

**MENTORING ACADEMIC STAFF AT A HIGHER EDUCATION
INSTITUTION: A WHOLE BRAIN APPROACH**

by

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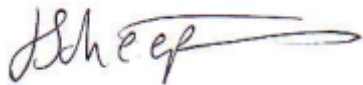
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DEGREE AND PROJECT

MEd

Mentoring academic staff at a higher education institution: a whole brain approach

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I would like to praise the Lord for his blessings and thank Him for walking this path with me. May He direct my future path to where He wants me to manifest His kingdom.

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- My mentee. Thank you for your participation and positive attitude and willingness to develop yourself professionally.
- My mentee's students. Thank you for your willingness to participate.

ABSTRACT

MENTORING ACADEMIC STAFF AT A HIGHER EDUCATION INSTITUTION: A WHOLE BRAIN APPROACH

Hannelie Scheepers

Supervisor: Dr P.H. du Toit

Degree: Magister Educationis (Curriculum, Instructional Design and Development)

As the Head of Department, Department of Tourism at Centurion Academy, I identified an innovative idea to transform my mentoring practice. The Advanced Diploma in Tourism Management is offered at two campuses – the main campus in Centurion and the campus situated in Klerksdorp. I was based on the main campus and served as a peer mentor for my mentee, who was based on the Klerksdorp campus. The concept of blended mentoring that focuses on face-to-face mentoring and e-mentoring was opted for, due to the distance between my mentee and me.

The purpose of the mentoring was to facilitate my mentee's professional development by adapting a whole brain® approach. My mentee, on the other hand, transformed her teaching practice by means of facilitating whole brain® learning in the Accounting module. We were both responsible for presenting the Accounting module – I was the examiner and followed a whole brain® approach (derived from previous study) and it was my mentee's second year of lecturing Accounting. Adapting a whole brain® approach empowered us to transform our respective practices.

Whole brain® learning focuses on the theoretical framework of the metaphorical Herrmann whole brain® model. The Herrmann Brain Dominance Instrument (HBDI®), which quantifies the degree of an individual's preference for specific thinking modes, was used to assess my

mentee, my mentee's students who were enrolled for the Accounting module and my own thinking style preference. The data derived from the HBDI® served as baseline data for the study.

An action research design was followed by both my mentee and me. We both followed our own action research spiral, which overlapped. My action research cycle commenced with a face-to-face mentoring session in Pretoria with my mentee. The study included two visits by me to the Klerksdorp campus. During these visits I observed learning opportunities presented by my mentee. Quantitative and qualitative data, a part from the HBDI®, was gathered during the study. Quantitative data included a feedback questionnaire that my mentee's students had to complete after the completion of each Accounting theme and included the students' marks. Qualitative data that was gathered included interviews with my mentee and her students, field notes from observations, audio-visual material from my mentee's learning opportunities and personal documents.

The findings indicate that a whole brain® approach to mentoring and a whole brain® approach to facilitating learning in a teaching practice contributed to my and my mentee's professional development. Other additional aspects that can be incorporated in a mentoring and teaching practice to ensure lifelong learning and a continuous transformation of one's practice were identified during the final reflection on the action research cycle that was recorded.

Keywords: Accounting, action research, mentoring, thinking style preferences, tourism curriculum, tourism industry, transformational leadership, whole brain® learning.

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CHAPTER 1

ORIENTATION TO THE STUDY

1.1 Introduction

This study examines a whole brain® approach to a mentoring relationship as part of professional development in a Private Higher Education Institution (PHEI). The specific exemplar and case study are the Department of Tourism at Centurion Academy Pty (Ltd) (hereafter Centurion Academy). Centurion Academy is registered with the Department of Education as a private higher education institution under the Higher Education Act, No. 101 of 1997, Registration Certificate number 2001/HE07/003. The Academy is also provisionally registered with the Department of Education (DoE), until 31 December 2014, as a private further education and training college under the Further Education and Training Colleges Act, 2006, Registration number 2008/FE07/05. Higher Certificate programmes, diplomas and advanced diplomas are among various qualifications offered at Centurion Academy for the following courses:

- Marketing and Public Relations
- Administration Management
- Tourism Management
- Cosmetology
- Somatology
- Hospitality Management
- Nature Management
- Information Technology
- Electronic Engineering
- Sport Management

The main campus is situated in Centurion, Gauteng. The Centurion Academy, Klerksdorp campus, offers a few of the courses. The Advanced Diploma in Tourism Management is one of the programmes that are delivered by both campuses.

The data with regard to the research was collected from July to October 2011. During this time the mentor (the researcher) was the Head of Department (HoD) and based on the main campus in

Centurion. My mentee was a lecturer in her second year of lecturing based on the Klerksdorp campus. An action research approach was followed by both my mentee and me.

According to the Department of Higher Education and Training (South Africa 2011:54) the “Higher Education Qualifications Framework (HEQF) provides for the establishment (of) a single qualifications framework for higher education to facilitate the development of a single national co-ordinated higher education system. Its key objective was to enable the articulation of programmes and the transfer of students between programmes and higher education institutions, which the then separate and parallel qualifications structures for universities and the erstwhile technikons (now Universities of Technology) were perceived to preclude.” The Advanced Diploma in Tourism Management was an existing qualification that was registered prior to the promulgation of this policy. The Department of Higher Education and Training (South Africa 2011:68) notes that existing qualifications “must conform over time to the requirements of this policy”. Therefore, to be in line with the policy, the Advanced Diploma will be conformed and will be known as a “Diploma in Tourism Management”. The specifications for the (new) Diploma are set out in Table 1.1.

Table 1.1: Specifications for the new Diploma (South Africa 2011:74)

National Qualifications Framework (NQF) Exit Level	6
Minimum total credits	360
Minimum credits at Level 7	60
Maximum total credits at Level 5	120

Each curriculum is designed at different levels and offers different credits. Levels 5 to 7 consist of undergraduate qualifications; levels 5 to 10 entail higher education qualifications (South Africa 2011:62). The Department of Higher Education and Training (South Africa 2011:63) notes the following: “Each NQF level has a level descriptor. Level descriptors provide guidelines for differentiating the varying levels of complexity of qualifications on the framework. The level descriptors are the outermost layer of the qualifications specification. At each level they describe the generic nature of learning achievements and their complexity. Level descriptors are thus broad qualitative statements against more specific learning outcomes that can be compared and located.” The credit value refers to the value assigned to a given number of notional hours of learning. One credit equals 10 notional hours; 120 credits are approximately equivalent to one year of full-time study (Higher Education Quality Committee 2004:33).

The current Advanced Diploma in Tourism Management offers a credit value of 360. According to the Department of Higher Education and Training (South Africa 2011:76) the new Advanced Diploma's total credits are 120. The Advanced Diploma is regarded as a qualification that is "suitable for continuing professional development through the inculcation of a deep and systematic understanding of current thinking, practice, theory and methodology in an area of specialisation" (South Africa 2011:76). If Centurion Academy wishes to offer an Advanced Diploma in Tourism Management in the future, a new programme has to be developed and will be regarded as a "new programme", whereas the current Advanced Diploma is known as an "existing programme" (South Africa 2011:68).

Besides government bodies (such as the HEQF of DoE) that influence the design of a curriculum, one should also consider the influences and requirements of other stakeholders, such as students and employers (the tourism industry) (Ring, Dickinger & Wöber 2009:107; Zagonari 2009; Busby 2003:320) since tourism curricula are usually designed by academics with little or no experience of the tourism industry (Busby & Fiedel 2001:502). The curriculum document of the Diploma in Tourism Management of Centurion Academy was approved by Centurion Academy's Advisory Committee and the Academic Board in December 2008. According to the curriculum development model, Figure 1.1 (Masebe 2007, adapted from Malan, Du Toit & Van Oostrum 1996) the Advisory Committee, consisting of specialists and academics from the Tourism Industry that provided valuable input in the design of the Tourism Curriculum, acted on a meta-level, whereas the approval of Centurion Academy's Academic Board acted on a macro-level.

The focus of this study is the micro-level in the teaching and learning situation of individuals (Figure 1.1), focusing on my mentoring practice and on my mentee's teaching practice. The assessment criteria for the Accounting module in the subject Tourism Management, offered during the second year of study, were identified and served as the basis for my mentee to improve her practice.

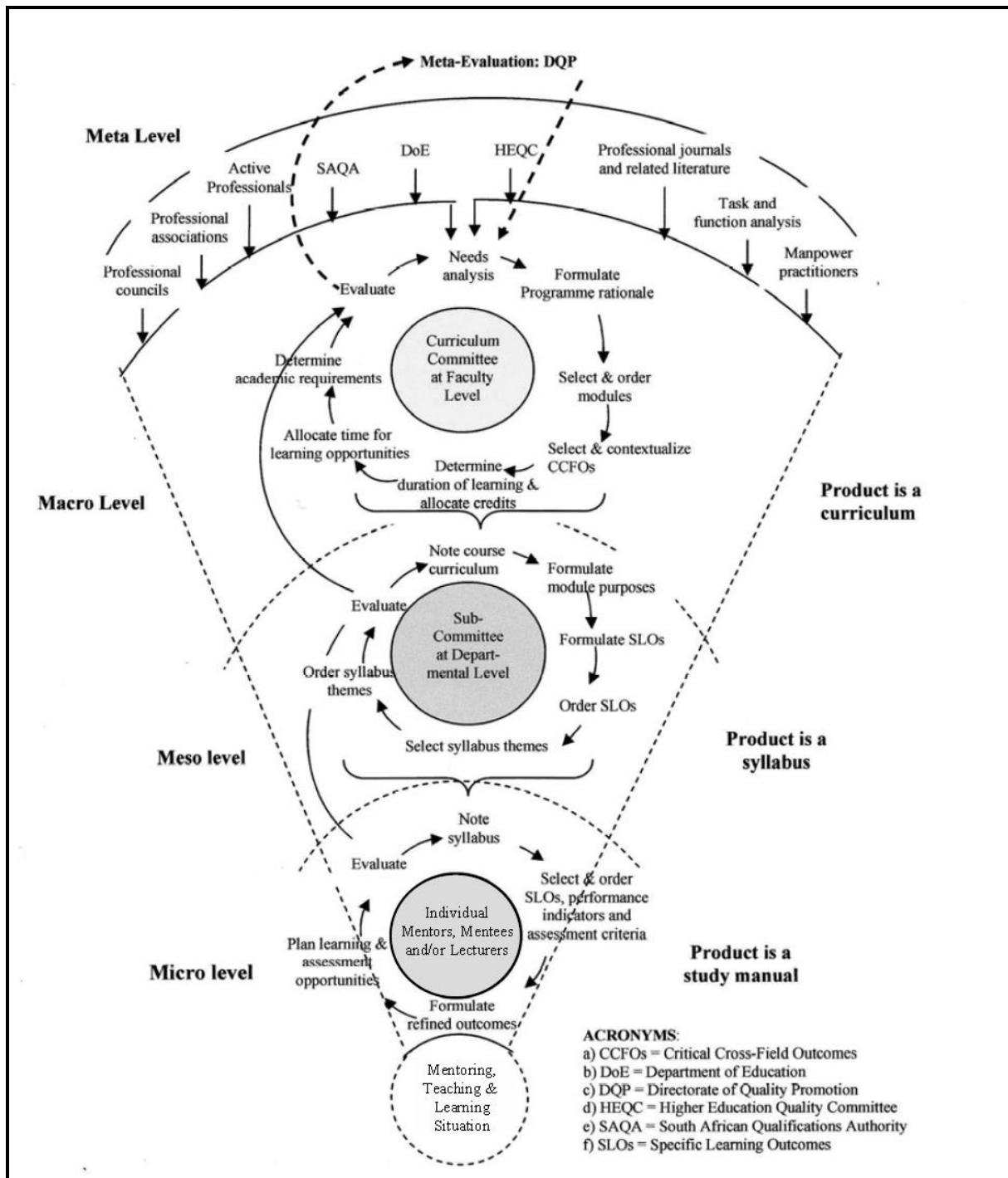


Figure 1.1: Curriculum development model (Masebe 2007 adapted from Malan, Du Toit & Van Oostrum 1996)

Chapter 1 provides the rationale for the study and the problem statement and research questions. A brief overview of the research paradigm, design and approaches is outlined. Ethical considerations and limitations of the study are identified. The chapter layout concludes this chapter.

1.2 Rationale for and purpose of this study

Basic Accounting (Accounting hereafter) is taught as a module during Tourism students' second year of study. It is one of the modules that most Tourism students at Centurion Academy dislike. Their negative attitude towards Accounting is due to the fact that they associate it with numbers. Students new to Accounting usually view it as a difficult subject (Borja 2003) and those that should complete Accounting as a subject compulsory to a non-Accounting curriculum tend to be less motivated, unhappy and not interested in the course (Cruz 2001; West & Saunders 2006:724). The students only want to "pass the subject" and they claim that they "do not wish to work in areas of tourism where Accounting [or numbers] is involved". However, the basic principles of Accounting are ever-present in the tourism industry; it is therefore essential for students to master its basic principles. Accounting should form part of the management component of an undergraduate curriculum in tourism (Ring, Dickinger & Wöber 2009:113) and is viewed as the second most important aspect that should be included in the tourism curriculum (Ring, Dickinger & Wöber 2009:114-115).

Each year, upon completion of the Accounting module, the students at the Centurion campus noted that they actually enjoyed the subject, thereby transcending their negative mind set. Their results provide proof of this statement as all 24 students passed the subject in 2010 with an average of 79%, which made it their second best subject overall. However, the Klerksdorp students indicated Accounting to be the subject that they disliked most, and according to their lecturer, they remained negative throughout the year. The average of the subject was 63% and one student failed.

In 2006 I conducted a study as part of the Post Graduate Certificate in Higher Education (PGCHE) at the University of Pretoria on the topic "Making Accounting Enjoyable" (Scheepers 2006). I enacted a paradigm shift by means of becoming a facilitator, rather than a lecturer. I followed a whole brain® approach in my classes, which enabled me to move from the traditionally lecturer-centred approach to a student-centred approach (West & Saunders 2006). When the students became more involved and had more responsibilities, they changed their attitude towards the subject. The professional development that I as facilitator and lecturer of that particular study attained was the main rationale for this study.

