assisted me in compiling my learning style profile. By creating awareness of my learning style preferences I was able to determine how I learn, how I expect my learners to learn and how my preferences influence my teaching style.

To follow is a summary of the HBDI (Herrmann International, 2013) survey's aim:

> "It is a survey form which consists of 120 questions which profiles one's learning styles (thinking styles). The survey does not intend to measure skills but rather preferences. Once your learning style has been identified, you will have more insight into how you learn, solve problems, communicate, make decisions and understand why you do many things in a certain way. It should not be considered a test and therefore there are no incorrect answers. All questions should be answered honestly and candidly in order to obtain results which reflect a greater understanding of your learning style preferences".

4.2.1.2 Step 2: Acting to Improve

I completed the survey online. In case of any technical anomalies, I was provided with a unique identity code (HUTY4453) that allowed me to access and edit my survey if required, before finally submitting. I answered the questions as honestly and accurately as possible. My results were scored and analysed by a qualified HBDI practitioner. These results were sent to me electronically and a hard copy was supplied, accompanied with a detailed verbal explanation of my learning styles by the practitioner.

The Data Summary Sheet (Herrmann, 2013) in Table 4 confirms the name of the respondent, gender, occupation and date that the HBDI was completed. The next components consist of the profile scores, preference code and adjective pairs for each quadrant. It includes the preferred key descriptors in each quadrant and rates the work elements the respondent prefers according to a 5 point scale, with 5 representing most preferred and 1 representing least preferred.

The objective of the sheet is to summarise the responses of the 120 questions answered and represents the profile scores for each quadrant that can be useful if one wants to compare one's data to another respondent. The table is divided into four columns, each representing a quadrant from left to right: ABCD. The Left brain

mode is represented by columns A and B with its corresponding colours of blue and green respectively. The Right brain mode is represented by columns C and D with its corresponding colours of red and yellow respectively.

My profile scores for each quadrant indicate my preference code that represents my learning style preferences in descending order, C>D>B>A. These quantitative results highlight my preference only. Quadrant C is my dominant learning style preference with the numerical value of 119. My attraction to this quadrant is closely linked to the mode or key descriptors that are reflected in my daily activities and these include *Talker, Emotional, Spiritual* and *Reader*.

Teaching, Writing, Expressing and *Interpersonal* elements are the dominant elements that I prefer utilising during work activities. My second preferred learning style is affiliated with quadrant D with the cumulative value of 93 followed by quadrant B with a score of 66. Finally, quadrant A is my least preferred learning style in which I obtained a score of 30. I have an aversion to work associated with the following elements: analytical, technical, problem solving and financial. I have diagrammatically represented the key descriptors and the work elements of the HBDI (Herrmann, 2013) in Chapter 2, Figure 4.

The data for the adjective pairing was derived from being forced to select pairs of adjectives when answering this section. One intuitively selects from a pair of adjectives resulting in one's learning style being revealed. Although it may not be the same as one's overall preferences, the figures from the adjective pairs indicate one's alternate preferred learning style, especially during occasions when one responds under pressure. There are 24 adjective pairs and 24 points are disseminated among the four quadrants. The distribution of my responses into the A, B, C and D quadrants were 1 - 4 - 12 - 7 respectively. My scores revealed that 50% of my adjective pair responses registered in quadrant C compared to 29 % of my responses that featured in quadrant D. 17 % of my responses were distributed in quadrant B while 4 % featured in quadrant A. These results show that how I react under pressure is consistent with my general behaviour and are perfectly aligned with my profile.

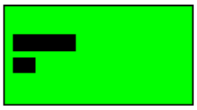
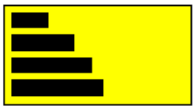
Table 4: HBDI Data Summary

Source: Retrieved from my HBDI results (Appendix 3)

HERRMANN BRAIN DOMINANCE INSTRUMENT
DATA SUMMARY

id: HUTY4453

NAME	YOUVESHNI SINGH		GENDER	F	GROUP	119804
OCCUPATION	Secondary School English Teacher				DATE	25 03 2013

	COLUMN A UPPER LEFT	COLUMN B LOWER LEFT	COLUMN C LOWER RIGHT	COLUMN D UPPER RIGHT
PROFILE SCORES	30	66	119	93
PREFERENCE CODE	3	2	1	1
ADJECTIVE PAIRS	1	4	12	7
KEY DESCRIPTORS (*MOST DESCRIPTIVE)	factual quantitative critical x rational mathematical logical analytical	conservative controlled sequential detailed x dominant speaker x reader x	emotional x musical spiritual x symbolic intuitive talker x reader x	imaginative * artistic intuitive holistic x synthesiser simultaneous spatial
WORK ELEMENTS	analytical 3 technical 2 problem solving 3 financial 2	organisation 3 planning 2 administrative 2 implementation 4	teaching 5 writing 5 expressing 4 interpersonal 4	integration 4 conceptualising 3 creative 5 innovating 5
ADOLESCENT EDUCATION EDUCATIONAL FOCUS OCCUPATION HOBBIES				

	primarily right	right some left	mixed	left some right	primarily left
HAND DOMINANCE		X			

	day	equal	night
ENERGY LEVEL		X	

	none	some	frequent
MOTION SICKNESS		X	

	introverted							extroverted
INTROVERT/EXTROVERT						X		

HBDI profile overlay presents a visual plot of my thinking style preferences.

- **Description of my HBDI Profile Overlay**

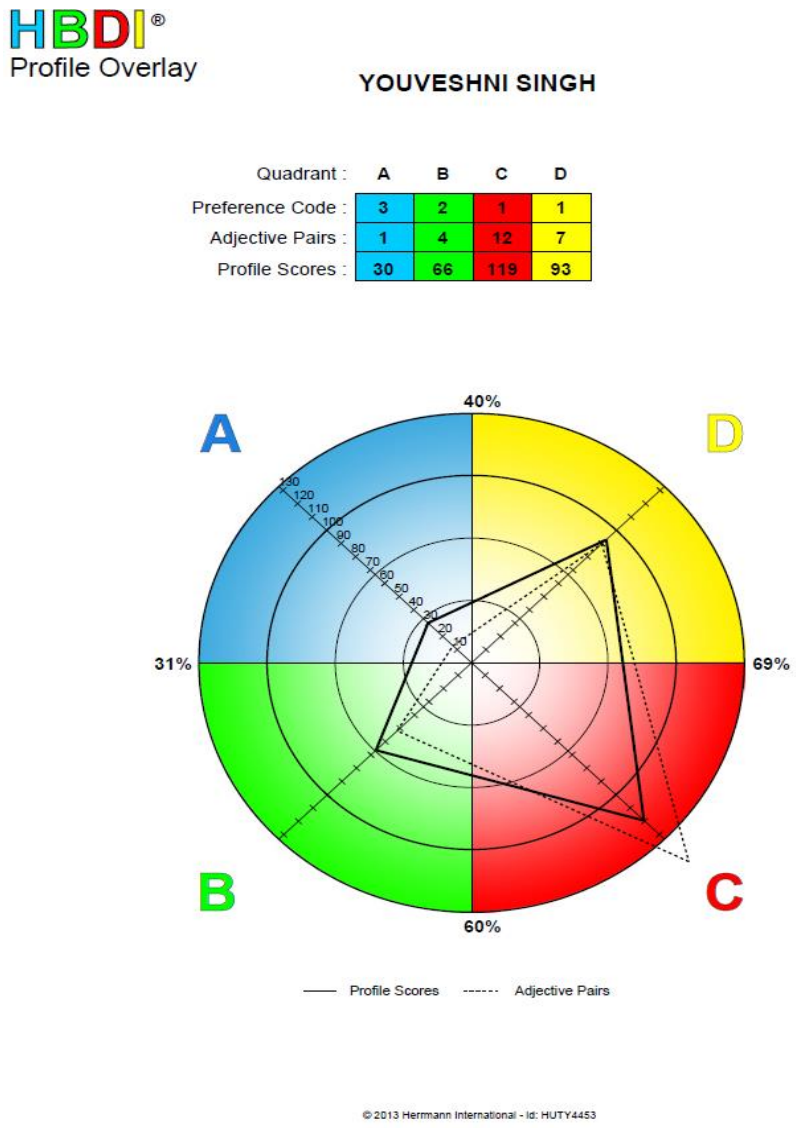


Figure 11: HBDI Profile Overlay

Source: The Ned Herrmann Group: HBDI

Figure 11 represents my learning profile by plotting my profile scores graphically. Learning style preferences are not limited only to the four quadrants, but also by the four modes in which the upper and lower quadrants are split. My scores 30, 66, 119 and 93 represent quadrants A, B, C and D respectively. My profile overlay shows that my Right mode of thinking that combines quadrant C and D is my dominant mode of thinking and learning. The key mental processes for this mode include

spontaneous and meaningful thinking as well as dramatic and idealistic approaches. Vocations typical of people with this profile include social workers, musicians, artists, entrepreneurs and teachers or trainers. The teaching vocation is consistent with my occupation as I am currently a high school English educator.

Description of my learners' learning style profiles

It was not feasible for me to allow each learner to complete an HBDI in order to ascertain their leaning style profile because it was not a cost effective process. I had to find an alternative instrument and decided to allow my twenty Grade 9 English learners to complete an exercise proposed by Ned Herrmann (1996) himself.

- **Ned Herrmann's *Turn-On Work* Indicator Map**

Herrmann (1996:25) states that brain dominance "leads to the development of preferences, which in turn establishes our interests" and leads "to our development of competencies". In order to gauge the quadrant that one prefers using at work or in my case, in order to ascertain my learners' learning style preference/s in the educational sector, Herrmann created a *Turn-On Work* Indicator Map that assisted me in identifying my learners' learning preferences. Next is a representation of Herrmann's (1996:26) *Turn-On Work* Indicator Map.

Turn-On Work Indicator Map

Figure 12: Ned Herrmann's *Turn-On Work* Indicator Map

Source: Herrmann (1996:26)

Herrmann (1996:26) explains why he refers to this exercise as a *Turn-On Work* Exercise:

> "By *Turn-On Work*, I mean activity that is so interesting, so stimulating, so pleasurable to do that you select it for these special attributes over other work that was offered to you. It may not be the easiest work to perform, but in all cases, it is more satisfying and fulfilling and, therefore, if given a choice, this is what you would select. And finally, it is the kind of work that doesn't require constant external rewards because the doing of the work is rewarding in itself".

In order to complete this exercise, I provided each learner with a *Turn-On Work* Indicator Map. A respondent number was allocated to each learner to ensure anonymity. Learners had to select only eight elements or descriptors from all four quadrants that *turned them on* the most. The term *turn you on* was first explained to the learners to avoid confusion. Then learners were instructed to visit each quadrant in order to make their selection by circling the eight descriptors that appealed to them. Also, they needed to select two items that *turned them off* and were required to underline these.

This exercise aided me in identifying my learners' learning preference and the visual profile of each learner (respondent) is represented diagrammatically in this chapter, simulating Herrmann's HBDI profile overlay. For each circled item per quadrant, I noted the quadrant displaying the most circled items and these circled items assisted me in identifying which quadrant was the dominant one. Moreover, I identified that four of my learners had a preference in more than one quadrant.

The simulated or hypothetical quadrant profile overlays displayed that in my class I had learners with varied learning preferences. The single dominant learning preferences are summarised as follows:

Figure 13 indicates that 5 respondents had a quadrant A learning preference, with intermediate learning preferences for quadrants B, C and D. Figure 14 specifies that only two respondents indicated the quadrant A learning preference, with intermediate preferences in quadrant B and D, with a low preference in quadrant C.

Figure 15 reveals that two respondents had a quadrant B learning preference. Figure 16 shows that five respondents functioned predominantly by utilising the quadrant C

learning preference. Figure 17 reveals that two respondents had a quadrant D learning preference.

The double dominant learning preferences are summarised as follows:

Figure 18 displays that two learners had a double dominant learning preference in quadrants C and D, which is aligned to my learning style profile. Figure 19 reveals that one learner had a double dominant learning preference in quadrants A and B. Figure 20 indicates that one learner had a double dominant learning preference in quadrants A and D.

1 2 2 2 Respondent 1, 2, 3 ,4, 10

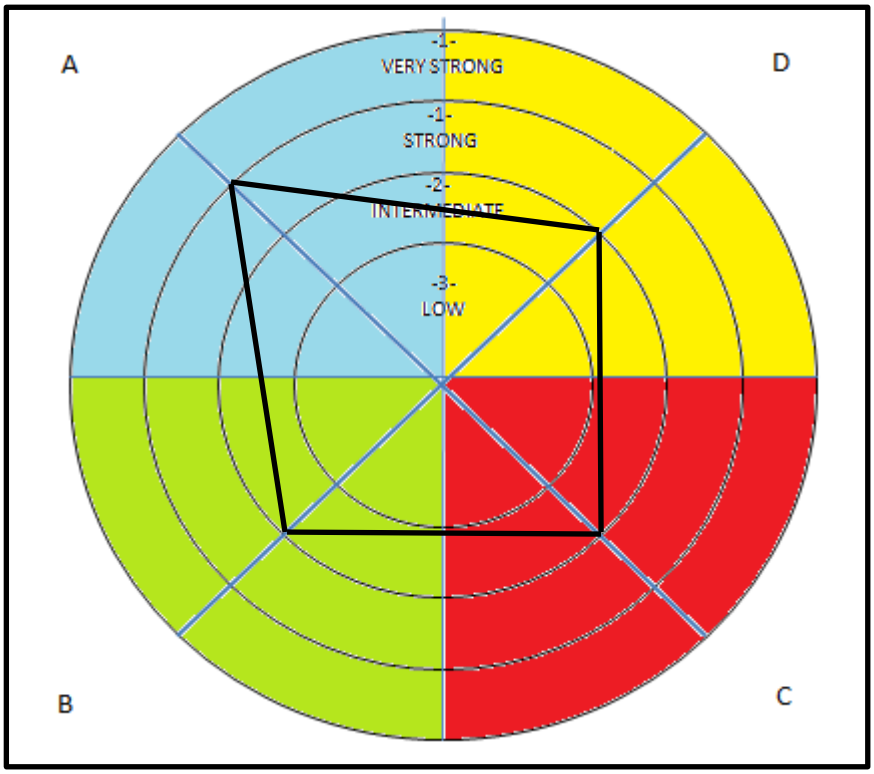


Figure 13: Simulated Single Dominant Profiles

This is a single dominant profile. The four-digit preference code 1222 can be identified using the order A, B, C, D. In this case the digit 1 corresponds to a strong preference in the A quadrant. The digits 2 correspond to an intermediate preference for the B, C and D quadrant. This means that the learner feels comfortable using these 3 quadrants. The key descriptor for the dominant A quadrant is a rational, logical, mathematical and analytical person. The preferred quadrant is the upper left A. The intermediate preferences function when needed,

but to a lesser extent is the Lower Left B quadrant which affirms the organised, controlled and planned preference modes. The Lower Right C quadrant involves emotional and interpersonal modes; and the Upper Right D encompasses synthesising roles. Work that includes analysing data, putting things together, working solo, mechanical aspects and solving tough problems are considered especially satisfying for one having this profile. Five of the learners in my class displayed this learning style profile.