In my current teaching practice I still follow a whole brain® approach. However, my peer lecturing the Accounting module on the Klerksdorp campus did not follow a whole brain® approach at the

commencement of this research project – simply because she was unaware of her students’ and her own thinking style preferences. I wanted to be involved in the professional development of this peer, and in the process further develop myself professionally in my position as HoD. Mentoring is regarded as an “intervention that enhances the likelihood of success” (Rankhumise 2013:378) of which “success” in my terms rather implied *transforming our practices to enhance our professional development*.

In the traditional sense my position as HoD, examiner and subject specialist of Accounting provided me the opportunity to act as my peer’s mentor. Shrestha, May, Edirisingha, Burke and Linsey (2009:116) indicate that in mentoring the mentee receives advice, coaching and counselling from a superior. My peer (mentee) was advised and coached by me with regard to various thinking style preferences in order to transform her practice. It was the only time I wanted to refer to the traditional approach of mentoring. Since I regarded my mentee as my peer, it allowed me to learn from her. As Du Toit (2012:1218) puts it: peer mentoring is an “enriching learning opportunity for everyone involved”. The process of mentoring was a challenge since I was based in Centurion and my mentee in Klerksdorp. However, it created an excellent opportunity for me to transform my practice as HoD and as lecturer of the subject Tourism Management with specific focus on the Accounting module even further.

The purpose of this study is therefore not based on a specific problem, but rather on an innovative idea in order to transform the respective practices of my mentee and myself. This concept is known as an asset-based approach (Du Toit 2012:1222) as my mentee and I focused on our own assets – our thinking style preferences – and experimented with new ideas.

I facilitated my mentee’s professional development by means of transforming her teaching strategies in her Accounting class by means of adapting a whole brain® approach. My mentee facilitated learning by catering for diverse thinking style preferences. There were seven students enrolled for this particular subject (Tourism Management) in 2011 and all of them participated in the study. One student discontinued her studies during Accounting Theme 4, but she completed her examination in the subject. She did not attend any classes after she discontinued her studies (she wanted to complete the subject due to the Accounting component that was needed for her to apply for a specific job she was interested in).

The subject Tourism Management consists of two modules – Guest House Management and Basic Accounting. The Accounting module consists of five Accounting themes:

- Accounting Theme 1: An introduction to Accounting (theory) and the Accounting equation
- Accounting Theme 2: The general ledger and trial balance
- Accounting Theme 3: Source documents and journals
- Accounting Theme 4: Bank reconciliation
- Accounting Theme 5: Financial statements

Guest House Management and Accounting Themes 1 and 2 of the Accounting module are completed in the first semester. The research study commenced in the second semester after ethical clearance for the study had been obtained. My mentee was required to adopt a whole brain® approach in Accounting Themes 3, 4 and 5 and in revision of Accounting Themes 1, 2 and 3 (as part of the preparation for the final examination; the subject is a year-subject and the examination covered both modules).

1.3 Research questions

My research questions are the following:

Primary research question:

- How can a whole brain® approach to mentoring facilitate my own and my mentee's professional development?

Procedural research questions:

- What are my own, my mentee's and her students' thinking style preferences?
- How can my mentee and I, as mentor, use action research to address thinking style preferences in order to transform our respective practices and to monitor our professional development?
- What are the challenges of the mentor relationship and how can they be dealt with?

1.4 Research paradigm

The research paradigm that I employed is constructivism. Constructivism is based on the work of Piaget (individual constructivism) and Vygotsky (social constructivism) (Gouws 1998:72) and focuses

on the subjective meanings of an individual after constructing or restructuring and reflecting on new knowledge and experiences (Creswell 2007:20; Gouws 1998:72; Bender 2001:86). It is also the ability to take an “abstract concept and make meaning of it via concrete experiences” (Wright, Grenier & Seaman 2010:203).

The ontological position of a constructivist suggests that she can construct (through human interactions) and interpret multiple subjective realities (Archer 2008). The epistemological approach of constructivism that I followed to construct new meaning was from an individual constructivist and a social constructivist point of view.

As an individual constructivist, I constructed new meaning from self-reflection. As a social constructivist, I constructed meaning by means of social interaction: first, from what I had learned from my mentee and her students, second from what I had learned from other practitioners and scholars. This way of constructing meaning was complemented by lessons learned in my own mentoring practice and studying relevant literature.

Both my mentee and I engaged in action research since it continually enables one to construct new knowledge of one’s practice (Du Toit 2012:1217).

1.5 Action research design

Individuals in an educational setting engage in action research when they want to “gather information about, and subsequently improve the ways their particular educational setting operates, their teaching, and their student learning” (Creswell 2008:597). In this regard my mentee and I both aimed to transform our respective educational practices and therefore we engaged in action research. As previously mentioned, a problem was not identified in our practices – we both identified an innovative idea as point of departure (Du Toit 2012:1222). The Herrmann whole brain® model and the identification of our thinking style preferences (of my mentee, her students and my own) formed part of this point of departure.

The action research model of Du Toit (2009) was adapted in this regard.

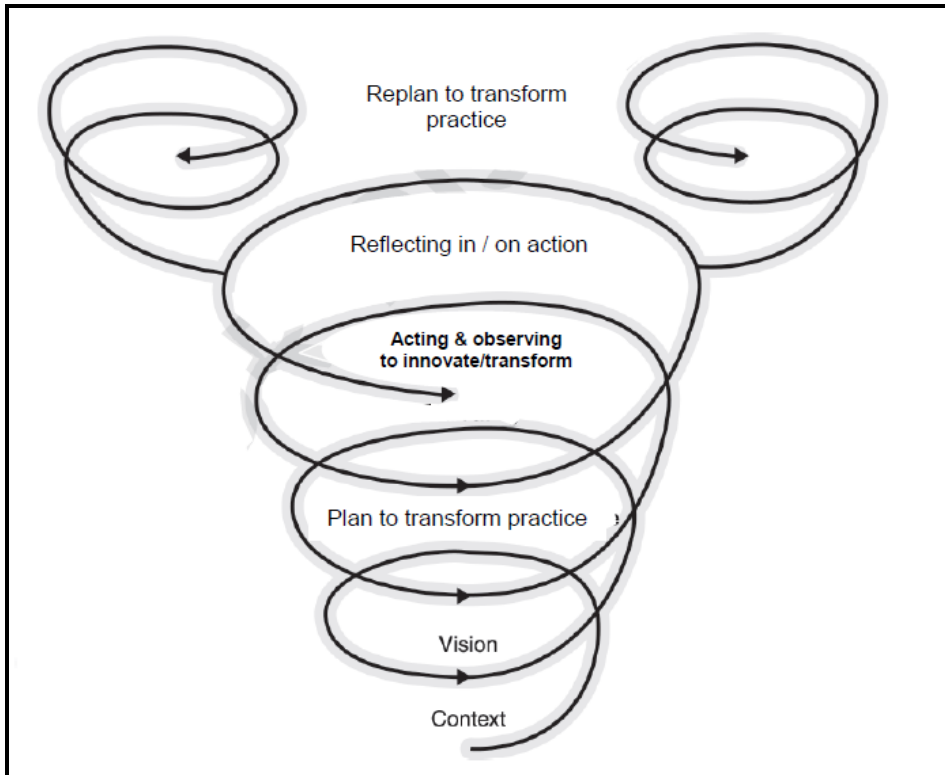


Figure 1.2: Action research model (adapted from Du Toit 2009)

McNiff, Lomax and Whitehead (1996) indicate that the action research process consists of several spirals. An action research spiral was rolled out for both my mentee and me; our spirals overlapped. As integral part of my spiral I executed two dominant action research cycles. My mentee executed four action research cycles by which three action research cycles overlapped with my first cycle. Her final action research cycle overlapped with my second action research cycle.

The action research steps of both my mentee and me are discussed in Chapter 3.

1.6 Mixed methods approach

The action research design was complemented by a mixed methods approach, as both quantitative and qualitative data were collected. Creswell (2008:46) describes quantitative research as “research in which the researcher decides what to study; asks specific, narrow questions; collects quantifiable data from participants, analyses these numbers using statistics; and conducts the inquiry in an unbiased, objective manner”. With regard to action research, lecturers have to extricate themselves from their everyday subjective involvement (Stringer 2004:15). Creswell (2008:46) describes qualitative research as “research in which the researcher relies on the views of

participants; asks broad, general questions; collects data consisting largely of words (or text) from participants; describes and analyses these words for themes; and conducts the inquiry in a subjective, biased manner". The advantage of qualitative research in action research is that lecturers increase their understanding of the actions that they observe and they gain insight by means of how the participants interpret certain events (Stringer 2004:15).

1.7 Data collection methods

In mixed methods research, a clear distinction between qualitative and quantitative data should be made (Creswell 2008:562). Table 1.2, adapted from Creswell (2008:563), provides the different forms of data collected.

Table 1.2: Quantitative and qualitative methods of data collection and types of data (adapted from Creswell 2008:563)

Quantitative Research		Qualitative Research	
Methods of data collection	Data	Methods of data collection	Data
Questionnaire: HBDI®	Numeric scores	Semi-structured interviews	Text data from transcribed interviews
Questionnaire: students' feedback	Numeric scores	Observations	Field notes from researcher's notes
Documents: students' marks	Numeric scores	Audio-visual material	Image data from video recordings
		Documents	Text data from mentor and mentee's documents

The data collection methods are briefly discussed and are elaborated on in Chapter 3.

1.7.1 Quantitative data collection

- *Questionnaires*

A questionnaire is completed by the participants and is regarded as a set of questions on a form (De Vos, Fouche, Strydom & Delpont 2002:172) to be completed in different ways or as items that should be responded to.

Quantitative data was gathered from me as the mentor, my mentee and her students. For this purpose we completed the Herrmann Brain Dominance Instrument® (HBDI®) consisting of 120 items to determine our thinking style preferences (Herrmann 1995a) that served as baseline data for the study. The HBDI® also provides qualitative data (See Paragraph 1.7.2).

The identification of the thinking style preferences of my mentee, her students as well as my own, allowed me as the mentor to facilitate her whole brain® professional learning. This contributed to her adapting her methods of facilitating learning and assessment opportunities effectively to accommodate all the thinking style preferences as described by Herrmann (1995a). It also allowed me to adapt whole brain® strategies in the mentor relationship that could effectively accommodate my mentee's thinking style preferences, and to implement strategies that activated our least preferred quadrants.

Identifying her students' thinking style preferences allowed my mentee as lecturer the opportunity to transform her practice since applying a whole brain® approach to facilitating learning provided diversity in the classroom environment. Gathering data with regard to her students' thinking style preferences allowed my mentee to accommodate her students' diverse thinking style preferences individually and as a class effectively. It also allowed her to activate the least preferred thinking style preferences of her students.

My mentee's students were required to complete a student feedback questionnaire after each Accounting theme. The questions related to their interpretation of specific whole brain® strategies that she incorporated in the Accounting learning opportunities. The completed questionnaires were sent via courier services from the Klerksdorp campus to the Centurion campus.

- *Students' marks*

My mentee's students' marks obtained from their formative and summative assessments were collected and statistically analysed. These marks related to the assessments that were completed during the second semester.

1.7.2 Qualitative data collection

After completing the HBDI[®], each individual received a personalised document from Herrmann International explaining one's unique individual profile (Herrmann International 2006; 2011). This qualitative data served as baseline data for the study.

- *Interviews*

Semi-structured interviews are interviews between two extremes of structured interviews and completely unstructured interviews (Welman & Kruger 2003:161). Semi-structured interviews were conducted during the two visits to the Klerksdorp Campus. During the first visit I conducted individual interviews with my mentee and with each student, and during the second visit I conducted an individual interview with my mentee and group interviews with her students. According to Punch (2009:147) a group situation can “stimulate people in making explicit their views, perceptions, motives and reasons” that makes group interviews an attractive data collection opportunity.

- *Observations*

During the two visits to the Klerksdorp campus I attended and observed two of my mentee's learning opportunities. While attending, I made field notes of my observations. As an addition to the field notes, the learning opportunities were video-recorded, as suggested by Punch (2009:155).

- *Audio-visual material*

As mentioned, two video recordings of my mentee's learning opportunities were made.

- *Documents*

Documentary sources from my mentee (personal documents such as her reflective journal, documents in which she recorded the action research steps of each Accounting theme, e-mails that she sent to me, and assessments and activities that were prepared for her students) were utilised for the purpose of collecting qualitative data. My own documentary sources included my reflective journal, e-mails that I had sent to my mentee and documents that I had prepared for my mentee.

1.8 Ethical considerations

Informed consent informs participants of the procedures and risks involved; participants should give their consent to participate (Trochim 2001:24). My mentee and her students each signed an informed consent form that informed them of the study, their involvement and my expectations. The informed consent informed my mentee and her students that they could discontinue participation at any point in the study (Glesne 2006:132).

Louw and Delport (2006:47) identify language as an ethical issue as language differences “impact on the use of measurements such as standardised tests and questionnaires”. My mentee, her students and I are Afrikaans-speaking; therefore all correspondence was conducted in Afrikaans. My mentee assisted her students with regard to terminology when they completed the HBDI®.

The anonymity of my mentee and her students was confirmed in the informed consent forms. Anonymity ensures that the participants’ names are not exposed (Farnham & Pilmlott 1995:48).

Additional aspects with regard to ethical considerations included permission from Centurion Academy to conduct the study and a request to a lecturer known to my mentee’s students who was responsible for the video-recordings. The expectations and requirements with regard to the study were explained to the lecturer (See Appendices B, C and D for documentation regarding all ethical considerations).

1.9 Limitations and constraints of the study

The research is limited to my mentee’s students and due to financial constraints my own students’ did not complete the HBDI®.

Initially I was concerned that her students would react unnaturally due to the video recording and my presence (not only was I from the main campus, but I was also the HoD, which might have intimidated them). They were, however, well acquainted with the programme coordinator who was responsible for the video recording and after explaining Herrmann’s whole brain® model and their profiles, her students were more at ease with my presence.

Another concern that I identified was that my mentee's students were well acquainted with her. Therefore they might have been reluctant to share their opinions with me, and as they knew that my mentee and I were also well-acquainted they might have thought that I could inform my mentee of what they had said, or they might have felt that, by making "negative" comments they put my mentee in a uncomfortable situation with the HoD.

1.10 Terminology

Assessment

An assessment measures knowledge, behaviour or performance, and/or values or attitudes (Van der Horst & McDonald 1997:169). Assessments may be formative or summative. Van der Horst and McDonald (1997:168) state that formative assessments form and shape learning since they motivate students to improve their performance, maximise their learning and reflect on and improve their own learning. Summative assessment integrates content and is usually done at the end of a semester / module (Serfontein 2004:89).