1 2 3 2 Respondents 6, 16

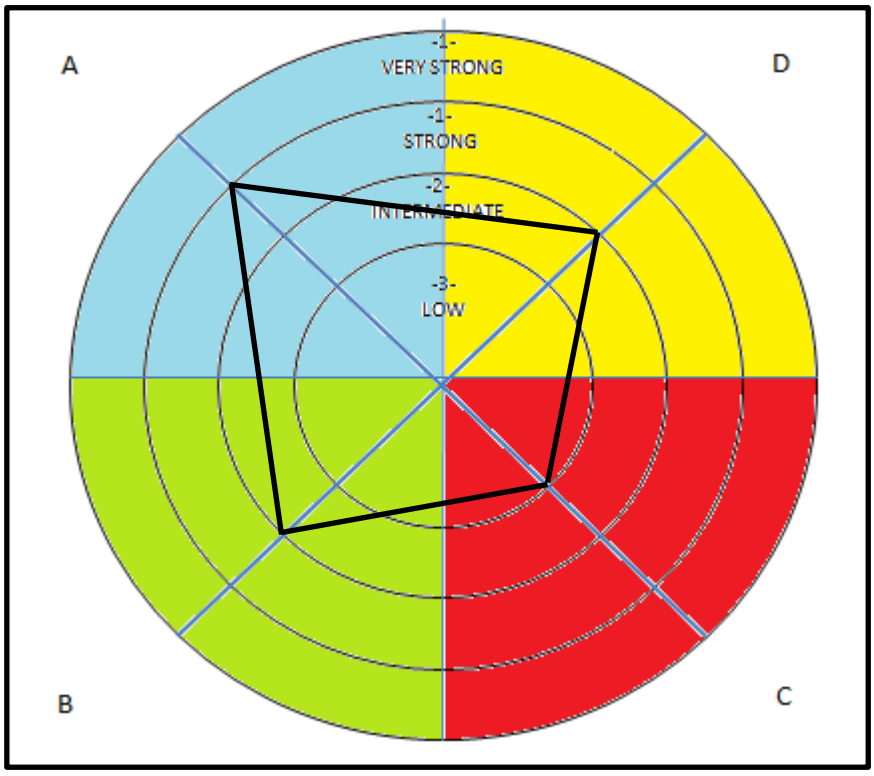


Figure 14: Simulated Single Dominant Profiles

This is a single dominant profile. The four-digit preference code 1232 can be identified using the order A, B, C, D. In this case the digit 1 corresponds to a strong preference in the A quadrant. The digits 2 correspond to an intermediate preference for the B and D quadrants. This means that the learner feels comfortable using these two quadrants. The preferred quadrant is the Upper Left A quadrant that features the characteristics of logical, rational, analytical, quantitative thinking and technical processing. The secondary preferences in the Lower Left quadrant B and the Upper Right quadrant D are functional in the processing modes of controlling, organising

and being conservative. The fourth quadrant, Lower Right C, is the least preferred one that includes the emotional, spiritual and interpersonal modes of processing. This person clearly shows the preferences characterised by the Upper Left A quadrant. However, there is a secondary inclination towards the Lower Left quadrant B and the Upper Right quadrant D that involves synthesising and organising. Work that includes financial aspects, working solo, applying formulas, putting things together and solving tough problems are considered especially satisfying for one having this profile. Two of the learners in my class exhibited this learning style profile.

2 1 2 2 Respondents 5, 19

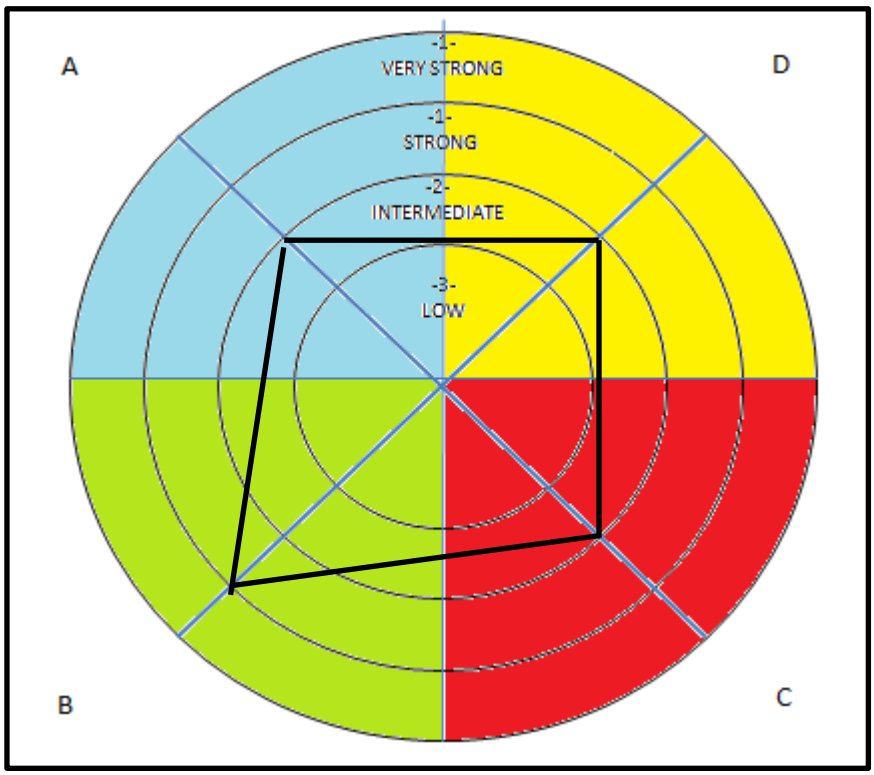


Figure 15: Simulated Single Dominant Profiles

This profile is a single dominant profile. The four-digit preference code 2122 can be identified using the order A, B, C, D. In this case the digit 1 corresponds to a strong preference for the Lower Left B quadrant. The digits 2 correspond to an intermediate preference for the A, C and D quadrants. This means that the learner feels comfortable using these three quadrants. The preferred quadrant is the Lower Left B quadrant that is characterised by a strong preference for the organisational,

planning, controlled and structured modes of processing. This learner can be classified as one who does not compromise detail and the implementation of activities. Although the single preference for quadrant B represents the primary mode of thinking for this learner, the Lower Right C quadrant, the Upper Right D quadrant and the Upper Left A quadrant remain well balanced and functional. The Lower Right C quadrant represents the emotional and interpersonal modes of thinking. The Upper Right D quadrant represents the conceptual, holistic and creative modes while the Upper Left A quadrant reflects rational, logical and analytical modes. This learner clearly indicates the preferences characterised by the Lower Left B quadrant. Work that includes being in control, getting things done timeously, establishing order, safety and attending to detail is considered especially satisfying for one having this profile. Two of the learners in my class showcased this learning style preference.

2 2 1 2 Respondents 7, 9, 12, 13, 15

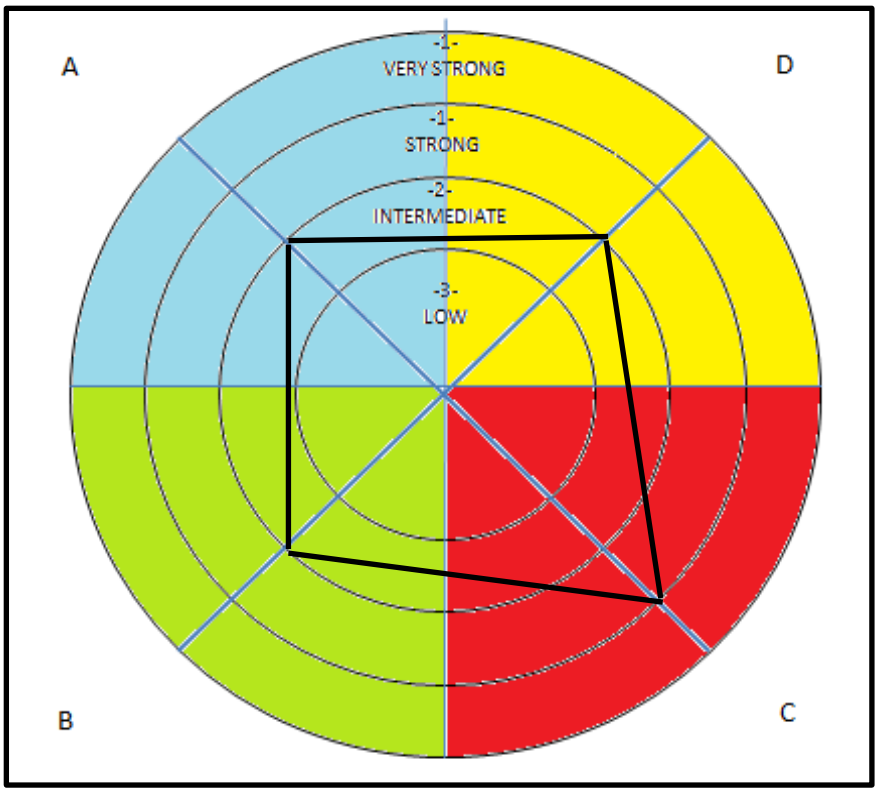


Figure 16: Simulated Single Dominant Profiles

This profile is a single dominant profile. The four-digit preference code 2212 can be identified using the order A, B, C, D. In this case the digit 1 corresponds to a strong preference for the Lower Right C quadrant. The digits 2 correspond to an

intermediate preference for the A, B and D quadrants. This means that the learner feels comfortable using these three quadrants. The preferred quadrant is the Lower Right C quadrant. One with this profile is characterised by a strong preference for the musical, spiritual, emotional, intuitive and interpersonal modes of processing. The secondary quadrants that are the Upper Left A, Lower Left B and Upper Right D, although functional are secondary to the Lower Right C quadrant. The Upper Left A quadrant is characterised by being well balanced in analytical, factual and logical characteristics. The Lower Left B quadrant is characterised by administrative and organising qualities; and the Upper Right D quadrant is characterised by creative, holistic and synthesising modes of processing. Work that includes listening and talking, coaching, helping people and getting groups to work cohesively is considered especially satisfying for one having this profile. Five learners in my class revealed a similar learning style preference.

2 2 2 1 Respondents 8, 20

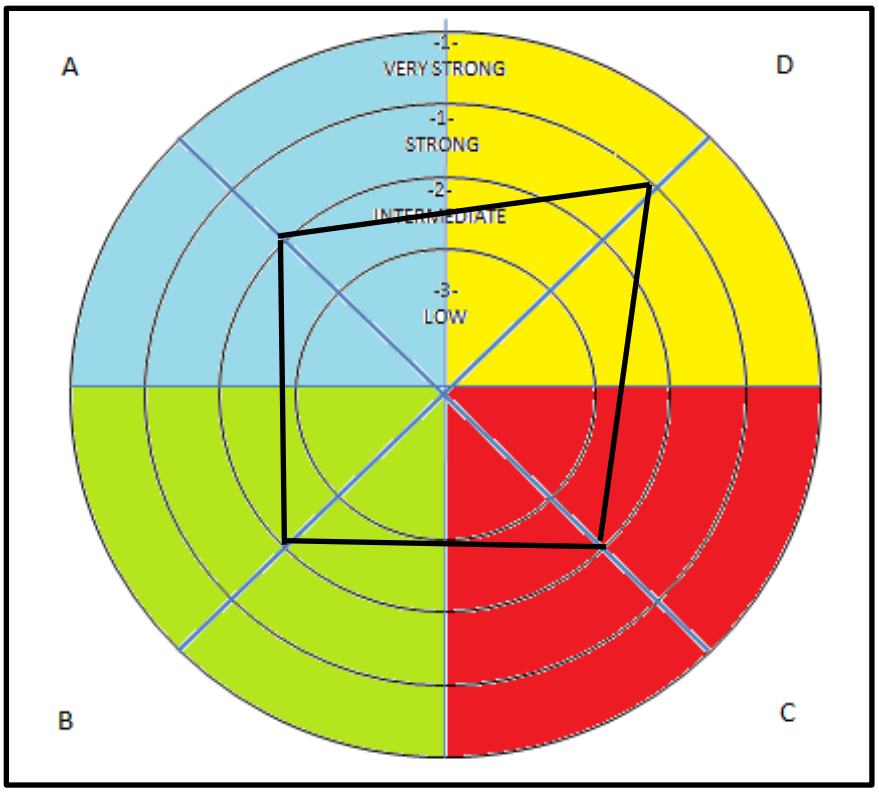


Figure 17: Simulated Single Dominant Profiles

This profile is a single dominant profile. The four-digit preference code 2221 can be identified using the order A, B, C, D. In this case the digit 1 corresponds to a strong preference for the Upper Right D quadrant. The digits 2 correspond to an

intermediate preference for the A, B and C quadrants. This means that the learner feels comfortable using these three quadrants. The preferred quadrant is the Upper Right D quadrant. One with this profile is characterised by a strong preference for the synthesising, holistic, imaginative and creative modes of processing, with synthesising being the most dominant mode. The secondary quadrants that are the Upper Left A, Lower Left B and Lower Right C, although functional are secondary to the Upper Right D quadrant. The Upper Left A quadrant is characterised by being well balanced in analytical, factual and logical characteristics. The Lower Left B quadrant is characterised by administrative and organising qualities; and the Lower Right C quadrant is characterised by spiritual, emotional and interpersonal modes of processing. Work that includes forward strategic thinking, transformation and taking risks is considered especially satisfying for a person of this profile. Two learners in my class operated with this learning style profile.