Curriculum

A curriculum refers to the "course of study" that is intentionally designed to facilitate learning and development, outlining the knowledge, skills and attitudes expected of students that they should obtain during the completion of the course (Brubaker 2004; Ring, Dickenger & Wöber 2009:107). In addition I follow a holistic approach when referring to a curriculum that includes, among others, learning opportunities, assessment opportunities, assessment criteria, learning experiences and community engagement. When completing the course of study, the student obtains a certificate, diploma or degree (Gunn 1998:74).

Facilitator of learning

For the purpose of this study the facilitator is the lecturer (my mentee) responsible for the whole brain® learning processes in the Accounting module. I also regard myself as a facilitator of my mentee's learning regarding her professional development.

Facilitating learning

Slabbert (1997:31) describes facilitating learning as “a deliberate, conscious intervention in the life of a human being caused by activating learning through challenging obstacles which necessitate exploration into the unknown and by ensuring the continuation of that learning which results in maximising the potential of the human through conquering the obstacles”.

Mentee’s practice

For the purpose of this study my mentee’s practice refers to her educational or teaching practice that specifically focuses on the facilitation of whole brain® learning in the Accounting module.

Mentor’s practice

For the purpose of this study the mentor’s practice that I wish to transform refers to my mentoring practice and excludes my educational or teaching practice. I applied the principle of whole brain® learning and engaged in action research in order to transform my practice.

Module

For the purpose of this study, a module is described as a partial component of a subject. A student enrolls for a subject and the subject may consist of more than one module that must be completed. In this study my mentee’s students were enrolled for the subject Tourism Management that consisted of two modules – Guest House Management and Basic Accounting.

1.11 Chapter outline

Chapter 1: Chapter 1 introduces and provides the rationale for the study; it states the background of the study and the research questions, and it briefly outlines the research paradigm, design and approach.

Chapter 2: Chapter 2 provides a brief discussion of constructivism as a theory, an outline of the tourism industry and the role of education in tourism, the mentoring relationship and

transformational leadership. The whole brain® concept of Ned Herrmann describing various thinking style preferences is also outlined in Chapter 2.

Chapter 3: This chapter provides an overview of the research paradigm (constructivism), design (action research) and approaches (mixed methods – qualitative and quantitative). The results and statistics of the empirical research of this study are analysed and described. This includes the HBDI® profile of the mentor, mentee and her students. It describes the whole brain® strategies that were implemented by both the mentor and mentee; reports on the mentor and mentee’s constructive feedback during the mentor relationship where whole brain® learning was applied. The chapter is concluded with a summary of the mentor’s reflection of the action research process.

Chapter 4: This chapter summarises the results and findings of the study and further areas of research are recommended.

CHAPTER 2

THEORETICAL FRAMEWORK

2.1 Introduction

This chapter investigates the learning theory of constructivism, the complex and ever-changing travel and tourism industry (hereafter tourism industry), and evaluates findings on studies based on tourism curricula.

The mentor relationship is aligned with a whole brain® approach to facilitate learning, transformational leadership and peer mentoring (Du Toit 2012; De Jager 2011). The Herrmann Whole brain® metaphorical model (Herrmann 1995a) is discussed by elaborating on characteristics of the model and by focusing on facilitating learning Accounting by means of the whole brain® approach. Challenging aspects in the mentoring relationship are discussed and appropriate approaches to address these challenges are identified.

2.2 The theory of constructivism

According to Hambrook (2006:5) the first articulation of constructivist ideas was by Giambattista Vico (1668-1744) and Immanuel Kant (1724-1804). They respectively claim that “human beings result from meaning that they have construct for themselves” and “based on the sense information gathered before or during an event, humans reflect on the event and analyse what occurred” (Hambrook 2006:5). As alluded to in Chapter 1, Vygotsky (1896-1934), a social constructivist, views learning as a “social process, where knowledge and understanding are co-constructed through social interaction” (Davis & Winstone 2011).

According to Ültanir (2012:195) the ideas of what constructivism entails were developed by Jean Piaget (1896-1980) and John Dewey (1859-1952). However, Piaget and Vygotsky are usually the two key constructivists mentioned in constructivist theory (Pass 2004; Gouws 1998; Winstone & Millward 2012). Venter (2001:88) identifies different forms of constructivism by various constructivists, such as personal constructivism (Kelly and Piaget), radical constructivism (Von Glasersfeld), social constructivism (Solomon and Vygotsky), critical constructivism (Taylor) and contextual constructivism (Cobern). Schunk (2000:230) identifies different categories of constructivism, namely exogenous, endogenous and dialectical constructivism. Ültanir (2012:195)

states that a mutual thread derived from different constructivism definitions (from the different views of different theorists) is “the idea that development of understanding requires the learner [student] to actively engage in meaning-making”. Learning is therefore an active process where meaning is constructed and understandings are transformed within the learner’s existing frame of reference (Voges 2005:33). The learner (lecturer) does not find knowledge and is not a transmitter of knowledge; she constructs knowledge that provides learners opportunities and experiences from which they will learn (Boghossion 2006; Aldridge, Fraser & Sebela 2004:245; Von Glasersfeld 2005).

2.3 Tourism: An industry and a curriculum

The tourism industry is regarded as the world’s largest and fastest-growing industry (Ring, Dickinger & Wöber 2009:106; World Travel and Tourism Council 2012a; Saayman 2013:110). Although tourism education is relatively new (Ring, Dickinger & Wöber 2009:106), it shows a phenomenal increase in the number of curricula and in institutions offering a course in tourism (Zagonari 2009:4; Weber & Ladkin 2008:448; Busby 2003:319) that are developing against “a background of steady growth” (Busby & Fiedel 2001:501). An example of a possible development is viewing outer space as a new destination (Saayman 2013:99). Tourism curricula should therefore be updated regularly and one should bear in mind that future employment could be much different in the future from today’s; in fact, there may be jobs in the future that do not currently exist (Sheldon, Fesenmaier, Woeber, Cooper & Antonioli 2007:63).

A brief introduction to the tourism industry and its importance and relevance to education and training is presented next.

2.3.1 The tourism industry

The tourism industry can be linked to the hotel and hospitality industries. Stuart-Hoyle (2003:51) emphasises the separation of hotel, hospitality and tourism for employment. A brief introduction to this industry and the major impact it has on the global economy is provided.

2.3.1.1 Putting the tourism industry into perspective

Many definitions of tourism exist; an acceptable definition is offered by Saayman (2013:3) as he describes tourism as “the total experience that originates from the interaction between tourists,

government systems and communities in the process of attracting, entertaining, transporting and accommodating tourists”. Gunn (1998:74) and Evans, Campbell and Stonehouse (2003:120) identify a demand side (the market, or tourists/buyers) and a supply side (offered by the industry – attractions, transportation, services, information, and promotion – they produce the offering).

The key concepts in the definition can be discussed to provide a more detailed description of the tourism industry. The “experience that originates” derives from the fact that tourism is highly service-orientated and not product-based. A product is tangible and can be owned while a service is intangible and is done for your own benefit (Evans, Campbell & Stonehouse 2003:28). Zagonari (2009:2) describes the tourism industry as a “labour-intensive service industry”, since services are offered by the staff members (the human resources) of a company. Service excellence therefore is the key to the tourism industry as it forms part of the tourist’s experience. Service quality can be defined as “the delivery of excellent or superior service relative to consumer expectations” (Zeithaml & Bitner, 2003:85). The investment in and training and development of the workforce (human resources) are crucial and will ensure a sustainable competitive advantage (Smith & Cooper 2000:90; Busby & Fiedel 2001:501; Zagonari 2009:2).

The “interaction between tourists, government systems and communities” implies that the experience is not only gained by the tourism service itself, but that a number of external factors can influence a tourist’s experience positively and/or negatively.

Other than with manufactured goods, which are all the same, services are heterogeneous (Evans, Campbell & Stonehouse 2003:31). This is simply because no person has the identical qualities of another person – one person can regard a service to be good while another person regards it as poor. The person delivering the service will never deliver the exact same service twice. Therefore, other tourists sharing the same hotel, the beach, tour bus etc. may cause one’s experience to be good or not so good.

Government systems may have an influence on the overall experience. A tourist’s experience in a political unstable country will not necessarily be the same as the experience in the same country should the political situation be stable. Local communities can be accommodating towards tourists (to create a positive experience) or due to animosity towards tourists a negative experience can be created (Saayman 2013:160).

The concept of “the process of attracting, entertaining, transporting and accommodating tourists” implies that the experience of a tourist is gained from the beginning to the end – and involves all components of the tourism sector on the supply side. These component sectors are accommodation, attractions, transport, travel organisers and destination organisers; there is interdependence between these components (Evans, Campbell & Stonehouse 2003:35). The accommodation sector includes food and beverage services while the attraction sector includes cultural, sporting and recreational services. These component sectors can be sub-divided into several divisions, as outlined in Figure 2.1.

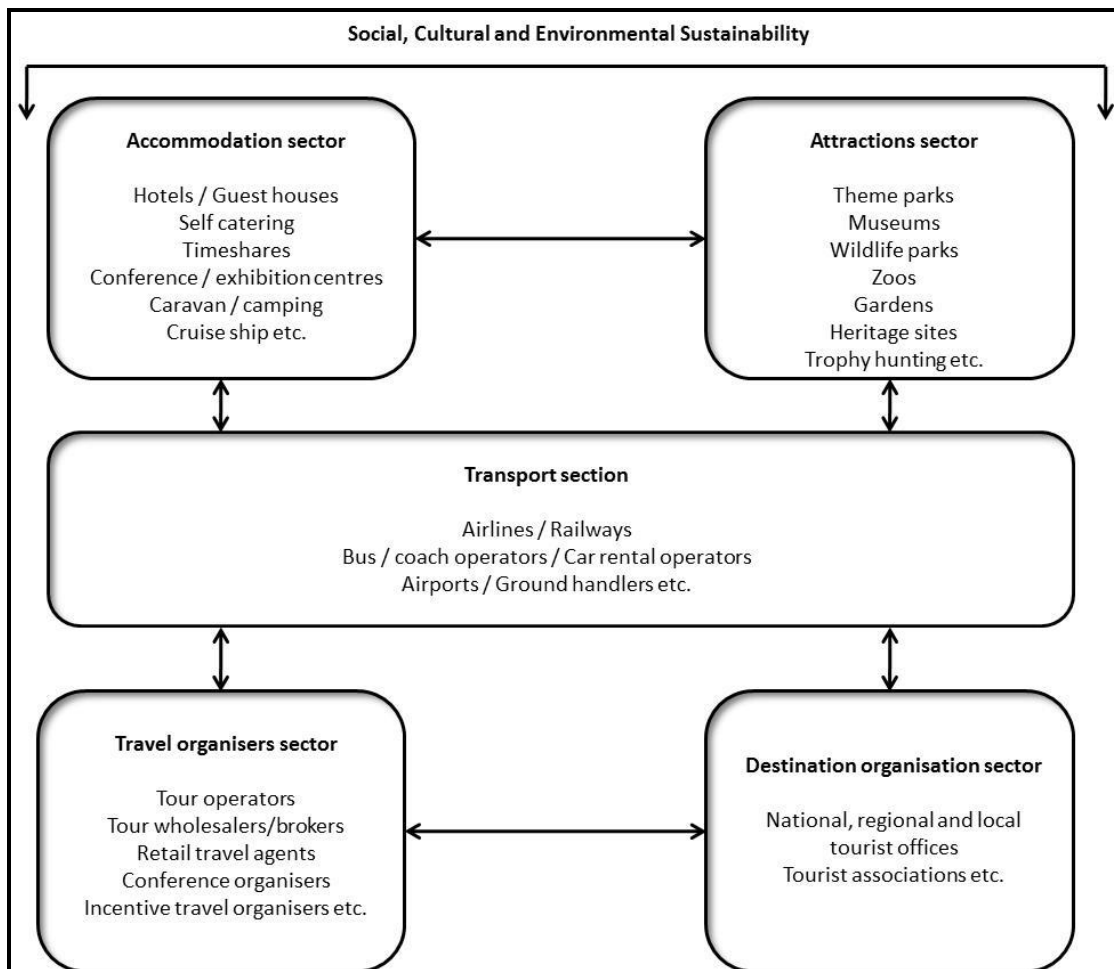


Figure 2.1: The sectors and sub-divisions of the tourism industry (adapted from Middleton & Clarke 2001)

Figure 2.1 indicates how the tourism industry’s sectors “fit” together in a simplistic way. The accommodation and attractions sector relies on the transport sector to transport guests to and from the accommodation or attraction (Evans, Campbell & Stonehouse 2003:35). The transport,

accommodation and attraction sectors then rely on the travel organiser sector and the destination organisation sector to provide them with clients (Evans, Campbell & Stonehouse 2003:35). However, if there were no accommodation, attractions or transport sector, there would consequently not be a travel organiser sector or a destination organisation sector. The arrows in Figure 2.1 have been included to indicate the interdependence in both directions. The different sectors in Figure 2.1 provide only some examples as there are too many to mention and some may only be developed in the future.

A theme that is becoming central in all these component sectors is social, cultural and environmental sustainability (World Travel and Tourism Council 2012a:13), which overlaps with the tourism industry's sectors. Tourism can have a direct or indirect impact on the environment, depending on who is involved (Saayman 2013:188). Developers and product owners can cause an indirect impact (such as roads built for tourists' convenience that take up a large portion of ecosystems) (Saayman 2013:188, 189) and direct impact may be caused by tourists through the recreational activities they practise (such as trophy hunting that can disturb the balance in the ecosystem) (Saayman 2013:191).

Another major impact of the tourism industry is the impact on the global economy. A brief discussion is to follow with regard to this major impact.

2.3.1.2 The economic impact of the tourism industry

The huge impact of the tourism industry globally in 2011 can be reflected by means of its contribution of 9% of the local GDP (a value of more than US\$6 trillion) and its contribution to 255 million jobs (World Travel and Tourism Council 2012a). Since 1990 international arrivals have doubled from 435 million to 940 million in 2010 (World Travel and Tourism Council 2011:2). The increase in global demand is a result of improved standards of living, an increase in wealth and the continuous affordability of air travel (World Travel and Tourism Council 2011:2).

The impact of the tourism industry on global economy runs deeper since it stimulates the commitment and relationship of communities, tourists, governments, local suppliers and businesses (World Travel and Tourism Council 2012:2a). It therefore has a direct, indirect and induced economic impact that contributes to the total Gross Domestic Product (GDP) and employment (World Travel and Tourism Council 2012a:2). These impacts are outlined in Figure 2.2.