3 3 1 1 Respondents 11, 14

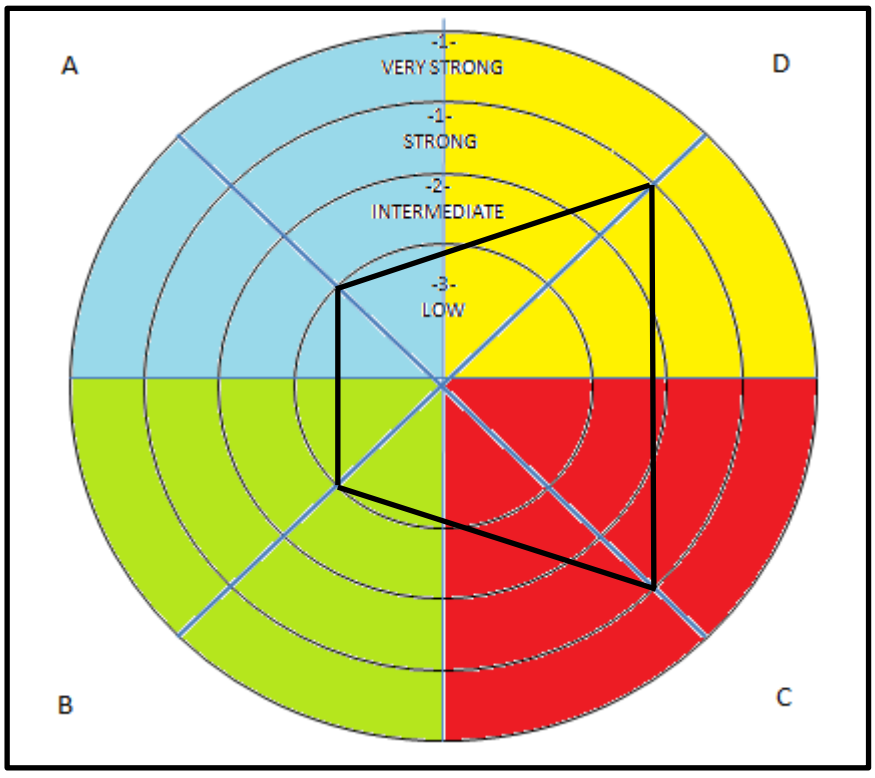


Figure 18: Simulated Double Dominated Profiles

This profile is a double dominant profile with the two most preferred modes of processing occurring in the right hemisphere with the two most preferred quadrants occurring in the Lower Right C quadrant and the Upper Right D quadrant. The four-

digit preference code 3311 can be identified using the order A, B, C, D. In this case the digit 1 corresponds to a strong preference for the Lower Right C and Upper Right D quadrants. The digits 3 correspond to a tertiary preference for the Upper Left A and Lower Left B quadrants. The preferred quadrants are the Lower Left C and Upper Right D quadrants. The Lower Right C quadrant is characterised by spiritual, emotional, and interpersonal modes of thinking and the Upper Right D quadrant displays aspects of conceptual, artistic, imaginative and holistic processing. The right mode primaries become more dominant because of the substantially lower preference for the left mode characteristics. The characteristics of Upper Left quadrant A include rational, logical and analytical thought could be completely avoided as well as the Lower Left B quadrant that encompasses characteristics involving organised, structured and controlled modes of thinking. One with this profile reveals intuitive, imaginative, emotional, creative and interpersonal qualities and does not display a strong inclination for organised implementation or rational thinking. Work that includes designing, dealing with the future, getting groups to work cohesively, assisting people and listening and talking is considered especially satisfying for one having this profile. Two respondents in my class displayed this learning style profile.

1 1 3 3 Respondents 17

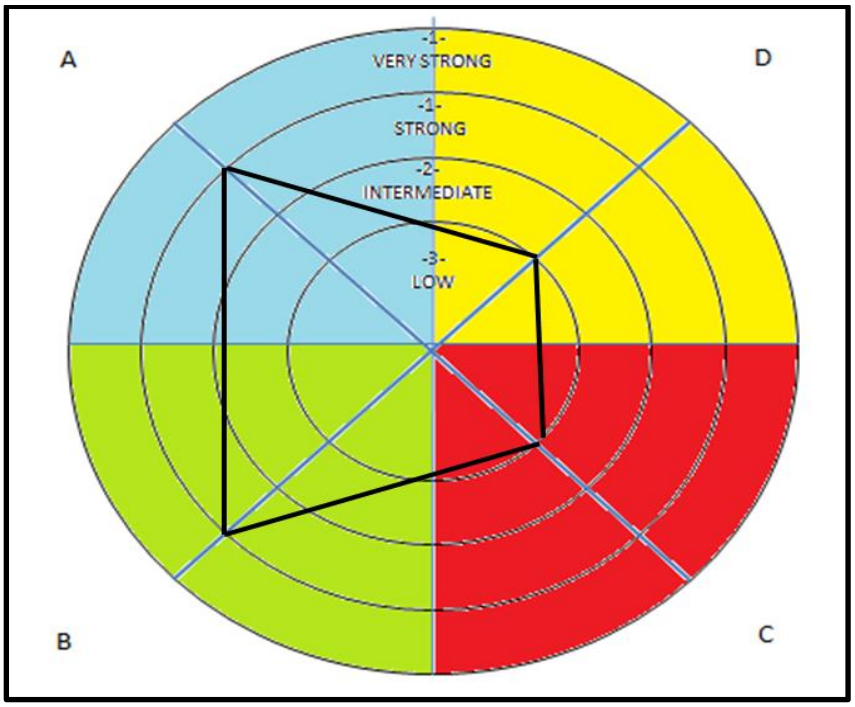


Figure 19: Simulated Double Dominated Profiles

This profile is a double dominant profile with the two strong primaries of processing occurring in the left hemisphere implying that the two most preferred quadrants are the Upper Left A quadrant and the Lower Left B quadrant. The four-digit preference code 1133 can be identified using the order A, B, C, D. In this case, the digit 1 corresponds to a strong preference for the Upper Left A and Lower Left B quadrants. The digits 3 correspond to a tertiary preference in the Lower Right C and Upper Right D quadrants. The preferred quadrants are the Upper Left A and Lower Left B quadrants. The characteristics of the Upper Left quadrant A that includes rational, logical and analytical thought as well as the Lower Left B quadrant that encompasses characteristics involving organised, structured and controlled modes of thinking are the most preferred. The Lower Right C quadrant is characterised by spiritual, emotional, and interpersonal modes of thinking and the Upper Right D quadrant that displays aspects of synthesising, imaginative and holistic processing is substantially less preferred or could be completely avoided. The left mode primaries become more dominant because of the substantially lower preference for the right mode characteristics. One with this profile is satisfied with making things work, building things, working solo, attending to details and planning. One respondent in my class had this learning style profile.

1 2 2 1 Respondent 18

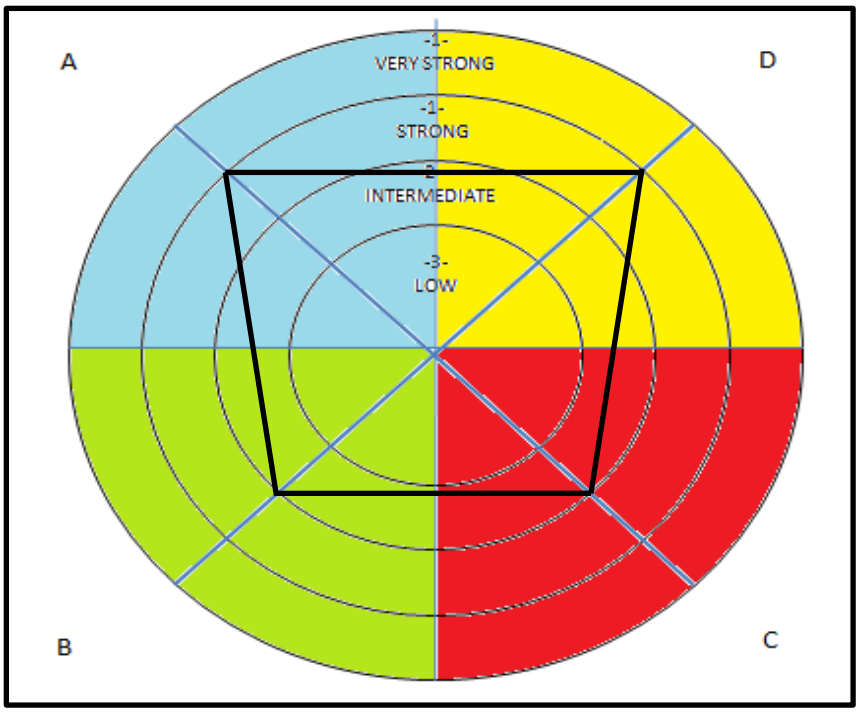


Figure 20: Simulated Double Dominated Profiles

This profile is a double dominant profile with the two strong primaries of processing occurring in the Upper Left quadrant A and Upper Right quadrant D. The four-digit preference code 1221 can be identified using the order A, B, C, D. In this case the digit 1 corresponds to a strong preference for the Upper Left A and Upper Right D quadrants. The digit 2 corresponds to a secondary preference for the Lower Left B and Lower Right C quadrants.

The strongly preferred quadrants are the Upper Left A and Upper Right D quadrants. The Upper Left quadrant A includes rational, logical and analytical thought as well as the Upper Right D quadrant that encompasses characteristics involving synthesising, imaginative and holistic processing are the most preferred. The Lower Right C quadrant is characterised by spiritual, emotional, and interpersonal modes of thinking and the Lower Left B quadrant, a secondary preference, displays aspects of organised, structured, accuracy and controlled modes of thinking. Individuals with this profile find it convenient to alternate between the two cerebral quadrants that are the Upper quadrants A and D, depending on the situation that presents itself. One with this profile would be satisfied with making things work, being challenged, inventing solutions, integrating ideas, bringing about change and working independently. One respondent in my class displayed this learning style profile.

4.2.1.3 Step 3: Reflection on Action Research

Figure 21 consolidates the simulated quadrant profiles of the 20 respondents. The results reflect that 30% of the respondents are quadrant A dominant, which means that their style of learning is logical and analytical, while 19% of the respondents are quadrant B dominant, which means that their style of learning requires detail and structure. 26% of the learners are quadrant C dominant, implying that their learning style enables them to be highly participative and team-oriented. The remaining 25% of the respondents are quadrant D dominant, revealing that their learning style is holistic and involves taking risks.

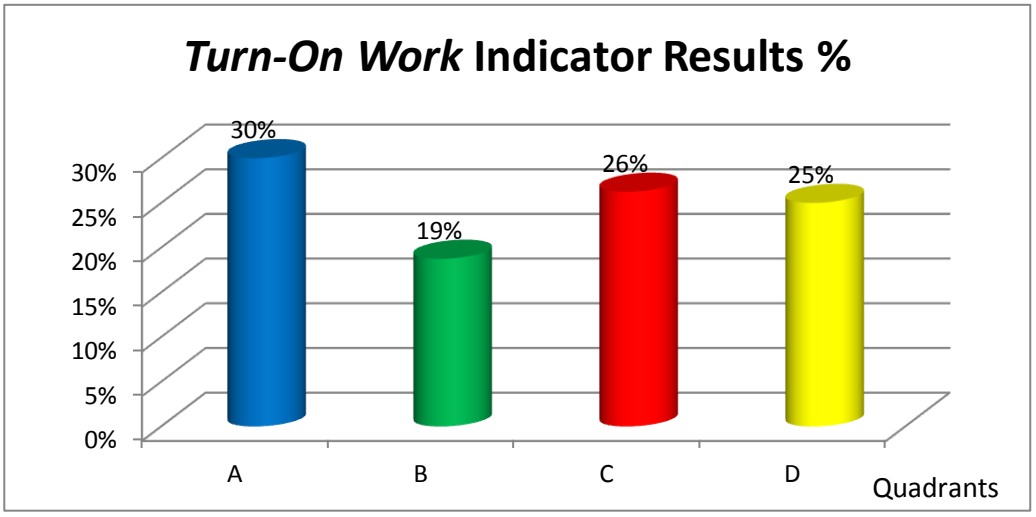


Figure 21: Consolidated *Turn-On Work* Indicator Results

4.2.1.4 Step 4: Observing Effects of New Actions

Once I had determined all the respondents' learning preferences or learning modes, I informed them of their quadrant preference of their respective *Turn-On Work* exercise. Thereafter I provided them with suggestions of Herrmann's (1996:36, 37) activities that they should perform "At Work", which I asked them to substitute for activities "At School", as well as "At Home" in order to assist them in developing their less preferred modes. These activities in which learners were asked to keep a record of "At Home" and "At School" activities in order to access and develop their less preferred modes are presented next. Their records were monitored twice a week over a period of six months.