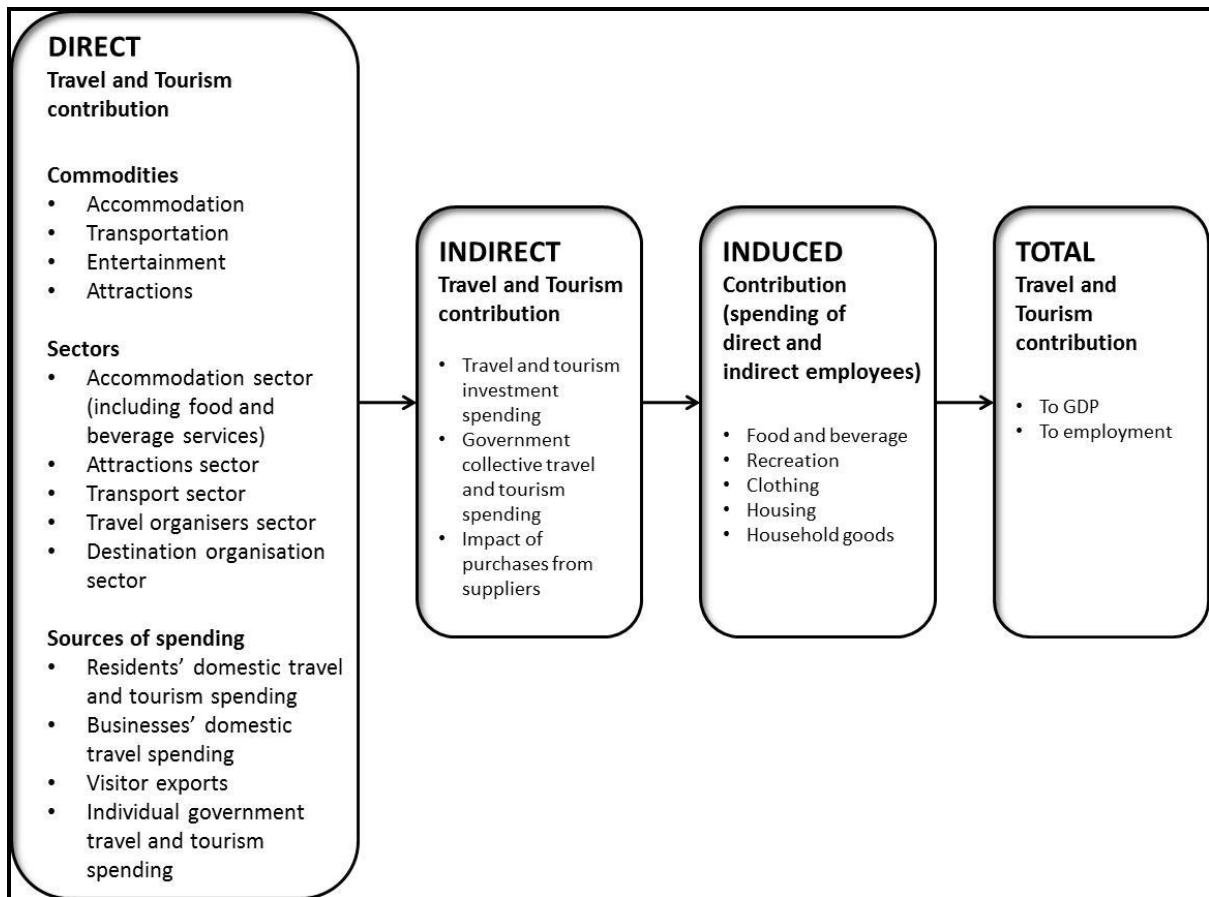


Figure 2.2: The direct, indirect and induced contribution of tourism to the GDP and employment (adapted from the World Travel and Tourism Council 2012a:2)

The direct impacts (Figure 2.2) include the spending of residents and non-residents for both leisure and business purposes and government individual spending within a particular country (World Travel and Tourism Council 2012a:2). These spending are linked directly to travel services in the various accommodation services, food and beverage services, retail trade, transportation services and cultural, sports and recreational service industries (World Travel and Tourism Council 2012a:2). The World Travel and Tourism Council (2012a:2) identifies and describes the indirect contributions as follows:

- Travel and tourism investment spending: this includes both current and future investment activity such as the construction of new hotels.
- Government collective spending: this is spending that is made on behalf of the “community at large” such as resort area sanitation services or tourism marketing and promotion.
- Domestic purchases of goods and services by the sectors dealing directly with tourists: this is, for example, information technology (IT) services at a hotel, thus a sector of which the tourism industry is dependent on to function effectively.

The induced contribution involves the spending of employees directly or indirectly (such as the IT employees) by the tourism industry (World Travel and Tourism Council 2012a:2). The GDP and employment are therefore not only affected by direct travel and tourism contributions and tourists, but also by other sectors that are linked to the tourism industries and the employees. The indirect and induced impacts result in the tourism industry's having a larger impact on the GDP and employment contributions within a specific country. Simplistically the total contribution can be computed as *direct contributions + indirect contributions + induced contributions = the total contribution*.

For South Africa alone it is forecast that travel and tourism is expected to achieve year-on-year growth of 4,3% in GDP and 2,4% in tourism employment (World Travel and Tourism Council 2012b:3, 4). A comparison between the tourism industry in South Africa and global economic impact is presented in Table 2.1.

Table 2.1: Comparing the tourism industry in South Africa's economic impact globally for the year 2011 (World Travel and Tourism Council 2012a:1; World Travel and Tourism Council 2012b:1)

	South Africa's economic impact	A global economic impact
GDP: Direct contribution	South Africa contributed directly 2,7% of the total GDP.	Globally the tourism industry contributed 2,8% directly to the total GDP.
GDP: Total contribution	South Africa contributed in total 8,6% of the GDP.	In total the tourism industry contributed 9,1% of the total GDP.
Employment: Direct contribution	Directly the contribution was 513 000 jobs (3,9% of the total employment).	Directly the contribution was 98 031 500 jobs (3,3% of the total employment globally).
Employment: Total contribution	The total contribution (direct and indirect jobs supported by the tourism industry) was 9,0% of the total employment.	The total contribution (direct and indirect jobs supported by the tourism industry) was 8,7% of the total employment.
Visitor exports	Generated 8,7% of total exports and are forecast to achieve year-on-year growth of 4,4%.	Generated 5,3% of total exports and are forecast to achieve year-on-year growth of 3,6%.
Investment	Investment in the tourism industry was 7,6% of the total investment.	Investment in the tourism industry globally was 4,9% of the total investment.

From Table 2.1 it can be seen that the tourism industry has, not only in South Africa but globally, a huge economic impact on the GDP. In South Africa the total contribution, which includes indirect and induced impacts (See Figure 2.2) contributed 8,6% to the total GDP compared to the 2,7% of the

direct contribution. This emphasises the importance of indirect and induced contributions as its contribution (7,9%) was higher than the direct contribution on its own. The total contribution towards employment, the forecast growth of visitor exports and the high percentage of investment in the tourism industry in South Africa and globally) underscores the tourism industry as one of the world's leading industries (World Travel and Tourism Council (2011:2).

2.3.2 The importance of a tourism curriculum

The rapid growth of this world-leading industry has led to the necessity to develop and educate students or staff members professionally (Ring, Dickenger & Wöber 2009:107; Visser & Rogerson 2004:206). According to Gunn (1998:75) the tourism industry is globally acknowledging the importance of academic education and developing staff members. Educational institutions have been established, the number of students accepted for tourism curricula has increased (Stuart-Hoyle 2003:49) and the supply of tourism curricula has grown significantly (Dale & Robinson 2001:30). However, only a few South African universities have founded tourism studies departments (Visser & Rogerson 2004:201) but have added travel and tourism curricula in recent years (Visser & Rogerson 2004:206). A higher educational institution is important because it is not cost-effective for small firms to train their staff (Zagonari 2009:3) and large firms cannot retain their skilled staff (Zagonari 2009:3). According to Inui, Wheeler and Lankford (2006:26) students have expectations of high employment opportunities in the tourism industry, but the supply of graduates has increased and a lack of career opportunities exists, which is a major concern (Raybould & Wilkins 2005:214; Busby & Fiedel 2001:505). Other major concerns are that tourism enterprises do not recognise the importance of education and do not appreciate the effort of academics in tourism because the industry is dominated by entrepreneurs that are uncertain of, for example, the content and learning outcomes of tourism curricula and perceive students as "over qualified but under-experienced" (Zagonari 2009:3; Raybould & Wilkins 2005:211,213; Dale & Robinson 2001:30); graduates are perceived to have a lack of experience, they are too young and curricula are poorly designed (Raybould & Wilkins 2005:212); and non-tourism graduates are recruited if they can demonstrate generic vocational skills required in the tourism industry (Dale & Robinson 2001:30; Zagonari 2009:211). Employment opportunities are therefore restricted and some of the strongest graduates seek employment opportunities in other industries (Busby & Fiedel 2001:502; Raybould & Wilkins 2005:214). Busby (2003:330) and Busby and Fiedel (2001:505), however, conclude that students obtain employment much more easily if an internship programme (also referred to as work placement) is included in a tourism curriculum.

The purpose of a tourism curriculum is to prepare students for the range of employment opportunities in the tourism industry by means of developing their academic, personal and intellectual knowledge and skills that will enable them to take the responsibilities required in the future (Gunn 1998:75; Stuart-Hoyle 2003:49; Inui, Wheeler & Lankford 2006:26; Busby & Fiedel 2001:505). However, Raybould and Wilkins (2005:212) note that, due to poor curriculum design, work placements focus on “operational” duties more than “management” duties, which is, besides a lack of experience, the students’ age and the dominance of entrepreneurs that do not appreciate the effort of academics in tourism (Zagonari 2009:3), one of the reasons why most students studying a Tourism Management course do not enter the tourism industry as managers. I had similar experiences when I graduated and wanted to enter the tourism industry. The top managers were usually non-tourism graduates with many years of experience within the tourism industry. They employed managers within the tourism industry with their respective years of experience and therefore regarded any tourism graduate as someone with limited knowledge and skills. I therefore agree with Zagonari (2009:3) that non-tourism graduates and entrepreneurs who dominate employment within the tourism industry do not understand and appreciate the value of graduates. However, I have also realised that a manager should understand the operational aspects of the industry. A front office manager in the hotel industry, for example, needs to have experience as a receptionist, reservationist and should understand the operations in the housekeeping department. A tourism graduate does not necessarily have the necessary experience in this regard. I therefore support work placements for tourism students in the operational areas (such as receptionists) but I would suggest longer periods of work placements. The student should also be required to work, as a peer, with a manager during the work placements (not in the initial phases of work placement; rather towards the end). Ring, Dickinger and Wöber (2009:114-115) state that work placements are viewed as the most important aspect of the tourism curriculum.

Institutions are moving towards differentiating their tourism curricula by focusing on a specialist tourism curriculum that offers a “distinct identity” to the institution, rather than focusing on a generic tourism curriculum (Stuart-Hoyle 2003:54; Dale & Robinson 2001:31). Offering a specialist curriculum enables the institution to meet the employment requirements of the diverse tourism industry (Busby & Fiedel 2001:503). The curriculum should therefore meet both the education and industry expectations (Raybould & Wilkins 2005:203). A specialist tourism curriculum can therefore focus on a specific component within the tourism industry, such as travel agency operations or the accommodation sector. Gunn (1998:74), Smith and Cooper (2000:93), Raybould and Wilkins (2005:204), Busby and Fiedel (2001:505), Stuart-Hoyle (2003:56), Inui, Wheeler and Lankford

(2006:26) and Ring, Dickinger and Wöber (2009:109) identified common subjects (or modules) that should be included in an undergraduate tourism programme:

- Skill development in written communication
- Transferable skills, especially lifelong learning, creativity, critical and flexible thinking, social skills
- Interpersonal relations
- Human resource management
- Marketing
- Entrepreneurship
- Future of tourism sustainability, environment, nature and ecotourism
- Preparation for the industry – vocational part of an education, preparing students for their future employment
- Management skills
- Finance
- Information technology (IT), eCommerce, eTourism, microcomputer literacy
- Operational (also referred to as vocational) subjects (hotel-restaurant operation and services, food preparation, bartending, rooms division management, front desk operations, events, conference and convention operations, and travel agency operations among others)

I agree on the identified subjects (or modules), but I am of the opinion that they are only effective in a tourism curriculum if solely applied to tourism-related content (or comparing the tourism-related content with generic content). Therefore, instead of focusing on generic human resource management, marketing, entrepreneurship, finance and information technology, these subjects should rather be contextualised for tourism regarding the following: human resource management, tourism marketing, tourism entrepreneurship, tourism finance and tourism information technology. In some cases the generic aspects of a subject are inevitable (such as basic computer skills at information technology). However, central reservation systems, which are based on global distribution systems (Saayman 2013:231), can be introduced to tourism information technology. Saayman (2013:231) indicates that a computer reservation system “gives the travel agent access to multiple airlines’ [and hotels’ and car rentals’] central reservation systems”. Amadeus, Galileo International, SABRE and Worldspan are identified as the four primary global distribution systems (Saayman 2013:231). Generic marketing, for example, usually focuses on tangible aspects of a

product whereas tourism marketing would rather focus on marketing an intangible aspect (the service that is experienced).

Inui, Wheeler and Lankford (2006:26) stress the importance of balancing academic and operational subjects that enable students to respond in a developing tourist society. I believe a tourism curriculum should make provision for at least one vocational subject. Work placements, which prepare students for their future employment, should be linked to the vocational subject. The content of academic subjects (such as Tourism Entrepreneurship), should also be linked to the vocational subject. If a tourism curriculum's vocational subject is, for example, events, conferences and convention operations, students may be required to act as entrepreneurs (subject Tourism Entrepreneurship), designing and conducting their own events.

As mentioned, Accounting (a finance-related subject) should form part of a tourism curriculum but should be contextualised. Accounting is a module of the subject Tourism Management, which is offered during the second year of study (at NQF level 6) as part of the Advanced Diploma in Tourism Management.

2.4 Thinking style preferences and Herrmann's whole brain® model

The relationship between my mentee and me was aligned with whole brain® learning as the theoretical framework.