Table 5: "At Home" Activities to help learners access and develop their less preferred modes

Source: Adapted from Herrmann (1996:37)

"At Home" Activities to Help You Access and Develop Your Less Preferred Modes	
Activities for right-mode dominant people to engage in and learn to conquer:	Activities for left-mode dominant people to engage in and learn to enjoy:
A **Upper Left Activities** • Predict what will happen tomorrow based on what you know today • Find out how a frequently used machine actually works • Take a current problem situation and analyse it into its main parts • Review a recent impulsive decision and identify its rational aspects • Convert your dreams into a quantitative formula • Join an investment club/open a bank account • Engage in some logic games	**D** **Upper Right Activities** • Fly a kite the way it is meant to be flown • Invent a gourmet dish and then prepare it • Play with clay and discover its inner meaning • Take a 15 minute 'theta break' (a relaxed brain wave state) before getting out of bed • Drive/cycle to 'nowhere' without feeling guilty • Run, don't jog • Take '500' photographs without worrying about the costs • Create a personal logo or mandala • Go dancing in your own style • Allow yourself to daydream • Imagine yourself in the year 2020
• Assemble a model kit by the instructions • Develop a personal budget • Prepare a personal list of assets/belongings • Jog monitoring your stride and/or heart rate • Organise your CDs or DVDs in sequence according to categories • Prepare a family tree • Go ballroom, square or line dancing • Find a mistake in your/a bank statement • Organise your home and garden tools • Be exactly on time all day • Organise your picture files **Lower Left Activities** **B**	• Play with children/peers the way they want to play • 'Dance' without moving your feet • Take a 10 minute 'feeling break' every morning, afternoon and evening • 'Love' a pinecone or any other natural thing • Play the music you like when you want to hear it • Allow tears to come to your eyes without feelings of shame or guilt • Experience your own spirituality in a non-religious way • Discover things children/peers have taught you, and find ways to thank them **Lower Right Activities** **C**

Table 6: "At Work"/"At School" Activities to help learners access and develop their less preferred modes

Source: Adapted from Herrmann (1996:36)

"At Work"/ "At School" Activities to Help You Access and Develop Your Less Preferred Modes	
Activities for right-mode dominant people to engage in and learn to conquer:	Activities for left-mode dominant people to engage in and learn to enjoy:
A **Upper Left Activities** • Analyse and solve a technical problem • Read and understand a budget or financial report • Calculate your salary/allowance per minute/second • Learn a new computer programme that would enhance your performance • Clearly define goals for the next term • Learn to use a spreadsheet and develop a budget report for your family • Conduct a statistical analysis • Use logic in your decision-making	**D** **Upper Right Activities** • Set aside time for idea generation and think of at least one 'crazy' idea per day • In your 'mind's eye" (with your eyes closed imagine your organisation/school 10 years from now • (Re-) decorate your office/work space; add creative toys and/or posters to the décor • Design a 'logo' for your job/school • Instigate a brainstorming session on an important issue • Illustrate a memo to a colleague/peer • Make a decision based on intuition • Conceptualise a new programme or product for your organisation/school
• Use a 'time-log' to record your daily activities with precision • (Re-) organise your filing system; your desk • Create a 'things-to-do' list and check off items when done • Plan out a project in detail and follow through with it • Arrive on time at work/school or for appointments all day • Create a highly detailed job description • Read the policy manual/school code of conduct and keep it accessible for reference • Be conservative and safe-keeping in your decision-making **Lower Left Activities** **B**	• Spontaneously recognise another peer in a way that is personal and meaningful for them • Be aware of your nonverbal communication and make it friendlier, e.g., smile, be relaxed • Motivate others to have a fun, 'people' event • Volunteer to assist a co-worker on a company project • Trying playing a 'music' radio station in the background while you work • Spend at least 15 minutes per day getting to know others personally • Make a decision using team consensus **Lower Right Activities** **C**

4.2.1.5 Step 5: Evaluation of my Innovative Practice

The results from my HBDI and the *Turn-on Work* Indicator Map affirmed that there were many learners who were not aligned with my learning profile and therefore I not only needed to be aware of this anomaly, but I also needed to plan all learning opportunities from this stage on so that they incorporated activities that expanded and accommodated learning style diversity and multiple intelligences. My aim was to develop a holistic model by exposing my learners to the practical components of these learning theories. These activities also assisted me in creating learning opportunities that embraced developing all four quadrants of the brain that incorporated the second cycle of my action research. Some of these innovative learning opportunities are presented next.

4.2.2 Cycle 2 of my Visionary Action

4.2.2.1 Step 1: Acting to Innovate and Improve

Designing and Implementing Holistic Learning Opportunities

I needed to create a variation of learning experiences that allowed my learners to access the cognitive functions of all four quadrants, instead of focusing on a learning activity that favoured utilising only a particular quadrant, inevitably advantaging only a few of my learners who preferred that specific mode of learning. Consequently, my activities were designed to accommodate the diverse learning preferences while simultaneously allowing them to activate their less preferred modes of learning.

Ideally I would have preferred to divide the learners into groups with a representation of learners from each quadrant so that there were 'experts' from each quadrant represented in one group. For example, each specific group could be constituted of four learners: a learner with a strong quadrant A learning profile, a strong quadrant B learning profile, a strong quadrant C learning profile and a strong quadrant D learning profile. This arrangement could allow each learner to benefit from the strengths of the other three learners. However, this equal distribution was not feasible because of the varied quadrant profiles prevalent in my class. I then allowed learners to select their own teams to complete activities that finally resulted in creating their own film trailer.

Next is a copy of the learning opportunities supplied to each learner:

CANNED ORAL

Instructions

1. Work in groups of three to five people. Make sure that one learner in the group has access to visual recording equipment such as a camcorder, webcam, or cellular phone if applicable.
2. You have all read and listened to the play *An Inspector Calls*. Now your teacher will show you two videos from YouTube of a trailer based on the play *An Inspector Calls*.
3. Then it is your turn to create your own original trailer of this play or another play, novel or film relating to the genre of crime and investigation.
4. Write the script, and then act it out while recording it.
5. You should allot equal recording time to each member in your group.
6. Your trailer should be approximately 2 to 4 minutes of duration.
7. Remember that it takes a long time to record, so do not leave it until the weekend before the task is due!
8. Consider all the techniques that you have learnt about film production.
9. Please finalise your trailer on a DVD.
10. Your DVD must be labelled with your names.
11. Create your own DVD cover to promote your trailer.
12. Include Bloopers.

Group Members

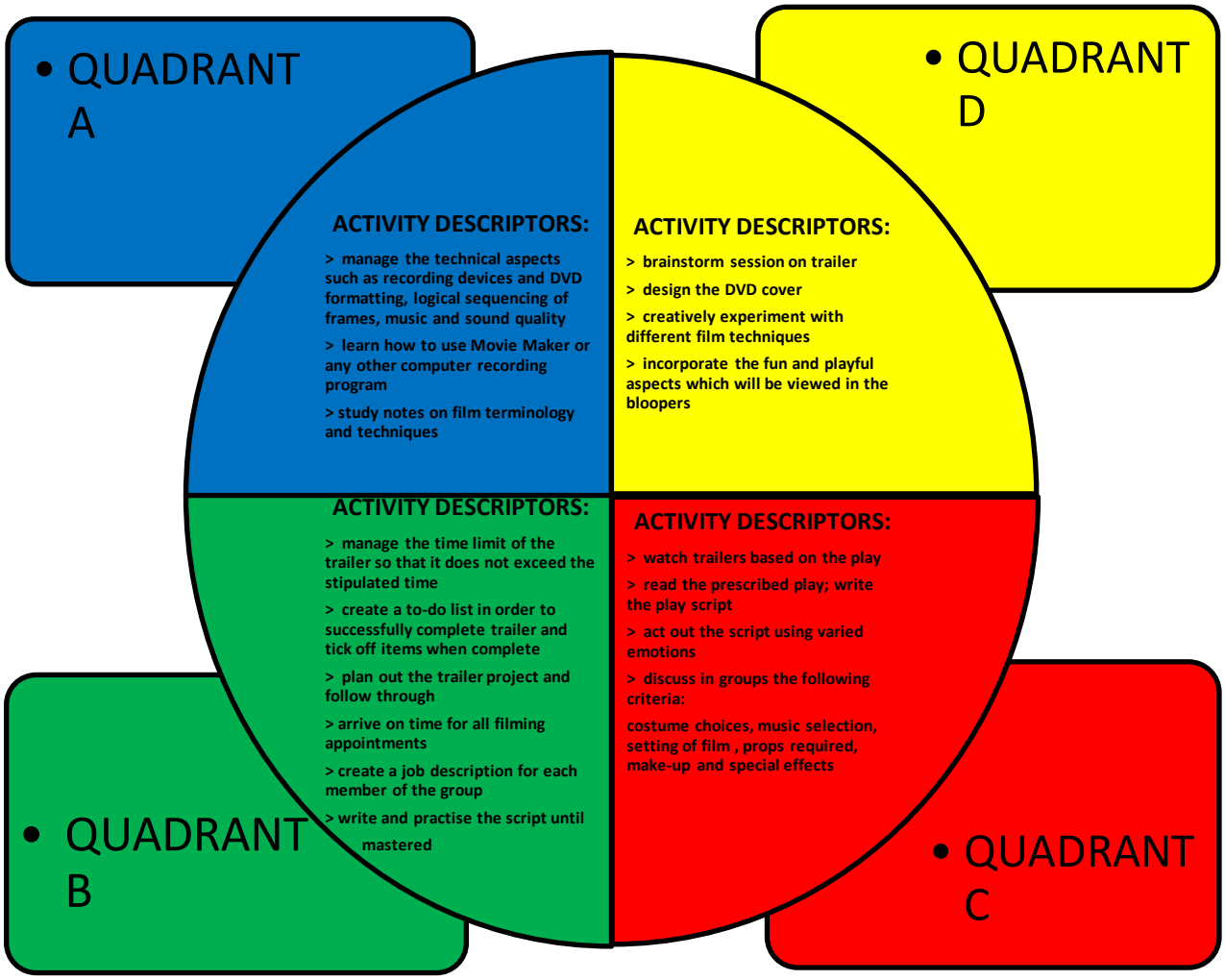
1. _____
2. _____
3. _____
4. _____

EDUCATOR'S SIGNATURE: _____

CANNED ORAL TRAILER ASSESSMENT RUBRIC										
	Rating Code		7 80-100%	6 70-79%	5 60-69%	4 50-59%	3 40-49%	2 30-39%	1 0-29%	
	Descriptors of Competence	Possible Mark	Outstanding Achievement	Meritorious Achievement	Substantial Achievement	Adequate Achievement	Moderate Achievement	Elementary Achievement	Not achieved	Actual Mark
	Criteria									
1	Learners worked cohesively; participated constructively in class/group discussions and planned and managed their time frames effectively.	10								
2	Quality of script or storyboard is original and creative and encompasses the elements of a detective genre.	10								
3	Lighting quality and variety of camera techniques and shots - tilted, high angle, low angle, other camera techniques: zooming and panning.	10								
4	Production has a creative title and DVD is labelled appropriately. It must be in a trailer format. DVD cover included.	10								
5	Adherence to set time limit of trailer (2-4 minutes) .	10								
6	Sound quality – audible and clear.	10								
7	Style of acting and costumes – a variety of credible acting techniques used, emotions successfully conveyed. Costumes and props used should complement their acting skills.	10								
8	Music included and appropriate to theme.	10								
9	Bloopers included which confirms that editing took place. Logical sequencing of frames and effective editing skills used.	10								
10	Credits included at the end of the trailer and all sources acknowledged.	10								
TOTAL		100								

Dear Learner

You are now aware of your own learning preference (s), which is a strength that will be accommodated in your group. Your focus now should be to involve yourself actively in all of the activities in order to develop all four quadrants of your brain resulting in a holistic learner. Below is a diagrammatic representation of the prescribed learning opportunities, according to each quadrant.



Now create your own Oscar nomination trailer!

Learning Opportunity 1

Learners were required to read the prescribed play *An Inspector Calls* by J.B. Priestley and watch the film thereafter. This learning opportunity stimulated the lower right quadrant C of the brain. It also accommodated Gardner's (1996) verbal, interpersonal and visual intelligences. This learning opportunity was conducted over a period of two weeks with a lesson consisting of 55 minutes per lesson in which learners were allowed to express their views of characterisation, thematic concerns and plot.

Learning Opportunity 2

Learners were instructed to create an original movie trailer in order to promote the launch of their fictitious detective movie. In order to assist them with their task, they watched trailers based on the play *An Inspector Calls* that were available on *YouTube*. Following this, they needed to brainstorm their ideas about the content of the trailer in their allotted groups. Thereafter they were required to write their own play script in groups that experimented with different film techniques and encompassed the spirit of a detective genre. Learners were encouraged to work collaboratively and all members in the group needed to contribute to the development of the script. These learning opportunities accessed quadrants A, C and D of the brain and encompassed verbal and interpersonal intelligences. Learners could refer to their notes on film terminology and techniques when writing their scripts. These activities were conducted over a period of three weeks. Learners were given time in class and could work on the project after school as well.

Learning Opportunity 3

Learners were required to create a to-do list in order to plan and to complete the trailer successfully. Once each activity had been completed, they were requested to tick off items when complete. Moreover, they needed to create a job description for each learner of the group in order to ensure a fair distribution of roles. This learning opportunity accessed quadrant B and involved the verbal, logical and interpersonal intelligences and required two lessons to complete.

Learning Opportunity 4

Learners were given the opportunity to type their scripts and edit it, using the language editing tools on their laptop. Final copies were printed for all the members of the group. This activity accessed a combination of quadrants B, C and D. The multiple intelligences incorporated were verbal and interpersonal intelligences. Learners were given a time frame of one week to complete this activity.

Learning Opportunity 5

Learners were requested to discuss the following criteria in groups in order to prepare for the filming process:

- The choice of costume that reflected the theme of their trailer.
- The selection of appropriate music.
- The location or the appropriate setting in which to film their trailer.
- The inclusion of suitable props, make-up and special effects.

These tasks accessed quadrant C and they involved verbal, musical and interpersonal intelligences. This activity was completed in one week.

Learning Opportunity 6

Learners were requested to rehearse the script at least five times, using varied emotions before their final filming. They were required to arrive on time for all filming appointments. They needed to experiment creatively with different film techniques. They could record their trailers using a camcorder, tablet or cellular device. These activities accessed quadrants B, C and D and involved seven of Gardner's intelligences including verbal, mathematical, visual, musical, bodily, intrapersonal and interpersonal intelligences. Naturalistic intelligence would be accessed if filming occurred in a natural environment. These activities progressed over a period of six weeks.

Learning Opportunity 7

Learners were taught how to use Movie Maker (a software program) as an editing tool. However, they were allowed to use any other recording/editing computer programs if they were competent in using those software packages. They were informed on how to manage technical aspects, such as DVD formatting, and logical sequencing of frames and enhancing music and sound quality. Learners were also

made aware that they needed to manage the time limit of the trailer so that they did not exceed the stipulated filming time of approximately 2 to 4 minutes. In the editing process, learners were requested to incorporate fun and playful aspects at the end of their trailer as “bloopers”, indicating the funny mistakes made while filming. These bloopers showcased that the editing process did occur and that learners made an attempt to improve the quality of their final trailer. Finally, learners were requested to provide a title for their trailer and credits at the end, acknowledging and giving recognition to the people, music, websites and other source entities. They were reminded to consider the typography of their title, and to design one that is visually appealing. These learning opportunities accessed quadrants A, B and D. In addition they utilised verbal, logical, spatial, musical, bodily and interpersonal intelligences. This activity required three weeks to complete.

Learning Opportunity 8

Learners were required to design an original and creative DVD cover and submit their final version of the trailer. This accessed quadrant D and involved verbal, visual and interpersonal intelligences. This activity required one week to complete.

The above eight learning opportunities allowed me to act on my innovative idea by allowing learners to access the different quadrants of their brain, resulting in deeper learning and maintaining rigorous academic standards as well as accommodating learning style flexibility. Moreover, it proved to be the ultimate integrated learning strategy as the learners were able to enhance their intelligences, especially their less dominant ones. It encompassed both multiple intelligences and holistic learning profiles.

4.2.2.2 Step 2: Reflecting on the Action

This task was completed by all twenty learners in my class and the various activities encompassed within each learning opportunity allowed my learners to engage rigorously in a learning process and develop each quadrant of their brain. I did not focus exclusively on activities that were aligned with my learning style preferences, which are quadrants C and D, but rather on integrated activities from quadrants A and B as well. As a result, I promoted holistic education by encouraging learners to utilise their less preferred learning style and accommodate their preferred mode of learning while still maintaining rigorous academic

standards. Du Toit (2004) supports this theory by stating that all learning experiences should be constructed in this way to develop the full potential. In addition, Du Toit (2004:153) emphasises that "[d]esigning learning activities in such a whole-brain way provides the basis for bridging the gap between the unique individual learner and the design and delivery of learning, therapy, assessment or intervention".

In order to apply each criterion, a rating code of 1 to 7 was utilised together with the seven descriptors of competence. A learner who achieved a rating of 7 was awarded an outstanding achievement and was ranked 80% to 100% accordingly. A learner who achieved a rating of 6 was awarded a meritorious achievement and was ranked 70 to 79% accordingly. A learner who achieved a ranking of 5 was awarded a substantial achievement and was ranked 60% to 69% accordingly. A learner who achieved a rating of 4 was awarded an adequate achievement and was ranked 50% to 59% accordingly. A learner who achieved a rating of 3 was awarded a moderate achievement and was ranked 40% to 49% accordingly. A learner who achieved a rating of 2 was awarded an elementary achievement and was ranked 30% to 39% accordingly. Finally, a learner who achieved a ranking of 1 was awarded in the category not achieved and was ranked 0% to 29% accordingly.

There were ten criteria that needed to be met in relation to the learning opportunities presented. I report on the learning outcomes achieved for one of the groups in the class as evidence of a trailer completed. The images that appear next are followed by the rating of the learning experience and an explanation of each criterion.

Criterion 1

Image A

This group achieved a rating of 7 as they worked cohesively and participated constructively in all of the class and group discussions. They created a to-do list and adhered strictly to the time frames.

Criterion 2

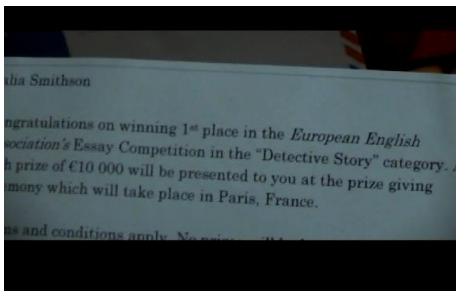


Image B

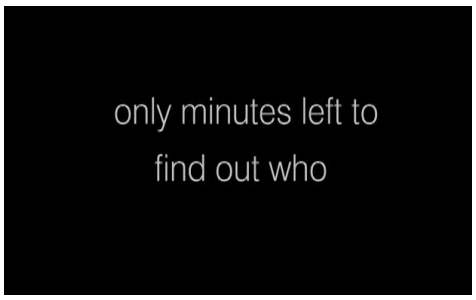


Image C

Image D

Images B, C and D show that their script included elements of suspense and the genre of mystery and sleuthing. Learners obtained a rating of 7 as they successfully met the criterion requirement.

Criterion 3

Image E

Image F

Image G

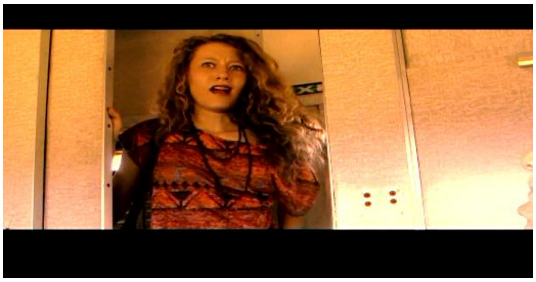


Image H

Image I

Image J

Image K

Image L

Image M

Images E, F, G, H, I, J, K, L and M highlight the use of a variety of camera shots and camera angles used in the filming of the trailer. Camera movement, including tracking or the dolly shot, which allows the viewer to become part of the action, was included and resulted in an entertaining trailer. The lighting was effective as it exposed a variety of emotions and created a false sense of security that this was going to be an average train ride. Shortly after, the scene changes and there is anxiety, tension and an ominous atmosphere that prevails with the inclusion of dark and shadowed effects. These learners also integrated colour in their composition of shots as well as black and white sequences effectively.

Learners obtained a rating of 7 for this learning outcome.

Criterion 4

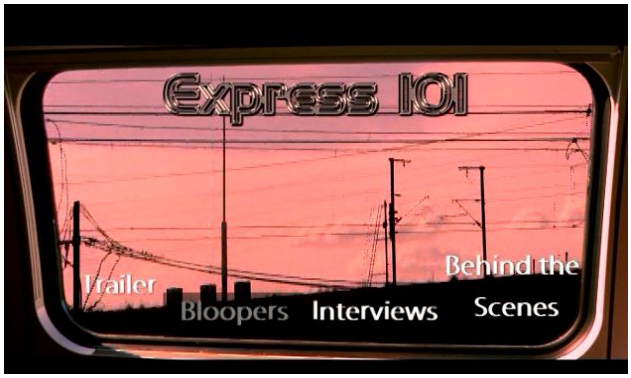


Image N Image O

Learners received a rating of 7 for this learning outcome. They had a creative title called “Express 101”, indicated in the images N and O. “Express” refers to the train that they were using and “101” connotes that this is not a basic train ride. Their trailer was presented in the form of a DVD and a visually appealing DVD cover was included.

Criterion 5

Image P

The learners received a rating of 7 as they adhered to the set time limit of the trailer which was 2 to 4 minutes as indicated in image P.

Criterion 6

The learners received a rating of 7 as the sound quality was audible and clear at all times.

Criterion 7

Image Q

Image R

Image S

Image T

Image U

Images Q, R, S, T and U prove that the learners used a variety of credible acting techniques and successfully conveyed the emotions of their experiences. The costumes and the props complemented their acting skills. The costumes played an important role in character development. The characters were clothed in casual clothing expecting an ordinary train ride until an unexpected murder occurs. Their clothing is functional and fits the time period in which the film is set. Learners achieved a rating of 7 for this learning outome.

Criterion 8

Image V

The learners' musical score (music selection indicated by image V) was a fusion of tranquility that escalated to one that evoked emotions of unease, tension and fear. The learners received a rating of 7 for this learning outcome.

Criterion 9

Image W

Image X

The arrangments of shots, the selection of scenes and the timing of events showed that the learners produced an effective trailer as depicted in images W and X. Their editing process showed that they had selected scenes that would convince a viewer that this could be a riveting and entertaining trailer to view.

There was a seamless scene transition from beginning to end as each sequence was woven together, creating a masterpiece. The learners received a rating of 7 for this learning outcome.

Criterion 10

Image Y

Image Z

The credits at the beginning of the trailer introduce the viewer to the main characters that would feature. The credits at the end of the trailer were extensive and acknowledged the cast members, producers, director, screenwriters, casting directors, costume and make-up artists, the special effects, camera operators, filming location and songs used in the trailer.

The only drawback to the credits was that the learners included an image of Nu Metro Cinemas and Ster Kinekor Entertainment, shown in image Z, and had not obtained permission from these enterprises.

In my opinion this was a minor transgression as learners could simply edit this scene and delete the image. Therefore the learners received a rating of 6 for this learning outcome.

Overall, this trailer received a 7 rating, which is classified as a distinction, as it was skilfully filmed and epitomised film techniques of a superior nature.

When completing the Canned Oral and other activities involving the whole brain, learners were encouraged to utilise their less preferred learning style either through personal learning strategies or through co-operative learning.

4.2.2.3 Step 3: Observing the Effects of the New Actions via Feedback from Learners

Appendix 6 presents the Learner Feedback Instrument that consisted of a questionnaire with 11 questions requesting the learners' opinions about my alternate teaching practice and the inclusion of the varied learning opportunities linked to learning style diversity. This questionnaire was to be filled out anonymously and the data collected was compiled on a group basis and no individual respondent was targeted. Each question had a choice of five responses as depicted in the graphs.

The data collected from this questionnaire assisted me in monitoring and assessing the quality of my innovative teaching practice. The graphical display of results shows that 80% to 95% of all learners were interested in the alternative teaching style and they thought that the innovative teaching style was effective, stimulating, organised, interesting, realistic, well planned and allowed for the use of a wide range of media that resulted in enhancing thejr learning process.

The graphical display of the results in Figure 22 shows that 65% of the learners in my class strongly agreed that I had communicated the learning opportunities clearly, whereas 30% agreed to an extent that this was the case. This implies that a large percentage of learners clearly understood what the objective of the Canned Oral Activity was. Furthermore, it indicates that 5% of the learners were neutral in their responses to this question. In general, it is evident that all learners understood the objective of the innovative idea. Evidence of this is shown in the successful completion of the activity by all learners.

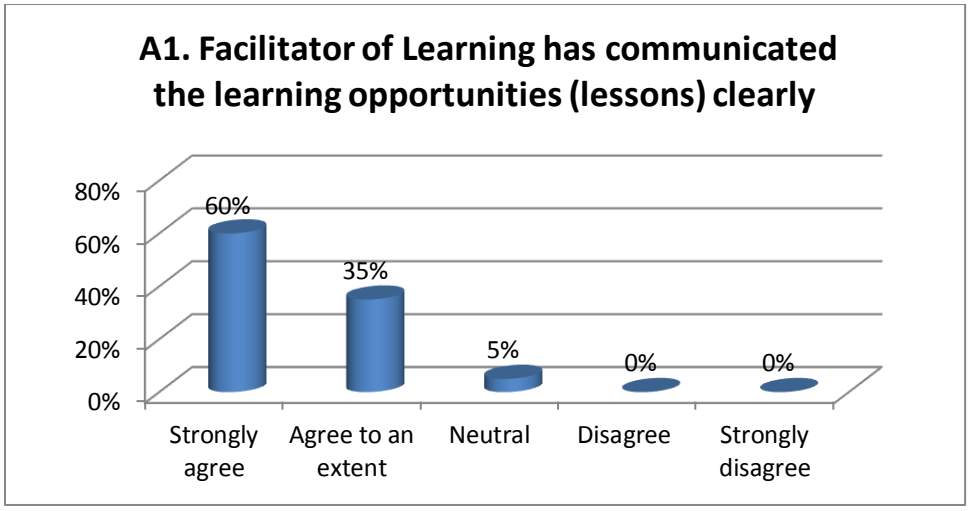


Figure 22

Figure 23 indicates that 90% of the learners strongly agreed that I was well prepared for the classes whereas 10% agreed to an extent that this was the case. None of the learners agreed that I was not well prepared for classes. This provided a sound platform in creating successful learning opportunities for all learners.