Coffield, Moseley, Hall and Ecclestone (2004) conducted a study whereby thirteen learning styles were evaluated in order to identify the implications on pedagogy and to identify their impact on student learning. The flexible, stable learning preferences that were evaluated include Kolb's learning style inventory, Honey and Mumford's Learning Style Questionnaires, the Herrmann "whole brain®" model and the Herrmann Brain Dominance Instrument® (HBDI®) and Allison and Hays' Cognitive Style Index. Kyprianidou, Demetriadis, Tsiatsos and Pombortsis (2012:84) applied the Raudsepp Problem Solving Styles Inventory, similar to the HBDI®, for their study concerning learning styles and teamwork. Oosthuizen (2001:75) evaluated learning / thinking style models when choosing an appropriate model for his study and summarised it as outlined in Table 2.2.

Table 2.2: A summary of learning/thinking style methods that were evaluated (Oosthuizen 2001:75)

Model	Instrument	Summary of evaluation
Kolb's learning style model	LSI	<ul style="list-style-type: none"> • focus on learning process • does not quantify measurement • lacks reliability and validity
Myers-Briggs model	MBTI	<ul style="list-style-type: none"> • psychometric instrument • not applicable for educational purposes
Dunn & Dunn's Learning Style model	PEPS	<ul style="list-style-type: none"> • poor test/re-test reliability • lacks construct validity
McCarthy's 4MAT system	-	<ul style="list-style-type: none"> • limited research • provides only guidelines to facilitator • does not quantify measurement of individual preferences
Herrmann's Whole brain® model	HBDI®	<ul style="list-style-type: none"> • combines brain dominance (the whole brain®) and thinking style preference. • gives an individualised quantified measurement of thinking preference • validity has been tested

The Herrmann Whole brain® Model was identified as the most suitable model as I could relate it directly to my research questions. The instrument, the HBDI®, is the only instrument to combine brain dominance and thinking style preferences and to provide quantified measurements of thinking style preferences for any individual (whereas McCarthy's 4MAT System provides only guidelines to the facilitator and does not quantify measurement of individual preferences). The lack of reliability and validity of Kolb's Learning Style Model and Dunn & Dunn's Learning Style Model justifies the inappropriateness to select these learning style models. The Myers-Briggs Model was not considered due to it being non-specific for educational purposes.

Apart from these reasons why the Herrmann Whole brain® Model was identified as the most suitable model, Coffield, Moseley, Hall and Ecclestone (2004:83) and Voges (2005:55) further provide the following reasons why the HBDI® can be used as an instrument to reflect on individual and group thinking and learning preferences:

- It is detailed and situation-focused (more than its competitors)
- It accommodates many issues that are incomplete or less reliable and viable in other instruments
- It is concerned with "thinking, feeling and doing as an individual and in social contexts"
- It addresses long-established habits and personality traits

- It addresses situationally-dependent preferences
- It is independent of cognitive ability
- Lifelong learning experiences may promote “whole person” and “whole organisation” balance
- It accommodates student differences

An elaboration of Herrmann’s metaphorical whole brain® model is discussed, followed by a discussion of how the mentoring relationship is aligned to incorporating whole brain® learning.

2.4.1 Whole brain® learning

Dominance as part of the human body is natural and normal (Herrmann 2008:2). One can see that, for example, a dominant hand is stronger, more capable and skilful because it is used more often; but the non-dominant hand still functions as it assists the dominant hand (Herrmann 2008:2). The same applies to paired structures, occurring internally, which are therefore not visible. The paired structures that occur in the brain, representing the left cerebral hemisphere (Quadrant A), left half of the limbic system (Quadrant B), right half of the limbic system (Quadrant C) and the right cerebral hemisphere (Quadrant D) (Herrmann 1995a:64) imply that dominance within one (or more than one) brain structure occurs, whereas the non-dominant brain structures still collaborate with the dominant structures (Herrmann 1998:2). The four structures (from now on referred to as *quadrants*) are therefore interconnected and represent the whole brain® concept (the four quadrant model of thinking preferences) (Herrmann 1998:3).

The four quadrant whole brain® concept developed from an integration of the left/right hemisphere brain theory (Sperry’s model) and the triune brain theory (MacLean’s model) (Herrmann 1995a, De Boer, Steyn & Du Toit 2001:186) since the role of the limbic system was previously ignored (Oosthuizen 2001:64). Figure 2.3 provides the whole brain® model that metaphorically represents the brain.

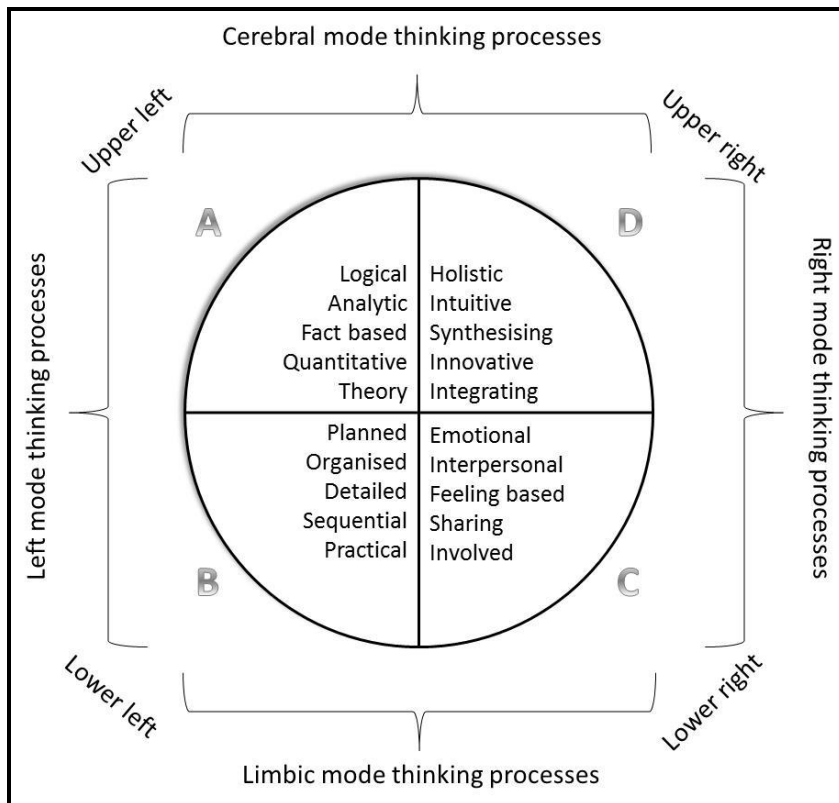


Figure 2.3: The Herrmann whole brain® model (adapted from Herrmann 1995a:411 and De Boer, Bothma, Du Toit & Scheepers 2012)

Herrmann established a metaphorical four-quadrant model representing the whole thinking brain. The A quadrant represents the left cerebral hemisphere, Quadrant B represents the left half of the limbic system, Quadrant C represents the right half of the limbic system and Quadrant D represents the right cerebral hemisphere.

2.4.2 Understanding the four quadrants

Every group of students represent thinking style preferences in all four quadrants (Du Toit, De Boer & Bothma 2010; Herrmann, 1996:151; De Boer & Van den Berg 2001:124), but learning avoidance in a specific quadrant may also exist (De Boer & Van den Berg 2001:124). It is therefore imperative to move away from traditional left brain teaching and assessment strategies that De Boer and Van den Berg 2001:119 refer to as evaluation strategies. Incorporating whole brain® learning not only ensures effective learning, facilitating learning and developing the full potential of students (De Boer & Van den Berg 2001:119), but also sparks interest if all quadrants are addressed in the initial phase

(Scheepers, De Boer, Bothma & Du Toit 2011:75) and are in alignment with outcomes-based education (Oosthuizen 2001:72; De Boer, Steyn & Du Toit 2001:192; Munro & Coetzee 2007:92).

Herrmann (1995b) categorises the dimensions as A – know it; B – do it; C – sense it; and D – try it. In order to incorporate whole brain[®] learning one should have a broad, comprehensive understanding of the four quadrants.

- *Quadrant A (Analytical; Theorist) – Left Cerebral Hemisphere*

Students with a preference for the left cerebral hemisphere's thinking are factual, analytic, quantitative, technical, logical, rational, critical, bottom-line-tough; reality is "now" (Herrmann 1995a:79; Scheepers, De Boer, Bothma & Du Toit 2011:76; De Boer, Steyn & Du Toit 2001:186; De Boer & Van den Berg 2001:122; Herrmann & Herrmann-Nehdi 1995:3). It deals with data analysis, risk assessment, statistics, financial budgets and computation, as well as with technical hardware, analytical problem solving based on facts, and making decisions based on logic and reasoning and focus on the task at hand (Lumsdaine & Lumsdaine 1995:83; De Boer, Bothma & Oldwagen 2012:91). According to Coffield, Moseley, Hall and Ecclestone (2004:77) they find it challenging and difficult to address and accommodate the "feeling self" and the "humanitarian style"; they would not confront or express their emotions, but would rather look for other ways to deal with it (such as discontinuing the conversation or by adding a new room, for example) (Herrmann 1995a:79; De Boer, Bothma & Oldwagen 2012:91).

- *Quadrant B (Sequential; Organiser) – Left-half of the limbic system*

Students with a preference for the left-half of the limbic system's thinking are organised, sequential, controlled, planned, conservative, structured, show perfection to detail, are disciplined, persistent, solid, down to earth, neat and have the ability to focus on one thing at a time (Herrmann 1995a:81; Scheepers, De Boer, Bothma & Du Toit 2011:76; De Boer, Steyn & Du Toit 2001:186; De Boer & Van den Berg 2001:122; Herrmann & Herrmann-Nehdi 1995:3). The preference deals with administration, tactical planning, organisational form, safekeeping, solution implementation, maintaining the status quo and the "tried-and-true" (Lumsdaine & Lumsdaine 1995:86), and the individual seeks a predictable, stable and safe environment; therefore such individuals tend to repel change (De Boer, Bothma & Oldwagen 2012:91; Herrmann 1995a:81). According to Coffield, Moseley, Hall and Ecclestone (2004:77) they find it challenging and difficult to accommodate the

innovatory style and safe-keeping style. (Herrmann 1995a:79; De Boer, Bothma & Oldwagen 2012:91). Table 2.3 summarises the expectations, the modes and the design and delivery approaches for Quadrant B thinking preference.

- *Quadrant C (Interpersonal; Humanitarian) – Right-half of the limbic system*

Students with a preference for the right half of the limbic system's thinking are sensory, kinaesthetic, emotional, spiritual, empathetic, nurturing, interpersonal, highly participative, team oriented and symbolic (Herrmann 1995a:83; Scheepers, De Boer, Bothma & Du Toit 2011:76; De Boer, Steyn & Du Toit 2001:186; De Boer & Van den Berg 2001:123; Herrmann & Herrmann-Nehdi 1995:3). The quadrant deals with awareness of feelings, body sensations, values, music and communication (Lumsdaine & Lumsdaine 1995:89) and employee development, on-site training, safety of workers and effective communication are important to such individuals (De Boer, Bothma & Oldwagen 2012:92). They find it challenging and difficult to accommodate the rational self and the theoretical style (Coffield, Moseley, Hall & Ecclestone 2004:77), are undisciplined and flaky (Herrmann 1995a:83) and tend to avoid data and analysis, complicated detail and an over-use of technology (De Boer, Bothma & Oldwagen 2012:92).

- *Quadrant D (Imaginative) – Right cerebral hemisphere*

Students with a preference for the right cerebral hemisphere's thinking are visual, holistic, innovative, metaphorical, creative, imaginative, conceptual, special, flexible, integrative, synthesising, adventurous, risk-takers, artistic, fanciful, open-ended, conceptual and intuitive (Herrmann 1995a:85; Scheepers, De Boer, Bothma & Du Toit 2011:76; De Boer, Steyn & Du Toit 2001:186; De Boer & Van den Berg 2001:123; Herrmann & Herrmann-Nehdi 1995:4; De Boer, Bothma & Oldwagen 2012:92). The quadrant deals with futures, possibilities, synthesis, play, dreams, vision, strategic planning, the broader context, entrepreneurship, inventive, and future-oriented; it is playful, risk-driven and independent (Lumsdaine & Lumsdaine 1995:92). According to Coffield, Moseley, Hall and Ecclestone (2004:77) these individuals find it difficult and challenging to accommodate the organising style and the safe-keeping style and they have a lack of flexibility, do not like detail, fear structure, are impersonal, unreliable and do not favour time management (Herrmann 1995a:85; De Boer, Bothma & Oldwagen 2012:92).

A facilitator (or mentor) should understand students' or mentees' expectations (what they prefer), their modes of learning (how they learn) and what they struggle with. This should be kept in mind when they facilitate learning, assess or mentor (Du Toit 2012:1224). This is highlighted in Table 2.3.

Table 2.3: Expectations, modes of learning and avoidances of students and mentees per quadrant (adapted from Du Toit 2012:1224; Du Toit 2013:56; Herrmann 1995a:79, De Boer, Bothma & Oldwagen 2012:91 and De Boer, Bothma, Du Toit & Scheepers 2012)

Quadrant A	Quadrant D
<p>Expectations of students (and mentees):</p> <ul style="list-style-type: none"> • information that is precise and to the point • theory and logical rationales • proof of validity • textbook readings • data and numbers • research reference • purpose • terminology • spread sheets • challenging problems to solve • concrete information / presentations • expert sources / citations • clear objectives <p>Modes of learning – students learn by:</p> <ul style="list-style-type: none"> • acquiring and quantifying facts • applying analysis and logic • thinking through ideas • building cases • forming theories <p>Mentees and students struggle with:</p> <ul style="list-style-type: none"> • expressing emotions • lack of logic • vague, imprecise concepts of ideas 	<p>Expectations of students (and mentees):</p> <ul style="list-style-type: none"> • approaches that are playful • interviews, pictures, metaphors • spontaneity • opportunities to experiment • freedom for exploration and discovery • quick pace and different formats • mental imagery • big picture overviews • brain storming concepts • metaphors and visual illustrations <p>Modes of learning – students learn by:</p> <ul style="list-style-type: none"> • taking initiative • exploring hidden possibilities • relying on intuition • self-discovery • constructing concepts • synthesising content <p>Mentees and students struggle with:</p> <ul style="list-style-type: none"> • time management and deadlines • administration and details • lack of flexibility • excessive strictness
Quadrant B	Quadrant C
<p>Expectations of students (and mentees):</p> <ul style="list-style-type: none"> • an organised approach • starting point, a middle and an ending point • clear guidelines and instructions • practical and concrete examples and 	<p>Expectations of students (and mentees):</p> <ul style="list-style-type: none"> • group/team discussions or projects • hands-on learning / activities • small group discussion • human interest stories / narratives • personal connection

<p>applications</p> <ul style="list-style-type: none"> • time management • skills practice • well-structured activities • detail • step-by-step processes • repetition and review <p>Modes of learning – students (and mentees) learn by:</p> <ul style="list-style-type: none"> • organising and structuring content • sequencing content • evaluating and testing theories • acquiring skills through practice • implementing course content <p>Students (and mentees) struggle with:</p> <ul style="list-style-type: none"> • taking risks • unclear concepts and instructions • ambiguity 	<ul style="list-style-type: none"> • emotional, feeling based approaches • user-friendly learning • use of all the senses • sharing of ideas / personal reactions • icebreakers / music • qualitative research • physical activities <p>Modes of learning – students (and mentees) learn by:</p> <ul style="list-style-type: none"> • listening and sharing ideas • integrating experiences with self • moving and feeling • harmonising with the content • emotional involvement <p>Students (and mentees) struggle with:</p> <ul style="list-style-type: none"> • too much data and analysis • lack of interaction • lack of time for relationships • lack of personal feedback • pure lecture, lack of participation
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According to Herrmann (1996:14), the whole brain® model is based on the following principle: “Four interconnected clusters of specialised mental processing modes that function together situationally and iteratively, making up a whole brain® in which one or more parts become naturally dominant”. This dominance, or preferred thinking styles, are measured by the HBDI®.

2.4.3 The Herrmann Brain Dominance Instrument® and brain dominance profiles

The HBDI® is an assessment tool that determines a person’s mental preference for specific thinking modes (De Boer, Bothma & Oldwagen 2012:90; De Boer & Van den Berg 2001:120) and is in a questionnaire format comprising 120 questions. It is important to note that the HBDI® is not a test with right or wrong answers, but a model showing how mental preferences are distributed in a four-quadrant profile (Herrmann 1995b).

Coffield, Moseley, Hall and Ecclestone (2004:79), and Herrmann (1995a:66) indicate that it covers the following types of preference and performance rating and Herrmann (2009:12 – 14) provides an explanation for each:

- Handedness: handedness provides a simple example of the body's tendency towards dominance in paired structures. Handwriting has a connection to language processing – a powerful mental process.
- Strong and weak school subjects: ranking school subjects, an indicator of an earlier, often influential time of a person's life, can indicate an early orientation toward math, foreign language or nature language, and through this orientation a possible inclination toward associated thinking styles.
- Work elements (e.g. administrative, innovating, expressing ideas): they show thinking styles (mental preference) that are most accessed in a work environment which is often influenced by the opportunities and challenges provided from one's work experiences. They may align completely with general preferences, or they may stem from situations unique to one's working environment
- Key descriptors (e.g. verbal, emotional, factual, holistic): they provide a general overview of one's mental preferences in day-to-day life.
- Hobbies (e.g. fishing, photography, travel): how one spends one's leisure time provides additional clues about the tilt of one's mental preferences (other clues include separate questions related to one's preferred subjects in school, education and occupational choices).
- Energy level (e.g. day person, day/night person equally, night person): in general terms, people who are left-mode dominant are frequently more morning- or day-orientated and people who are right-mode dominant are frequently more night-orientated. However, this can be influenced by life circumstances.
- Motion sickness (frequency and connection with reading): one's sense of balance is maintained with information from two biological sources, the eye and the inner ear. Motion sickness occurs when input from these two sources conflicts. Left-mode people often have the ability to deal with facts and information sequentially and thus may have the inner control to make an "executive decision" to go with either the information from the eye or the ear but not both at once. Right mode people often have a large tolerance for ambiguity and tend to take note of both inputs and may end up nauseous as a result. However, it is only a tendency and there are many exceptions to this trend.
- Adjective pairs (forced choice: e.g. conservative/empathetic): They come from the forced choice pairings section on the HBDI®. By forcing one to choose between two different terms, this section typically reveals the thinking style distribution that is most instinctive and how one reacts when under pressure. This distribution may or may not be the same as one's overall preference.

- Introversion/extraversion (nine-point scale): in general terms, introverts tend to be more left-mode orientated and extroverts more right-mode orientated. However, each quadrant may have its own continuum of introvert to extrovert, and thus its own interpretation and impact.
- 20 questions (five-point Likert scale) ranging from “strongly agree”, “agree”, “in between”, “disagree” and “strongly disagree”): The twenty questions [statements] are provided where the respondent has to select “strongly agree”, “agree”, “in between”, “disagree” or “strongly disagree”. An example of a statement is “I prefer to work with others in a team effort rather than solo”.

The scoring of South African data is done by Herrmann International in the United States of America (De Boer & Van den Berg 2001:121). Three preference codes are identified: preference code “1”, the primary code, indicates a strong preference; preference code “2” indicates thinking modes that an individual uses if necessary (individuals are comfortable with these thinking modes) and preference code “3” that implies a lack of interest for a specific thinking mode (Herrmann 1995a:70). De Boer, Steyn and Du Toit (2001: 187) identify that a score of 67 to 100 indicates preference code “1” (a strong preference for thinking in that particular quadrant), a score of 34 to 66 indicates preference code “2” (the individual is comfortable in that particular quadrant), and a score less than 34 indicates preference code “3” (the individual avoids any thinking in that particular quadrant). Figure 2.4 provides examples of individual profiles with preferences for a single quadrant (I), triple quadrants (II) and double quadrants (III). The preference code for the double dominant profile (III) is identified as 3211 where the preference code “3” refers to the individual avoiding thinking in Quadrant A, preference “2” refers to the individual being comfortable with regard to thinking in Quadrant B and preference code “1” refers to the individual indicating a strong preference for thinking in Quadrants C and D.

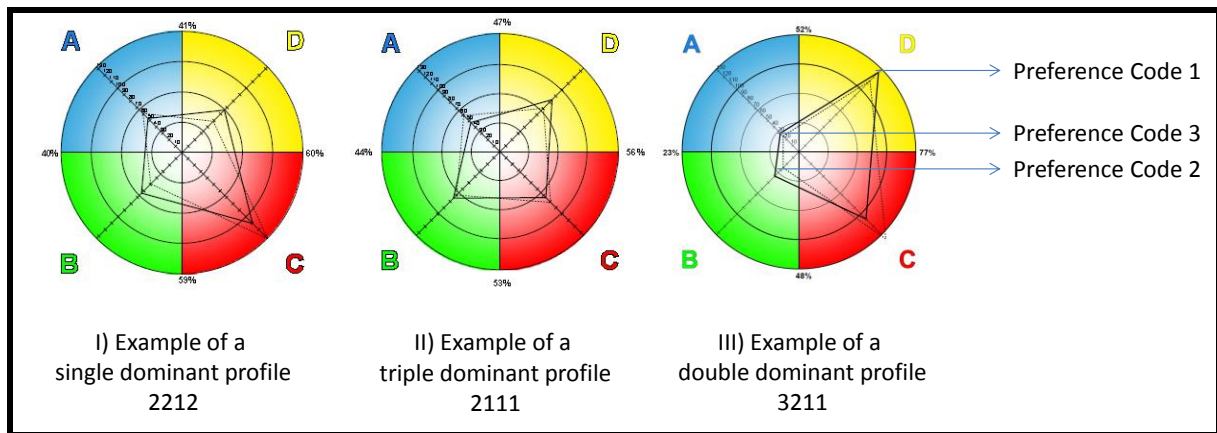


Figure 2.4: Examples of dominant profiles and preference codes (adapted from Herrmann International 2006 and 2011)

Single dominant profiles (where preference code “1” occurs only once in a profile) represents 7% of the population, triple dominant profiles 30% (where preference code “1” occurs three times) and 3% represents a quadruple dominant profile (the profile represents only preference code “1”). The remaining 60% represents double dominant profiles – in the same hemisphere, in the cerebral or limbic or diagonal opposites – and preference code “1” appears twice (Herrmann 1995a:86 – 89).

Herrmann (1995a:76; 1995b; 2009:15) stipulates that a profile is “neither good nor bad, right nor wrong”; it is just a static representation of an individual’s thinking preference at a specific point in time. It is also important to note that the HBDI® measures only preference for a mental activity (and not competence or ability in performing the activity) – it is “a metaphor describing how a person prefers to acquire and process information, not how fast or accurately they do it” (Herrmann 1995a:70).

A profile tends to remain constant but change can take place if there is a reason for it (Herrmann 2009:16). A changed profile, which usually occurs over a long period of time, may be due to “an individual’s desire and willingness to change, or with a change in their life’s circumstances, or as a result of a significant emotional event” (Herrmann 2009:16).

2.4.4 Accounting and the four quadrants

De Boer and Van den Berg (2001:119, 124), and West and Saunders (2006:718, 720) indicate the importance of shifting away from the traditional teaching methods in South African and global

educational systems (it focuses on left brain teaching strategies, textbooks and lectures only). Abeysekera (2011:1) supports this statement for Accounting students and refers to the traditional learning methods as supporting “passive learning”. Students new to Accounting usually view it as a difficult subject (Borja 2003) and those that should complete Accounting as a subject compulsory to a non-Accounting curriculum tend to be less motivated, unhappy and not interested in the course (Cruz 2001; West & Saunders 2006:724).

Many recent research studies globally (Cheng 2009; Lee & Hung 2009; Yu 2011; Buckhaults & Fisher 2011; Abeysekera 2011; Hosal-Akman & Simga-Mugan 2010; West & Saunders 2006, Bearden 2004 and Byrne, Flood & Willis 2009) focus on introducing alternative learning and teaching methods and instructions for Accounting students as opposed to traditional methods.

West and Saunders (2006:718) argue that a humanistic (or person-centred) approach opposed to the traditional approach should be followed. When following a humanistic approach, the lecturer becomes a facilitator (but still an authority figure), and the student has the responsibility of developing his / her own programme of learning, whereas the facilitator provides the necessary learning resources (West & Saunders 2006:720). The humanistic approach can therefore accommodate students with preferences for Quadrant C; this quadrant (right-half of the limbic system) thinking is “humanistic, cooperative and spiritual” (Lumsdaine & Lumsdaine 1995:89).

The lecturer becomes a facilitator in web-based collaborative learning (Cheng 2009:757). In Cheng’s study (2009:764) it was found that the students enjoyed engaging in the group discussion on the Internet, even-though it was new to most of them. Web-based collaborative learning creates an opportunity where students can stimulate their creative thinking (Cheng 2009:764). Co-operative learning resulted in higher results in the framework of their study opposed to traditional learning in the study of Hosal-Akman and Sigma-Mugon (2010:258). They do, however, note that the academic performance was not as high as it was expected, due to students probably being used to the traditional way of learning (Hosal-Akman & Sigma-Mugon 2010:258). Abeysekera (2011:1) introduced instructional methods (interactive and group case-based) to encourage active learning opposed to traditional learning. The lecturer is still seen as the dominant figure in traditional and interactive approaches, but is less dominant in the group case-based study approach (Abeysekera 2011:1). The findings of the study (Abeysekera 2011:11) concluded that the participants differed in their preferred choices (of the instructional methods), but the interactive approach was the most popular followed by the group case-based approach. Collaborative learning, co-operative learning,

an interactive approach to learning and group case-based studies all represent Quadrant C as the main focus is on engaging in and learning from group discussions, listening to one another and sharing ideas. Case studies, however, are a preferred learning task for an A-quadrant thinker (Lumsdaine & Lumsdaine 1995:83).

Most studies adopt learning strategies that mainly move the focus to accommodating the thinking style preference of Quadrant C students. If the learning opportunities were to eliminate the methods used in the traditional way, they would still cater for selected students only. Focusing on only one a specific method does not align with whole brain® teaching and learning; a “one fits all approach” is not effective (Scheepers, De Boer, Bothma & Du Toit 2011:75). According to Herrmann (1996:151) a “complete spectrum of learning style preferences” is represented by classrooms and this point of view is supported by the studies of De Boer, Steyn and Du Toit (2001), and De Boer and Van den Berg (2001).

It can also be mentioned that people in financial occupations (such as accountants, financial officers, bookkeepers, actuaries, financial advisors, stock brokers and financial controllers) have left-brain preferences (Herrmann 1995a:393-394; Lumsdaine & Lumsdaine 1995:83) but Tourism students have right-brain preferences and prefer practical activities, rather than theorising and reflecting (Lashley & Barron 2006:556; Zagonari 2009:4). Practical activities, however, are characterised as left-brain preferences (more specifically Quadrant B according to Herrmann’s whole brain® concept) (Lumsdaine & Lumsdaine 1995:86). However, there are many people that refer to experiential learning as “practical activities”. Lashley and Barron’s reference to “practical activities” (Lashley & Barron 2006:556) might therefore be interpreted as “experiential learning” (learning through experience) that represents Quadrant C of the Herrmann whole brain® model.

This emphasis on balancing thinking abilities is of the essence. Whole brain® thinking assists in the ability to respond creatively to the changing demands of the world and ensures that learning style diversity is catered for (Herrmann 1995a:249; Lumsdaine & Lumsdaine 1995:77; De Boer, Steyn & Du Toit 2001:186; Lee & Hung 2009:80; Holtzhausen 2010:7). Incorporating all four quadrants will also contribute to the development of students, lead to better performance of students as they utilise more than one method and students tend to recall information better at a later stage (Holtzhausen 2010:7, 16; Lee & Hung 2009:80).

Lumsdaine and Lumsdaine (1995:97) further acknowledge that all four thinking quadrants are involved in learning. External learning – relating to Quadrant A – focuses on lectures and textbooks that are taught from authority. Procedural learning – relating to Quadrant B – is a methodical testing of aspects that are taught (repetition and practice are used to improve skills). Interactive learning – relating to Quadrant C – focuses on learning through discussions and sensory-based experiments. Internal learning – relating to Quadrant D – focuses on learning by means of visualisation – whereas one recognises a concept “holistically and intuitively” (Lumsdaine & Lumsdaine 1995:97).

It is therefore imperative that students, facilitators, mentors and mentees develop all four thinking styles, but factors that may have an influence on Accounting students’ performance should also be taken into consideration. As Herrmann (1995a:76) states, “the HBDI® measures preference for a mental activity, which is entirely different from competence in performing it”. The student will acquire fewer competencies when a misalignment between the thinking preference of the facilitator (teacher) and the thinking preference of the student exists (De Boer & Van den Berg (2001:119). Student and lecturer anxiety may exist towards the subject and introducing new methods (such as whole brain® learning) will reduce this anxiety (Buckhaults & Fisher 2011:34). Yu (2011:13) concluded that mathematical proficiency, student perception of the teacher’s effectiveness, the language proficiency and knowledge of Accounting obtained in high school affect Accounting performance, whereas gender, a student’s study habits, study time and attendance in review classes had no effect at all.