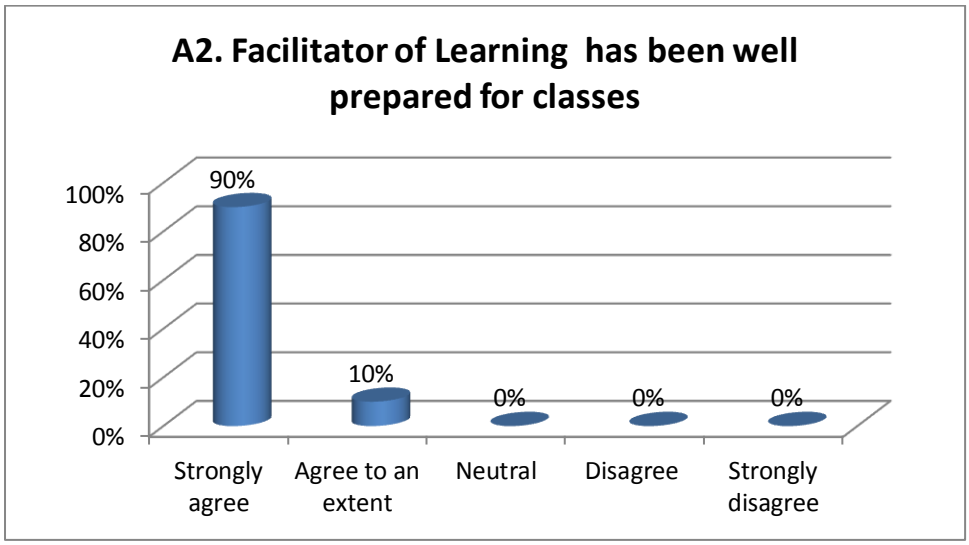


Figure 23

When asked how effectively I organised class time (Figure 24), 80% of the learners strongly agreed that I had organised class time effectively, while the remaining 20% agreed to an extent that this was the case. None of the learners agreed that I had not organised class time effectively. This implied that each of the learning opportunities was communicated and completed in a realistic time frame to allow the learners sufficient time to complete the Canned Oral Learning opportunity successfully.

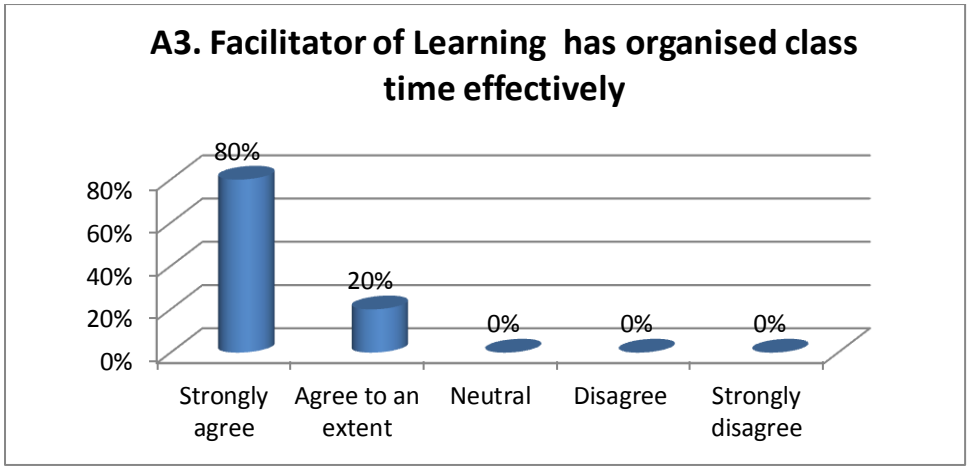


Figure 24

Figure 25 indicates that 60% of the learners strongly agreed that I stimulated their interest in the learning opportunity by integrating activities linked to their learning style diversity; 25% agreed to an extent, 15% were neutral to this question and none disagreed. These results prove that by introducing innovative learning style opportunities, the interest levels of all learners were heightened. Consequently, by integrating these activities, learners were able to comprehend and deliver on the objectives of the learning opportunities with ease. The activities presented allowed active participation of all learners regarding the respective learning style diversities. The successful outcomes of the learning opportunities indicate that the facilitator of learning should continue on this path.

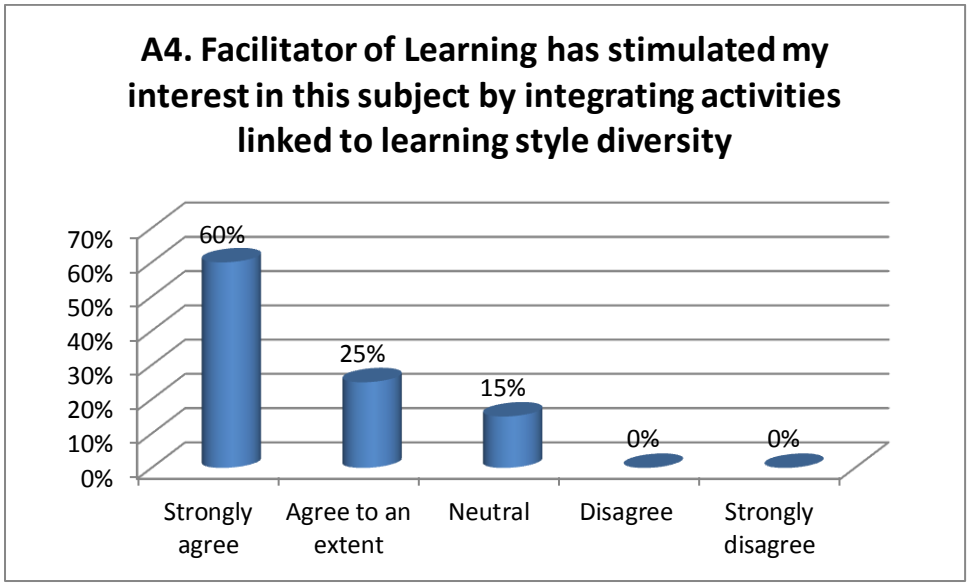


Figure 25

When asking about my responsiveness to learner queries and concerns about the learning opportunity, 60% of learners strongly agreed that I was responsive, 20% agreed, while 20% remained neutral (Figure 26). None of the learners indicated that I was unresponsive. The statistics emphasise that the learners were comfortable with the innovative learning opportunity requirements, allowing them to produce very successful Canned Oral trailers.

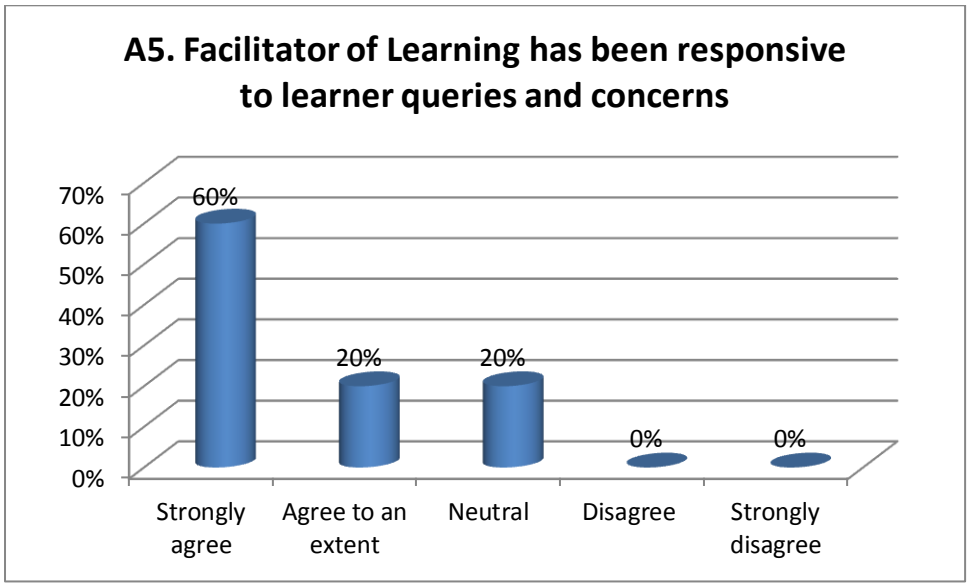


Figure 26

Looking at the spread of results in Figure 27, it is clear that I had explained the aim, that is, implementation of an innovative idea and assessment expectations adequately to the learners, as 70% strongly agreed to this statement, 25% agreed to it, 5% found this neutral whereas none disagreed. When assessing the Canned Oral learning opportunities, this evidently was proved as all learners benefited from this by achieving an assessment of 5 (60 to 69%) and above.

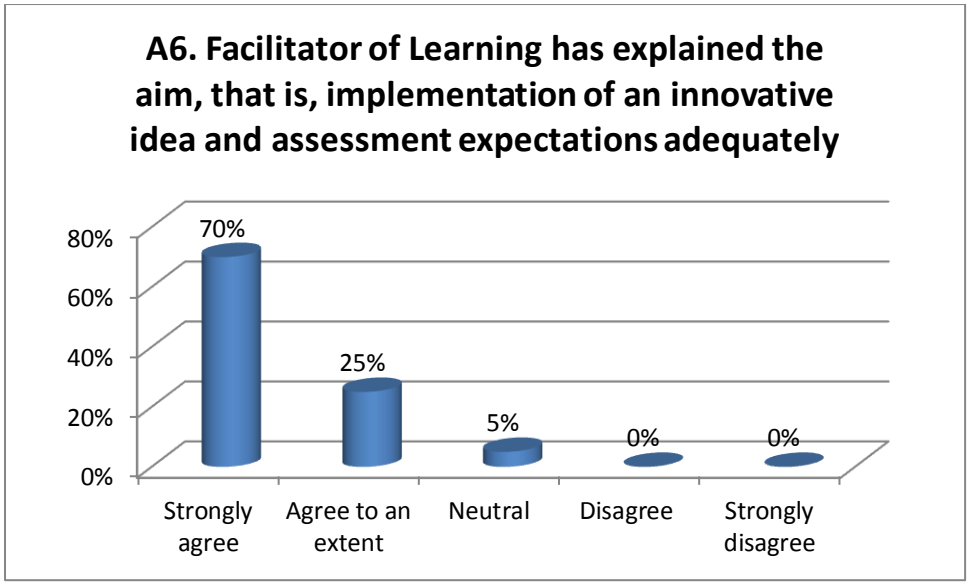


Figure 27

According to Figure 28 all learners believed that I had used media effectively in communicating the objective of the innovative learning opportunities in which 60% strongly agreed, 35% agreed, 5% remained neutral and 0% disagreed. Using these media facilitated better understanding and resulted in effective execution of the learning opportunities because the learners were made aware of how to use multimedia, the internet and most importantly, the Movie Maker software. This allowed learners to produce exciting Canned Oral trailers that made them embrace the idea of becoming holistic learners.

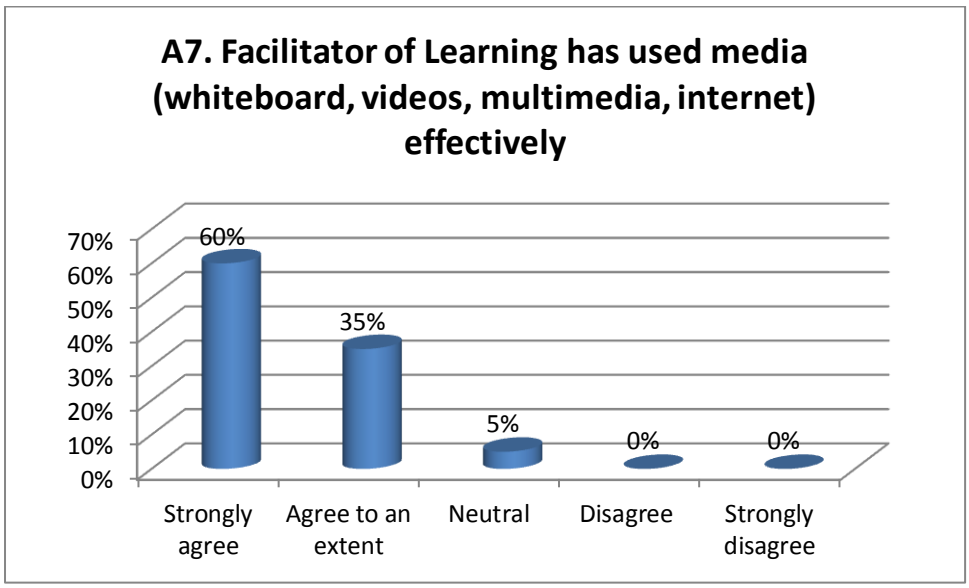


Figure 28

The assessment activities for the learning opportunity were found to be holistic and relevant by 65% of the learners as they strongly agreed to this statement, supported by 30% who agreed, 5% remained neutral and none disagreed. The assessment activities by which the learning opportunity objectives were measured, featured in the learning opportunity descriptors, provided a holistic and sound platform. These descriptors encompassed the holistic learning areas of the four quadrants A, B, C and D, which expanded the identified deficient areas of all learners concerned and accommodated their learning style preference or preferences.