2.5 Transformational leadership

I considered the construct of transformational leadership since the purpose of the study was to transform respective practices to enhance professional development. Astin and Astin (2000:8) distinguish between leadership and management by stating that “leadership is a process that is ultimately concerned with fostering change. In contrast to the notion of *management*, which suggests preservation or maintenance, *leadership* implies a process where there is movement – from wherever we are now to some future place or condition that is different”. According to Harrison (2011:45), the word *transformation* suggests that change is a central purpose of leadership. Additional to fostering change, transformational leadership also “divorces” leadership from “positional authority” (Harrison 2011:46), whereas authority is traditionally linked to management

levels. This implies that any member of an organisation, regardless of position in the hierarchy, can be a leader (Lowney 2003:15).

Northouse (2004:170) states that transformational leadership refers to “the process whereby an individual engages with others and creates a connection that raises the level of motivation and morality in both the leader and the follower”. A transformational leader can encourage individuals to develop and improve (transform) themselves and to reach their fullest potential (Northouse 2004:170; Bass 1990; Farrell & De Jager 2005:53).

Considering these definitions, Atkinson and Pilgreen (2011:47) note that a mentoring approach can inform transformational leadership. In the context of this study whole brain leadership can inform transformational mentoring. Although transformational leaders (mentors) are considered as an individual that can encourage other individuals to develop professionally (Northouse 2004:170; Bass 1990; Farrell & De Jager 2005:53), I believe that they can also develop themselves professionally. As previously mentioned, the two tenets that, according to Harrison (2011:45), promote transformational leadership (change and “divorcing leadership from positional authority”), support my point of view. Fostering change as a leader (mentor), which implies “movement” (Astin & Astin 2000:8), indicates that the leader does not want to stagnate in her own practice. Leaders should therefore “think out of their box” (Du Toit 2012:1220) and apply the Herrmann Whole brain® learning model in their practice that will enhance their professional development. A leader (mentor) that “divorces” her leadership from positional authority regards herself as a peer to her colleagues. A peer can learn from her colleagues (mentees), which enhances her own professional development; this fact supports Lowney’s (2003:15) statement that any member of an organisation can lead, regardless of place in the hierarchy.

2.6 Mentoring

There are many definitions of mentoring, all based on different contexts (Cook 2012:2). Traditionally, a mentor can be described as a senior person that provides advice, support, career assistance, encouragement, feedback on performance and coaching to a junior person (my mentee) over a period of time (Barrera, Braley & Slate 2010:62; Shrestha, May, Edirisingha, Burke & Linsey 2009:116; Johnson 2007:3, 21; Fransson 2010:379; Meyer & Fourie 2004). As the HoD of Tourism Management, subject specialist and the examiner of the module Accounting, I regard myself as a “senior person” and can therefore act as a mentor in the traditional sense. The lecturer at the

Klerksdorp campus completed her studies (B.Com. Tourism – Honours) in 2009 (she is currently enrolled for a master’s degree in Tourism at the University of the North West), and she lectured for the first time in 2010; she can therefore be regarded as a junior lecturer (mentee). It is my responsibility, as Head of Department, to ensure professional development of lecturers – in this case by means of a formally assigned mentoring relationship.

Johnson (2007:27) states that the informal setting of mentoring relationships can be more successful than formal, assigned mentorships. Even though one can argue that the relationship between my mentee and me has been formally assigned (due to my assigned responsibilities as Head of Department), an informal relationship between my mentee and me was formed in 2010 when my mentee sought advice and support with regard to the Accounting module from me. Therefore, according to definition, I can state that a “formal mentor relationship between my mentee and me was formed and with our existing “informal” relationship the challenge (whereas a mentor and mentee are strangers) of a formal assigned mentorship is of no issue”. However, from a constructivist view point I do not view myself as a traditional mentor since it would not allow opportunities for me to transform my mentoring practice in order to enhance my professional development. Smith (2007:280) states that new knowledge is constructed in the experience of peer mentoring.

In this regard I view myself as a peer mentor and mentored from a peer mentoring point of view (Du Toit 2012:1218). Peer mentoring is regarded as a crucial part of becoming an “agent of change” (Du Toit 2012:1218). De Jager (2011:28) adapted the following idea from Harrison, Dymoke and Pell (2006) who portrays the peer mentor role that she wants to fulfil: “It is someone with whom to cooperate and discuss pupils’ work, a role model for the planning, organisation and delivery of the teaching. A good listener, flexible, someone who enables reflection, creates opportunities and recognises novice teacher’s pressure points”. Her motivation for establishing a peer mentoring relationship was “to offer opportunities to the respondents for professional learning in order to acquire new understanding, skills and knowledge to transform their practice and encourage a sharing and enquiring mind-set” (De Jager 2011:28). According to Gardiner (2010:245) peer mentors indicate that peer mentoring supports their mentees’ “development as professionals who collaborate, problem solve, share resources and perspectives, and conceptualise teaching as a process of learning”.

As a professional whole brain transformational leader and learner, I considered peer mentoring in order to transform my mentoring practice. However, even though my purpose was to transform my mentoring practice, I obtained ideas from my mentee pertaining to her facilitation of whole brain learning that I adopted in my own teaching practice with regard to the Accounting module. Therefore I regard peer mentoring as an opportunity to transform both one's teaching and mentoring practices. My motivation for establishing a peer mentoring relationship was not only to offer opportunities for my mentee's professional learning, but also to construct new knowledge that allowed me to transform my practice in order to develop myself professionally. I could therefore adapt Smith's definition of mentoring (Smith 2007:277), "mentoring ... also challenges them (mentees) productively so that progress is made" to fit peer mentoring whereas it challenges both mentors and mentees productively to "make progress" by means of professional development.

The Norms and Standards for Educators (South Africa 2000) stipulates seven roles of an educator. These roles apply to a mentor, but the role of "scholar, researcher and lifelong learner" is applicable in this study to both my mentee and myself. This role states that "the educator will achieve ongoing personal, academic, occupational and professional growth through pursuing reflective study and research in their learning area, in broader professional and educational matters, and in other related fields". Bierema and Merriam (2002:212) as well as Thompson, Jeffries and Topping (2010:305) state that mentoring adds to professional growth and development.

I engaged in action research where I followed a whole brain[®] approach to facilitate my mentee's teaching by means of whole brain[®] learning in the Accounting module. During the action research cycle, which is explained in Chapter 3, a constructivist approach was followed with regard to whole brain[®] thinking. Peer mentoring was beneficial for both my mentee and me as I facilitated my mentee's professional learning and learned from my mentee's experiences (Bryant-Shanklin & Brumage 2011:45). Clutterbuck (2005:5) states that mentoring allows an opportunity for mutual learning and an effective mentor can become a "role model" for self-managed, or as I would prefer, self-regulated learning.

My mentee ensured professional growth by means of conducting action research in her practice by aligning whole brain[®] teaching and learning in the Accounting module. Critical reflection during the action research enabled my mentee and myself to construct valuable meaning that transformed our practices and enhanced our professional development. When a lecturer reflects on a process it allows him or her to implement changes for improvement (Holtzhausen 2010:4).

Greyling and Du Toit (2008:976) identify the following suggestions for mentoring from a constructivist perspective:

- Negotiate a shared vision for mentoring: the shared vision for the mentoring relationship transformed our practices by means of adapting a whole brain® approach to our respective practices.
- Select mentors who are willing to work with the meanings mentees assign to the world of work. I am passionate about facilitating by means of a whole brain® approach and wanted to share this passion with my mentee. An action research approach was adopted that enabled both parties to construct valuable meanings when reflecting on the research. I was keen to learn from my mentee in this regard.
- Create opportunities for mentors and mentees to articulate their meanings: my mentee shared her ideas of how she applied the action research steps to the applicable Accounting topics. I facilitated my mentee's professional learning by sharing ideas on a continuous basis. The steps of the ever-continuing action research cycle made provision for articulating meanings especially after reflection.
- Acknowledge the initial constructions of meaning as a bridgehead to more precise and focused meanings. My mentee applied the action research steps to all the identified Accounting themes that created numerous opportunities for constructing valuable meaning.
- Establish a relationship of trust, mutual respect and commitment. It was my responsibility to establish this relationship. I was aware of my mentee's thinking style preferences and used them to, as suggested by Greyling and Du Toit (2008:975), promote "harmony, tolerance and communication". The advantage in this case was that my mentee and I were not strangers; we communicated effectively and we respected each other equally. Cook (2012:8) states that the collaborative process and reflection are strengthened by good communication, which contributes to professional development for both a mentor and mentee.
- Record interviews for analysis. For the purpose of this study the interviews with my mentee and her students were recorded and analysed.
- Interrogate constructs. I continuously facilitated my mentee's professional learning and constructed valuable meanings.
- Allow for diversity of meanings. Since my mentee and I continuously reflected on our respective practices, we both constructed our own individual meanings.

In order to execute an effective peer mentoring relationship, I had to identify and address the challenges.

2.6.1 Challenges for the mentor relationship

One of the challenges in this mentor relationship was the distance between my mentee and me. The relationship between us relied mainly on e-mentoring, although we had face-to-face meetings. E-mentoring is defined by Bierema and Merriam (2002:214, 219) as “a computer-mediated, mutually beneficial relationship between a mentor and a protégé (mentee) which provides learning, advising, encouraging, and promoting, that is often boundaryless, egalitarian, and qualitatively different than traditional face-to-face mentoring”. Shrestha, May, Edirisingha, Burke and Linsey (2010:122) found that the benefits of e-mentoring and face-to-face mentoring are similar, but e-mentoring differs from face-to-face (or traditional mentoring) due to it being boundaryless and the unrestricted quality of the exchange (Bierema & Merriam 2002:219). It enables mentoring that crosses boundary time and the location (in this case Centurion and Klerksdorp) and a large amount of information can be shared in a short time period (Bierema & Merriam 2002:220); the mentee can at any time contact the mentor via computer-mediated communication (email, sms, WhatsApp, and social media such as Facebook) and provide constructive feedback at any time; it is therefore not necessary to make appointments in an already busy schedule to meet face-to-face regularly. The challenges of e-mentoring, however, are miscommunication, delays in relationship development since it takes time to develop trust and confidence, misinterpretation, a delay in time to develop trust and confidence, time (due to the mentor or mentee’s work and personal life demands) and technological barriers, such as computer literacy and access (Shrestha, May, Edirisingha, Burke & Linsey 2010:122; Johnson 2007; Bierema & Merriam 2002:221; Pinho, Coetzee & Schreuder 2005:21).

Thompson, Jeffries and Topping (2010:306) posit that “blended mentoring”, involving both e-mentoring and face-to-face interaction, maximises the benefits of the mentoring relationship.

Fraser (2008:20) identifies some roles of a mentor lecturer that I adopted despite the fact that some in this particular research were quite challenging

- Discuss and reflect on any situation that may occur in the context of the practice. As both my mentee and I engaged in action research, scholarly reflection occurred very often. The discussions were done via e-mail, via telephone and face-to-face (when I visited the Klerksdorp campus).

- Allow the mentee enough opportunities to explore her own thinking style and styles of facilitating learning: engaging in action research allowed my mentee to plan, act, observe, reflect and transform continuously with regard to whole brain® learning.
- Communicate with the mentee on a weekly basis. Continuous feedback was provided during the presentation of each Accounting theme.

2.6.2 Whole brain® approach to mentoring

As the mentor I followed a whole brain® approach during the mentoring process. I facilitated my mentee in order to ensure effective whole brain® development that allowed her to transform her own practice. Mentoring supported both my mentee and me to transform our practices since both gained rewards from the relationship (Johnson 2007:21).

The Herrmann Whole brain® model is discussed in 2.4; therefore this section focuses only on its application in the mentoring process. Due to the uniqueness of individual preference style one should keep in mind that the whole brain® model caters for this diversity (Scheepers, De Boer, Bothma & Du Toit 2011:77). Incorporating various thinking styles can lead to more effective learning and whole brain®-based activities can lead to both the mentor and mentee moving out of their comfort zones and exploring other ways of thinking and professional learning (Holtzhausen 2010:16).

The advantage of identifying my own and my mentee's thinking preference was that, should there have been major differences in our preferences, we would be able to avoid miscommunication. Greyling and Du Toit (2008:975) mention that being aware of one's own and others' (my mentee's in this case) thinking preferences may promote "harmony, tolerance and communication". Another advantage of knowing one's thinking style preferences is that more competencies will be acquired by the mentee if there is alignment of the mentor and the mentee's thinking style preferences; however, the opposite is also true but then both parties will be aware of the differences and will be able to deal with them effectively (De Boer & Van den Berg 2001:124). Herrmann and Herrmann-Nehdi (1995:4) note that when one's work is in alignment with one's thinking preferences, productivity and employee satisfaction will increase.

Du Toit (2013:56) notes the following for adopting whole brain® learning that are applicable to mentoring in this regard:

- Quadrant A development: the study is research-based (action research for both my mentee and me applied).
- Quadrant B development: both my mentee and I planned thoroughly and monitored our respective action research processes.
- Quadrant C development: the study focused on personal development for both my mentee and me.
- Quadrant D development: my mentee and I had to think holistically and experimented with new and innovative ideas.

Herrmann-Nehdi (2003:2) formulates key questions to be considered for each quadrant with regard to mentoring (coaching):

- *Quadrant A: What are we doing this (mentoring) for?*

The purpose of this mentoring relationship was to transform the practices of my mentee and myself. I had chosen my mentee due to her being a relatively new lecturer and she was the obvious choice since she was the person teaching the Accounting module on the Klerksdorp campus.

- *Quadrant B: How will we do this?*

My mentee and I had both set up our individual plans that we followed step-by-step in terms of the action research that was conducted. A timeline, indicating deadlines, was incorporated. My mentee provided a structured plan of how she incorporated whole brain® learning, following the action research cycle. I scheduled an appropriate time with my mentee when visiting her on the Klerksdorp campus.

- *Quadrant C: How do we build an effective relationship?*

In order to build an effective peer mentoring relationship I applied the concept of blended mentoring. We communicated via e-mail, via telephone and through face-to-face visits.