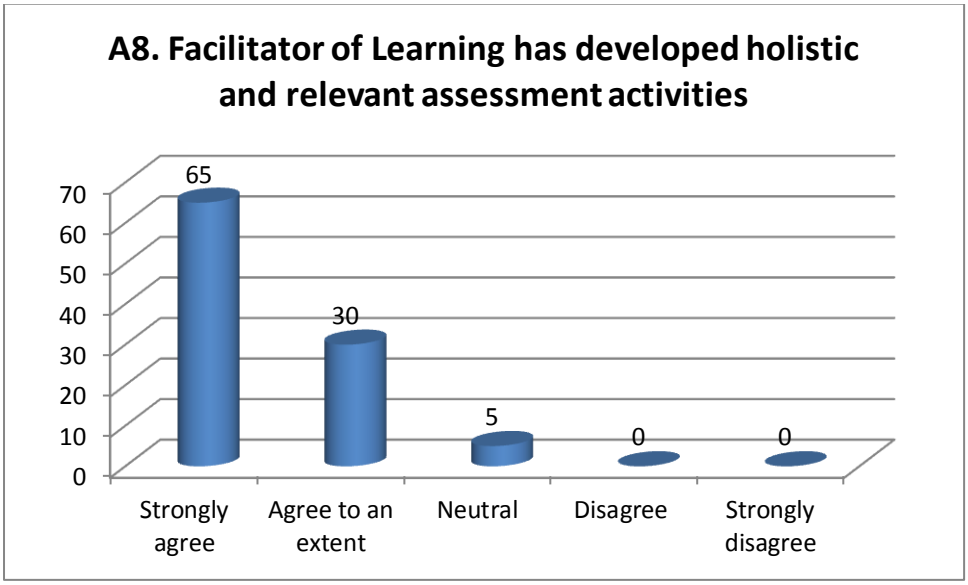


Figure 29

Figure 30 highlights that 55% of the learners acknowledged strongly that I provided useful feedback on their learning opportunities within a realist time frame, 25% agreed, 20% were neutral and 0% disagreed. In general, it can be surmised that at least 80% of all learners were satisfied with the feedback they received from me on their Canned Oral trailer. This is gratifying, as it shows the consistency in approach, from defining the objectives of the learning opportunities, assessing the learning opportunities and providing accurate timeous feedback on the learning opportunities to the learners. Furthermore, this consistency strongly emphasises that holistic learning is an effective methodology in achieving successful results from learners with different learning styles.

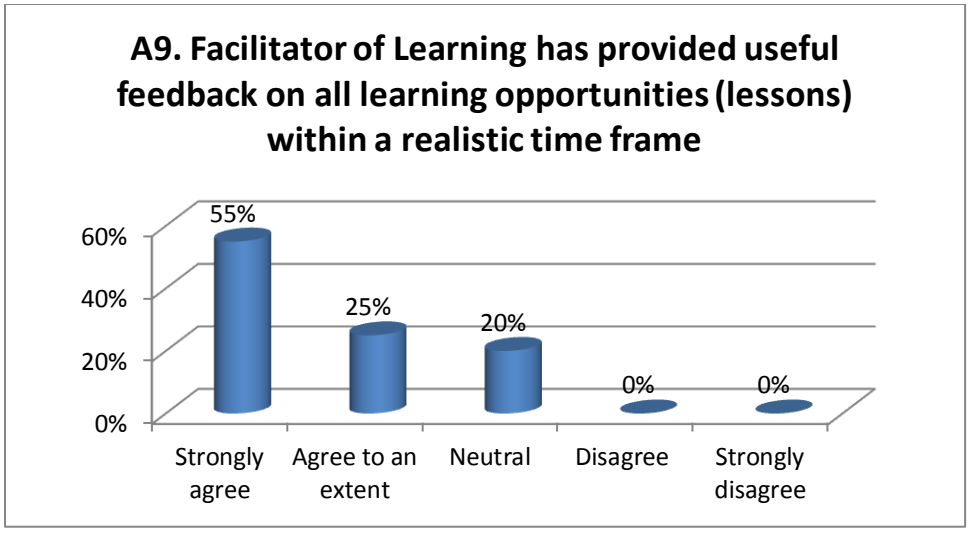


Figure 30

The results displayed in Figure 31 are rather pleasing as 80% of the learners felt strongly that I had made a genuine effort to enhance effective and holistic learning, 15% agreed and 5% remained neutral to this statement. The statistics prove that the learners felt that they had benefited from this intervention and that they had supported this intervention. The successful results of all learners achieving a descriptor level of 5 (60% to 69%) and over, reiterate this finding.

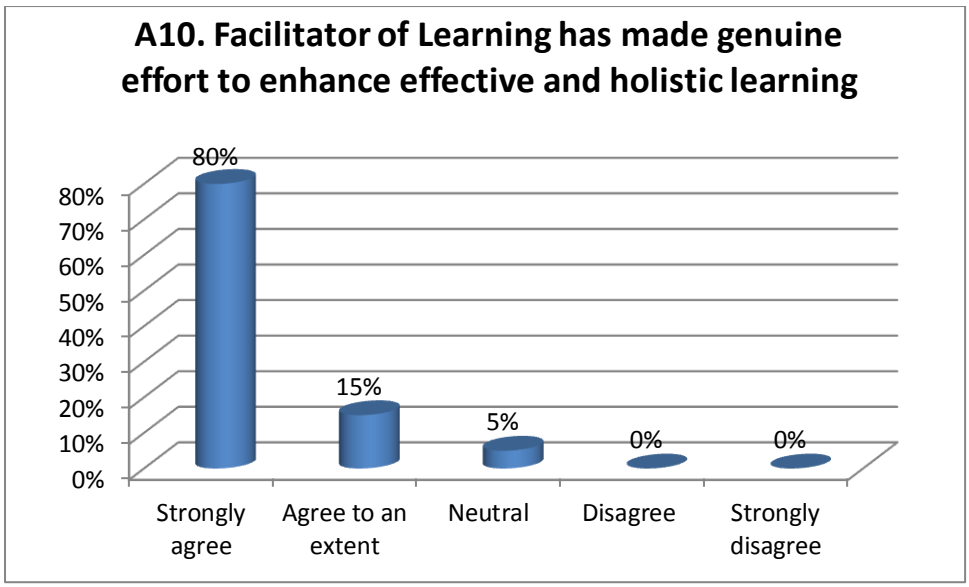


Figure 31

My effectiveness as a facilitator of learning is regarded by 50% of the learners as being excellent and the other 50% of the learners as being very good (Figure 32). This assessment of my effectiveness by the learners provides me with great

satisfaction because not only does it emphasise the learners' success in these learning opportunities, but it underlines the importance of my contribution to the success of the learning opportunities and I am completely satisfied with the outcome.

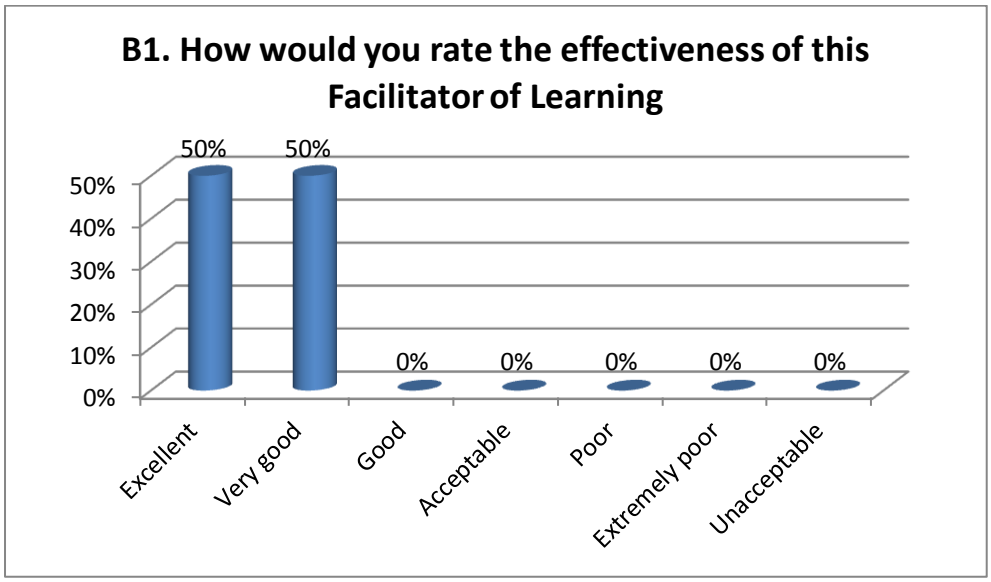


Figure 32

4.2.2.4 Step 4: Feedback from Peers

In order to seek advice on how to improve my teaching practice from a professional perspective, I obtained feedback from two colleagues. This form of collaborative learning is essential for me to monitor my professional development. According to Du Toit (2010:45):

> "Your critical friend (also called a 'critical colleague' or 'learning partner') is someone whose opinion you value and who is able to critique your work and help you see it in a new light. Critique is essential for helping us to evaluate the quality of the research. You would ask one or two people to be critical friends from the start of the project".

My colleagues attended several lessons throughout the year, in particular when I presented my innovative idea that included the Canned Oral activities. They were required to record their observations and give me feedback about the learning opportunities that integrated learning style diversity.

After completing the Peer Assessment questionnaire for educators or facilitators of learning, (See Appendix 7) the overall responses from my colleagues on my teaching style are summarised next.

The feedback from my peers on my teaching style indicated that I:

- almost always (predominantly) and/or frequently promote educator-learner discussion;
- find ways to help learners answer their questions;
- encourage learners to express themselves freely;
- show enthusiasm about the subject matter;
- change my approach to adapt to new situations or challenges;
- speak with expressiveness and a variety of tone of voice;
- demonstrate the importance and significance of the subject matter;
- provide learning opportunities that stress higher-order thinking as opposed to mere memorisation;
- provide leaning opportunities or presentations that are lively and encouraging;
- provide clarity on how the subject matter fits into the structure of the syllabus;
- explain the reasons for learner criticism regarding academic performance;
- give clear assessment questions and instructions;
- encourage learner comments even when they turn out to be incorrect or irrelevant;
- stimulate learners to intellectual effort beyond what is required by most subjects;
- provide clarity of the purpose or outcome of the learning opportunity;
- relate study material to real-life situations;
- introduce stimulating ideas about the subject;
- provide learning opportunities that improve rational thinking, problem solving and decision-making;
- develop creative and innovative learning opportunities;
- present learning opportunities that encourage co-operative learning;
- encourage learners to provide constructive feedback about my learning practice;
- communicate the related assessment criteria to learners so that the learners know what should be achieved;
- encourage the learners to challenge my ideas, the ideas of other learners, or those presented in readings and other learning material;
- challenge learners to set challenging, but realistic goals for their own learning;

- emphasise the importance of maintaining rigorous academic standards to learners;
- provide clarity on the expectations of the learning opportunity;
- encourage learners to speak up when they do not understand;
- use diverse activities to address a broad spectrum of learning styles;
- find out about learners' learning styles, interests or backgrounds;
- afford learners the opportunity to reflect on the learning processes.

The above peer assessment feedback indicates that I was successful in delivering learning opportunities to learners, accommodated the varying combinations of learning styles effectively and I encouraged learners to take responsibility for their own learning. This included enhancing their critical-thinking skills, decision-making techniques, problem-solving skills, setting clear goals and objectives and working collaboratively with other learners. This affirmed that I need to continue presenting learning opportunities to assist learners in expanding their less preferred learning style and encouraging whole-brain collaborators.

4.2.2.5 Step 5: Reflexive Feedback

In order to monitor my professional development, I completed a self-assessment questionnaire based on the work of the Johnson Foundation (Greenberg, 2000). The Johnson questionnaire is based on the following principles, which are compliant with the seven roles for educators as outlined by the *Norms and Standards for Educators* (South Africa, 2000):

1. **Good practice encourages learner-educator contact**

   In order to motivate my learners and actively involve them in the learning process both in and out of school, I needed to promote meaningful interaction with them. This warranted the need for allotting consultation times for learners to seek advice after a lesson. I realised that my role as a facilitator of learning does not apply to a classroom setting only but extends to one of a mentor. My focus is not only on attaining excellent academic results, but also on encouraging my learners to think about their values and future aspirations.

2. **Good practice encourages co-operation among learners**

   Co-operative learning augments the learning process. I have realised that the learning opportunities I presented to learners were a success as a result of the collaborative learning process that led to a deeper understanding of the prescribed tasks. Learners were competitive externally but within their groups they shared their ideas and displayed their viewpoints, which eventually produced successful trailers.

3. **Good practice encourages active learning**

   My aim was to improve my teaching practice by mediating and encouraging active and holistic learning. I created learning opportunities that allowed my learners to discover and apply innovative methods in order to accomplish the prescribed tasks. I included learning opportunities that did not require a regurgitation of work or passive learning dictated by a teacher-centred focus. My goal now is to create more learning opportunities that focus on learning style diversity and multiple intelligences and encourage learners to take responsibility for their own learning experiences.

4. **Good practice gives prompt feedback**

   Learners were given a Learner Feedback Questionnaire (See Appendix 6) in order to elicit their opinions about my teaching practice. Their suggestions and responses assisted me in monitoring and assessing my quality of teaching. Reciprocally, they also needed prompt feedback on their performance and I was able to provide them with feedback with the aid of an assessment rubric and verbal feedback.

5. **Good practice emphasises effective time management**

   Maintaining high academic standards and managing one's time effectively are interrelated. I assisted my learners in establishing time frames to which they had to adhere. This allowed all my learners to submit their tasks in a timely manner.

6. **Good practice communicates high expectations**

   Irrespective of my learners' academic results, I encouraged them to set a high standard of learning. I expected all my learners to work conscientiously and to attain a high standard of work at all times. As a controlling function I consistently arranged feedback sessions to monitor progress and set new

expectations. As a result, learners were afforded the opportunity to improve the standard of their work continuously.

7. **Good practice respects diverse talents and ways of learning**
   Learners were given the opportunity to work in the specialised zones of their learning styles and were allowed to learn in ways that removed them out of their comfort zone of learning. This allowed for learners to adopt learning style flexibility while still maximising their full potential.

4.3 Conclusion

Educators are well aware that there are diverse ways in which learners learn and consequently the role of the facilitator of learning should be to ensure that every learner's individual learning style is acknowledged and maximised in order to ensure that the highest level of learning is taking place. Through the empirical research investigation, I became aware that my teaching style does not complement 74% of my learners and that my teaching over the years may not have been an effective approach for the learners whose learning styles were significantly different. I have now realised that it is imperative that both educator and learner adopt learning style flexibility in which different learning styles are incorporated, and the flexibility of these styles is promoted and expanded. This has been achieved by creating learning opportunities that encourage learners not to be confined to their learning style preference but to surpass their quadrant preference.

CHAPTER 5: FINDINGS AND CONCLUSION

5.1 Introduction

The aim of my professional development was to implement an innovative idea and to monitor myself through the process of action research and critical reflection in the field of education. This chapter highlights how my results addressed my research questions.

5.2 Reflections on my Learning Style Profile

Ned Herrmann's theory confirms that people learn in different ways and reflect a diversity of learning style preferences. Not many people are aware of this. I have been made aware that by knowing one's learning style profile one will be far more effective when learning and interacting with other people. By knowing one's strengths and weaknesses one is able to accommodate other people with different learning style profiles.

My HBDI results (Herrmann International, 2013) revealed that I learn in a particular way and it was highly probably that I negated to accommodate the diverse learning styles prevalent in my English class. The consequences included learners of a different learning construct disengaging with the learning process and learners of a similar learning disposition as mine, benefiting immensely from my teaching style. The results showed that I have a double dominant profile. The manner in which I learn and teach, resolve difficulties and communicate is compliant with the descriptors of Quadrant C, being emotional, spiritual, talker and reader and that of Quadrant D being imaginative and holistic. This means that Quadrant C and D reinforce each other and that I utilise the right hemisphere of my brain to the detriment of the left hemisphere. However, I have realised that I should not let my learning style profile define me. I would benefit from incorporating activities and accessing the left hemisphere of my brain. I needed to adapt my instruction and learning style and adopt learning style flexibility, not only for my benefit, but for the benefit of my learners as well. Herrmann (2013:15) propounds that there is no idyllic profile and that the HBDI is a tool that encourages one not only to understand one's strengths but one's "blind spots" and "avoidances". One's goal should be to develop competencies in the areas of one's less preferred quadrants.

The figure to follow affirms that a significant number of people in my profession, usually educators in the field of Humanities are Quadrant C aligned. Now that I am aware of my learning style preference, my goal is to be a holistic learner and facilitator of learning who implements innovative ideas in my teaching practice similar to the innovative idea in my action research study.

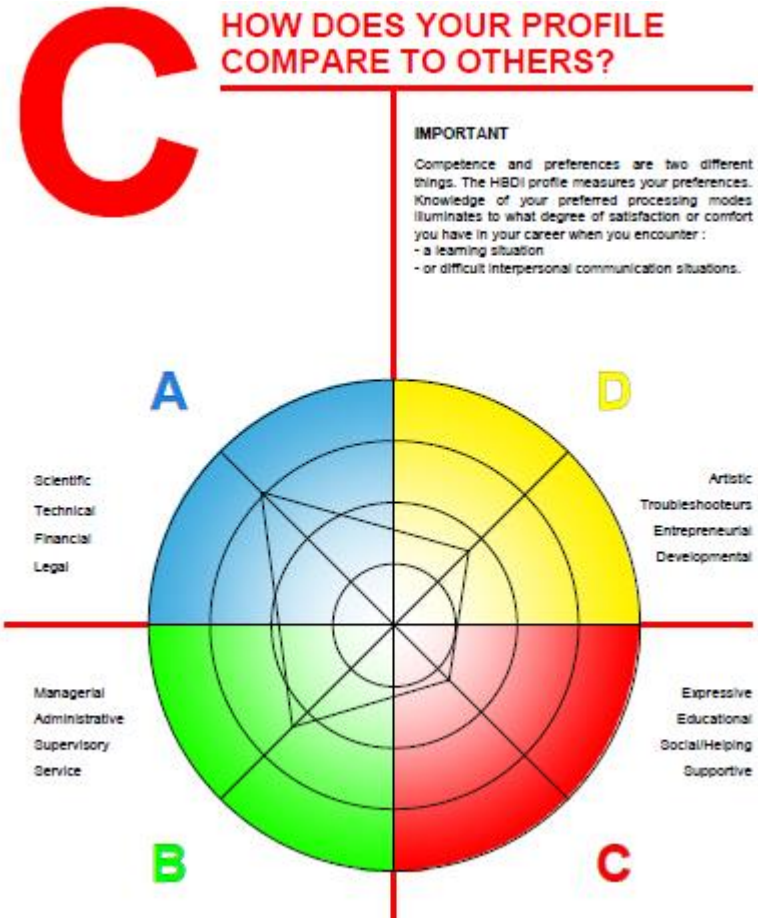


Figure 33: Ned Herrmann's Career Profiles

Source: Herrmann International (2004)

5.3 Reflections on my Learners' Learning Style Profile

The findings show that only two of the 20 learners in my class are totally aligned with my learning style profile. The remaining results project that 30% of the learners have a quadrant A preference, 19% have a quadrant B preference, 26% have a quadrant C preference and 25% have a preference for quadrant D. This is confirmed by the consolidated *Turn-on Work* indicator results in Figure 21. Although Herrmann (1996) states that there is no right or wrong profile, these results are concerning as now that I am guided by the knowledge of the different learning style profiles, the learning opportunities that I presented previously to the class may have only benefitted these two learners. Now that I am aware of a holistic learning model, I am able to optimise my teaching practice in order to accommodate the array of learning styles and challenge my learners to develop learning style flexibility by improving their "blind spots".

The results still reflect that quadrant A and quadrant C are the dominant quadrants in my class. My findings confirm that the *Turn-On* Work Indicator exercise provided a reasonable method to determine my learner style preferences while simultaneously being cost effective. Moreover, it was easy to understand because it included specific mode descriptors in the *Turn-On* Work Indicator exercise that made it easier for the respondents to choose. In addition, it was easy to administer.

The summary of the results above confirmed that in order to encourage and sustain learning so that educational goals are attained while still maintaining values and creating lifelong learners, I needed to ensure that the learning opportunities that I created reflected a holistic learning model that promoted learning style diversity. This is shown in the learning opportunities that I created thereafter.

5.4 Reflections on my Learning Opportunities

I carefully planned learning opportunities that recognised the different learning style profiles of my learners. I realised that I needed to recognise the innate talents of my learners and maximise their learning potential. I was able to achieve this by integrating and executing activities incorporating the awareness of multiple intelligences and learning style diversity. My objective was to ensure that deeper learning occurs and that learners develop to their full potential.

Furthermore, my intention was to optimise the varied latent potential – talents and gifts – of my learners while still maintaining a learning style-based class that validated my metaphor for my education practice together with the claims I make (McNiff & Whitehead, 2006) and claims of transforming (Du Toit, 2012) my practice.

By allowing learners to identify their learning style preferences and indirectly their limitations, I engaged in a metalearning process. This allowed learners to be critically aware of their learning potential and they were tasked with the responsibility of reflecting and managing their learning process, which underpins the philosophy of metalearning.

The data collected from the learners in response to my innovative plan indicated that 80% to 95% of all learners understood the learning opportunity objectives. It also indicated that the planning for all the learning opportunities was of a high standard and that the delivery of these was managed effectively. Moreover, 85% of learners benefited from the integration of the opportunities linked to learning style diversity.

80% of the learners appreciated that I was responsive to their queries and concerns associated with the learning opportunities presented. Moreover, 95% confirmed that I had equipped them with the tools to understand their learning style preferences. They also indicated that I had explained the assessment criteria adequately as well as appreciated that I provided useful feedback on all learning opportunities within a realistic timeframe.

The results show that 95% of the learners believed that the assessment activities for the learning opportunities were holistic and relevant. They also accepted that I made a genuine effort to enhance holistic and effective learning.

I found the learning opportunities that I developed a viable exercise. I wanted learners to accept responsibility for their learning and persevere until tasks were successfully completed. I feel that the learners were valued and given an opportunity to realise their unique potential. I allowed them to become reflexive and critical learners who are now equipped with the skills to adapt to varied learning environments. I needed to innovate and transform my existing practice to accommodate and expand the varied learning style preferences and the empirical evidence shows that this has been successfully accomplished. I know that I have

challenged my learners by removing them from their “comfort zones or preferred ways of doing things” (Du Toit, 2004:154).

5.5 Reflections on my Peer Assessments

My aim was to activate and optimise a holistic learning model in my classroom practice and still maintain rigorous academic standards.

The most positive appreciation received from my peers on my teaching style practice is that I changed my approach to adapt to new situations or challenges, provided learning opportunities that stress higher-order thinking as opposed to mere memorisation, gave clear assessment questions and instructions, stimulated learners to intellectual effort beyond what is required by most subjects, related study material to real-life situations, introduced stimulating ideas about the subject, provided learning opportunities that improve rational thinking, problem solving and decision-making, developed creative and innovative learning opportunities, presented learning opportunities that encourage co-operative learning and afforded learners the opportunity to reflect on the learning processes.

This reflection indicates the metamorphosis in my teaching style to one that strives for innovation and optimisation. The above feedback specified by my peers is gratifying and affirms that the time invested in this empirical study was valuable.

5.6 Reflections on my Action Research Study

My responsibility was to improve my skills through a collaborative practice, become critical and foster a culture of lifelong learning. I needed to generate new ways of doing things and this small-scale study afforded me the opportunity. The research assisted my learners and me in creating an environment that fostered change and improvement.

Professional accountability and professional commitment justified this study. I was willing to reflect critically on my own teaching practice and learning experiences and make the necessary changes that benefited and gave each learner the opportunity to excel. I was able to improve my practice through learner feedback, collaborative learning and self-reflection. I have realised that anyone can say that he or she is competent, fair and innovative. However, when putting this into practice, one sees deficiencies in one’s practice. Artworks need to be maintained and restored and this is similar to the practices of all educators.

Mcniff (2000:1) refers to “swampy lowlands of practical everyday work” and this is what many education practitioners experience. I hope that my action research study encourages other facilitators of learning to become action researchers and generate their own innovative, personal theory and reconcile their values and educational practices.

After completing my action research study, I created a Transformative Action Research Model for Continued Professional Educator Development that outlines my aspiration for continued professional educator improvement. I was inspired to create this model after utilising Du Toit’s (2008) non-linear Visionary Action Research Model in my action research cycles. I will use this model in my next action research study and it is presented in Figure 34.

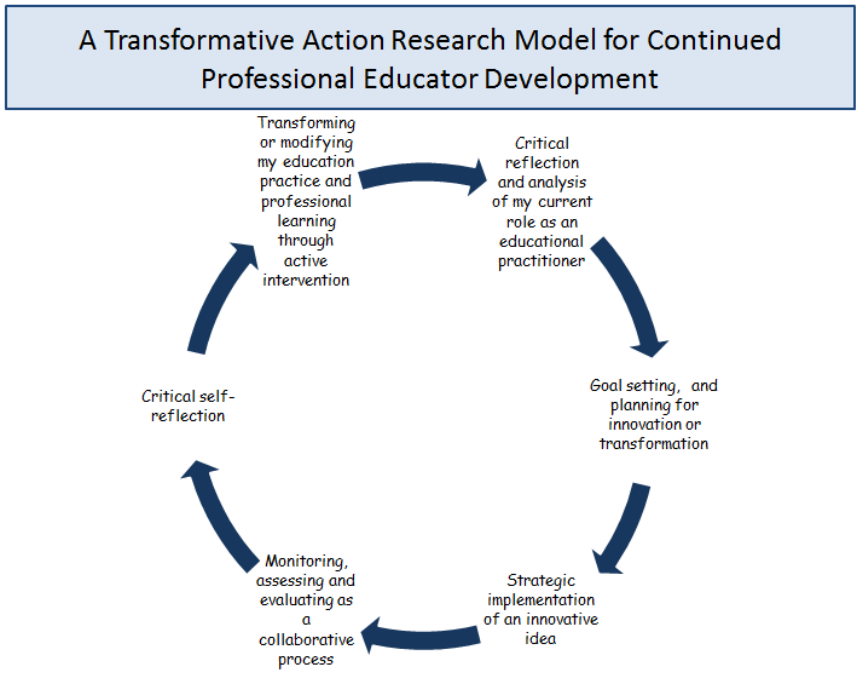


Figure 34: A Transformative Action Research Model for Continued Professional Educator Development

I do not intend to make any outrageous claims and the findings of my study may not be generalisable to other contexts. However, according to Altrichter *et al*. (2002:127):

> “[I]nsisting on rigour or dismissing the evolving research project as a ‘limited form of research’ could turn off newcomers altogether, instead of giving them the chance to develop their research approach as they become more

familiar with the philosophy and methodology of action research. The move can therefore sacrifice the potential for both the practice of action research and the development of new practitioners who could in the longer term contribute to developing the approach".

I hope that I have foregrounded the importance of action research to reveal insight into one's practice, provide scholarly interventions and produce new knowledge that adds to the body of educational literature. I wanted to encourage and sustain learning so that educational goals are attained while still maintaining values and creating life-long learners. Enrolling for a Master's degree in Professional Educator Development provided the impetus for me to innovate and to ensure that my values and my teaching practice complemented each other.

5.7 Conclusion

I have now given new meaning to my practice. The self-enquiry showed that implementing a holistic model that promotes learning style diversity is a practical, innovative and an indispensable plan that facilitators of learning should implement in their teaching practice, if they have not already done so. Action research afforded me the opportunity to gain insight into how I teach; to innovate my practice so that learning is optimised and to allow for a learning style-balanced class.

I hope that my action research will create a domino effect on educator professional development by invoking other education practitioners to review systematically their methods of facilitating learning in order to enhance the performance of their learners. This could be actively achieved by implementing a holistic learning model that promotes learning style diversity, to their learning and teaching environment.

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