- *Quadrant D: How does this all fit into the “big picture”?*

The “big picture” was visualised as the meaning and causes of our respective transformational practices. I facilitated my mentee’s professional learning and shared ideas of how to apply whole brain® learning in the Accounting module. Since whole brain® learning caters for a diversity of thinking preferences, effective learning takes place. I visualised that my mentee would adopt whole brain® learning in all her subjects and that she would share her experiences with her peers (on the Klerksdorp campus) and might even act as a mentor facilitating her peers’ professional learning on the Klerksdorp campus or at any other HEI to develop themselves professionally. This concept is known as “community-based learning”, defined by Wenger and Snyder (2000) as “groups of people bound together by shared expertise and passion for a joint enterprise ... people in communities of practice share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problems”.

2.7 Conclusion

According to Greyling and Du Toit (2008:957) mentors “have to be open to new experiences and new constructions of meaning”. Therefore, constructivism as a theory was implemented.

An overview of the ever-changing and complex tourism industry in alignment with Tourism in an educational context (by means of evaluating the characteristics of Tourism curricula) is provided. HE institutions are important for developing students as it is not cost-effective for small firms to develop their staff (Zagonari 2009:3). However, tourism enterprises do not always recognise the importance of education because the industry is dominated by entrepreneurs that view Tourism students as “over-qualified but under-experienced” due to their uncertainty of, for example, the content and learning outcomes of Tourism curricula (Zagonari 2009:3).

A thorough explanation of Herrmann’s whole brain® model, in alignment with my mentee’s and my own practices, has been provided. Lecturers should adapt to accommodate different thinking preferences and to challenge students to develop their least preferred thinking preferences to develop their full potential (Du Toit 2012:1220). Transformational leadership can be aligned with a peer mentoring relationship as it can enhance both the mentor and mentee’s professional development.

This chapter provides the theoretical foundation for the action research design, which is discussed in the next chapter.

CHAPTER 3

RESEARCH DESIGN AND THE EMPIRICAL STUDY

3.1 Introduction

The framework of the metaphorical Herrmann whole brain® model, in alignment with action research through peer mentoring, forms the basis of this study. The whole brain® peer mentoring relationship focuses on blended mentoring as it relies on face-to-face mentoring and e-mentoring (Thompson, Jeffries & Topping 2010:306). The purpose of this study was to transform my practice and the practice of my mentee in order to enhance our professional development. Both of us engaged in action research aligned with the framework of the metaphorical Herrmann whole brain® model in our respective practices.

The action research process consisted of an action research spiral for my mentee and an interconnected action research spiral for me.

Data was gathered by means of a mixed methods approach that complements the action research design, as both qualitative and quantitative data is of equal importance.

This chapter describes the research paradigm, the action research design and mixed methods approach and provides the layout of the action research process that I followed. It also provides an analysis, interpretation and representation of the HBDI® as baseline to this study and the qualitative and quantitative data that was gathered in my mentee's and my own action research spirals.

3.2 Research paradigm

The research paradigm that I, the mentor, followed was constructivism. Constructivism represents the epistemological grounding of the study and the epistemological approach to investigating one's practice. A paradigm or worldview is chosen to shape one's research and is seen as "a basic set of beliefs that guide action" (Guba 1990:17). This worldview focuses on the subjective meanings of an individual after constructing or restructuring and reflecting on new knowledge and experiences (Creswell 2007:20; Gouws 1998:72; Bender 2001:86). This paradigm fits the concept of action research as the focus was on how my practice was transformed, how I reflected on the mentoring

process and how I constructed meaning from my mentee's practice and her students' feedback. My thoughts were subjective; the focus was on how I interpreted and constructed meaning.

For the purpose of this research I fulfilled the roles of both individual constructivist and social constructivist. As an individual constructivist, I constructed meaning derived from self-reflection – what I had learned from the mentorship relationship (Gouws 1998:72).

Social constructivism allows participants to make meaning actively of abstract concepts through concrete experiences that “involve and are influenced by social interaction” (Wright, Genier & Seaman 2010:205). As a social constructivist I constructed meaning by means of social interaction (what I had learned from my mentee and her students). A qualitative research approach was followed in this regard. The goal of qualitative research following a constructivist paradigm is to rely on the participants' view of the situation (Creswell 2007:20). I constructed meaning from situations when interacting with my mentee and with her students (Creswell 2007:21). Therefore, as researcher, I listened and made sense of what the participants were communicating (Creswell 2007:21; Gouws 1998:72).

3.3 Research design: Action research

As mentioned in Chapter 2, one of the seven roles of a lecturer that are applicable to this study is that of “scholar, researcher and lifelong learner” (South Africa 2000). Zuber-Skerritt (1992:1-2) defines action research as a “*collaborative, critical inquiry by the academics themselves (rather than educational researchers) into their own teaching practice, into problems of students learning and learning into curriculum problems*”. McNiff, Lomax and Whitehead (1996) state that “every action researcher ... engages in a form of professional development”. Action research therefore allows lecturers to be a “scholar, researcher and lifelong learner” in their practice and enhances their professional development.

In order for my mentee and me to be lifelong learners, we should continually evaluate and reflect on our own practices. A lecturer is best placed to evaluate and judge his or her own work (McNiff & Whitehead 2005:3). According to Aldridge, Fraser and Sebela (2004:246) the concept of action research allows lecturers to work towards transforming their practices by means of taking action. The lecturers question themselves about what they are doing and critically reflect on what was learned from the experience (McNiff & Whitehead 2005:3; Whitehead & McNiff 2006:21; Mills

2003:10). This transformation leads to another critical element and primary reason why action research should be conducted, namely the provision of new concepts, ideas or interpretations (Stringer 2004:3) and the generation of new personal theories, which complement individual and social constructivism (Whitehead & McNiff 2006:21; McNiff & Whitehead 2005:3; Greenwood & Levin 1998:7; Mills 2003:10).

Mills (2003), Stringer (2004), McLean (1995:67) and Sagor (2005) identify a variety of action research models and cycles that can be followed, such as Lewin's spiralling cycling process, Kemmis's representation of the action research spiral, Calhoun's action research, Wells's idealised model of the action research cycle, Stringer's action research interacting spiral, Stringer's action research sequence, McLean's action research model and Sagor's action research process consisting of four stages. Action research is basically a process of planning, acting, observing and reflecting (Zuber-Skerritt 1992:11; Hodgkinson & Maree 1998:52). Figure 3.1 (Paragraph 3.5) is a basic representation that summarises the complex action research process of both my mentee and me as the mentor as it is reflected in this study.

3.4 Mixed methods approach

The action research design was supported by a mixed methods approach. A mixed methods approach is "a procedure for collecting, analysing, and 'mixing' both quantitative and qualitative research in a single study to understand a research problem" (Creswell & Plano Clark 2007). A researcher can primarily focus on either qualitative research with quantitative research as support, or vice versa. It may also occur that both qualitative and quantitative research approaches are of equal importance in the study. For my study both qualitative and quantitative data was used to understand the innovative research idea – this type of research design is known as triangulation mixed method design (Creswell 2008:557).

Creswell (2008:46) defines quantitative research as "a type of educational research in which the researcher decides what to study; asks specific, narrow questions; collects quantifiable data from participants; analyses these numbers using statistics and conducts the inquiry in an unbiased, objective manner".

Strauss and Corbin (1990:18) point out that "the requisite skills for doing qualitative research are ... to step back and critically analyse situations, to recognise and avoid bias, to obtain valid and reliable

data, and to think abstractly.” However, Evans (2002:15) notes that reflective practice in educational research also involves creativity and therefore goes beyond these basics. Bogdan and Taylor (1975:101) are of the opinion that “research is a craft. To be a successful researcher is to be something more than a technician. You must create technique rather than slavishly follow procedures.” Qualitative research designs focus on the outlook and interpretation of participants in a subjective way (Creswell 2008:46). A case study – a qualitative research design – involves “an issue explored through one or more cases within a bounded system” (Creswell 2007:73). The issue explored in this case was specific to the Accounting module in the Tourism Management subject offered at Centurion Academy during the second study year. The most suitable type of case study applicable to my research project was, as it is referred to in literature, an intrinsic case (Creswell 2008:476). It focuses on a specific identified concern / problem / issue studied by means of a bounded case. However, I prefer using the construct “intra-reflective” case.

The thinking style preferences of the mentor, mentee and her students were determined by means of the HBDI®, which provided both quantitative and qualitative data. The data provided by Herrmann International (2006 and 2011) served as baseline data for both my mentee and me. My own thinking style preference and my mentee’s thinking style preference were applicable baseline data for my action research. My mentee’s thinking style preference and the thinking style preferences of her students were applicable to her action research. The data allowed me to understand and interpret my own and my mentee’s way of thinking and also allowed my mentee to understand her own and her students’ thinking style preferences.

The data collection methods and data analysis with regard to the quantitative and qualitative research approach are discussed next.

3.4.1 Quantitative data collection methods

The quantitative data that was collected included quantitative data derived from the Herrmann Brain Dominance Instrument® (HBDI®), the mentee’s students’ questionnaire, which was completed after each Accounting theme, and the mentee’s students’ marks.

3.4.1.1 Questionnaire: The Herrmann Brain Dominance Instrument®

Quantitative data was gathered by my mentee, her students and me who completed the questionnaire consisting of 120 questions of the Herrmann Brain Dominance Instrument® to determine our thinking style preference. This research design is an example of a non-experimental survey research. Creswell (2008:388) describes survey research designs as “procedures by which investigators administer a survey to a sample to describe the attitudes, opinions, behaviours, or characteristics of the population”.

The HBDI® (See Appendix A) provides a “valid and reliable measure on human mental preferences when applied in a professional way” (De Boer, Steyn & Du Toit 2001:187). Validity studies were conducted by Bunderson (1995) and Ho (Coffield, Moseley, Hall & Ecclestone 2004). The data of the HBDI®’s was determined and analysed by Herrmann International Africa in Pretoria via the database in the USA and my mentee’s, her students’ and my own thinking style preferences were scored individually (Voges 2005:84). It is imperative to note that the HBDI® provides qualitative data by means of an individual discussion of each individual’s personalised portfolio. This qualitative data and the quantitative scores of my mentee and her students as well as of myself, obtained from Herrmann International (2006, 2011), are discussed in paragraph 3.6.

3.4.1.2 Questionnaire: Feedback from the mentee’s students

My mentee’s students were required to complete a short student feedback questionnaire after each Accounting theme (See Appendix G). The questionnaire was constructed to determine and identify whether her students experienced specific whole brain® strategies (pertaining to each quadrant) from my mentee’s facilitation. It further determined whether her students interpreted the learning opportunities as contributing to accommodating each thinking style preference and whether the learning opportunities and learning experiences facilitated better understanding of the Accounting concepts relating to the particular Accounting theme. As the mentor and researcher I was responsible for compiling the questionnaire and to analyse the data (See Paragraph 3.10.2). The data from the questionnaires (students’ perspective) was compared to my mentee’s reflection (mentee’s perspective). The completed questionnaires were sent via courier services from Klerksdorp campus to Centurion campus.

3.4.1.3 Students' marks

At the commencement of the study the mentee's students completed formative and summative assessments. The mentee students' marks, derived from these formative and summative assessments, are analysed in paragraph 3.10.3.

3.4.2 Qualitative data collection methods

The data collection specific to qualitative research and case study research in this instance included interviews with my mentee and with her students, observations of my mentee's classroom practice, audio-visual material (video recordings of my mentee's teaching and students interacting in the classroom environment) and documents completed by myself and by my mentee.

3.4.2.1 Interviews

The two interviews with my mentee and the two interviews with her students were semi-structured, referred to in literature as "unstructured interviews". Punch (2009:148) highlights the effectiveness of this type of interview as a "powerful educational research tool" that produces "rich and valuable data". The first interview was conducted during my first visit to the Klerksdorp campus and the final interview during my second visit to the Klerksdorp campus. As with structured interviews, the questions were pre-established and open-ended, but differed in the sense that there were possibilities for variation in response (Punch 2009:146). Interviews allow the interviewer to use probes to elicit more information or to clear up a vague response (Creswell 2008:229; Voges 2005:74).

The two interviews with my mentee (See Appendix E) and the first interview with my mentee's students were one-on-one interviews (See Appendix F). Creswell (2008:226) regards a one-on-one interview as the most time-consuming and costly approach but notes that it is ideal when interviewing participants who are not shy to share their ideas. Each participant was required to interpret his / her HBDI® profile individually during the one-on-one interview.

The second interview that was conducted with my mentee's students was a group interview (See Appendix L). Fontana and Frey (2008:128) regard group interviews as relatively inexpensive compared to one-on-one interviews and notes that they can "produce rich data that are cumulative

and elaborative”. All the mentee’s students participated actively during the group interview and I was able to collect shared understanding from the group members and from specific individuals.

3.4.2.2 Observations

Creswell (2008:221) describes observations as “the process of gathering open-ended, first-hand information by observing people and places at a research site. During each of my two visits to the Klerksdorp campus I observed my mentee’s learning opportunity to determine how she used the principles of whole brain® learning during learning after planning how she wanted to incorporate the principles. The first observation of the learning opportunity was when the second semester and Accounting Theme 3 commenced, and the second observation of the learning opportunity was a week prior to the final examination (revision of Accounting Themes 1, 2 and 3 was done). During these observations I recorded the data by means of descriptive and reflective field notes. Descriptive field notes describe the event, the tasks and people (Creswell 2008:225) and reflective field notes record personal thoughts with regard to the learning opportunity (Creswell 2008:225). These two learning opportunities were video-recorded and I was able to compare and confirm my field notes when viewing the video recordings.

3.4.2.3 Audio-visual material

The audio-visual material in this regard consisted of video recordings of two of my mentee’s learning opportunities, which, according to Creswell (2008:232), help a researcher “to understand the central phenomenon under study”. I examined the video recordings of the learning opportunities; snapshots taken of the learning opportunities are included in Paragraphs 3.9.3.2 and 3.14.2.1.

3.4.2.4 Documents

Creswell (2008:230) indicates that documents “consist of public and private records that qualitative researchers obtain about a site or participants in a study”. My mentee and I both kept private documents during the study. The main advantage of documents is that participants have given attentive consideration to them (Creswell 2008:231) and they contain the words and language of the participant (Creswell 2008:231).

The personal documents in this regard included my reflective journal, my mentee's reflective journal, e-mails, my mentee's recording of the action research steps (of each Accounting theme) and documents that I prepared for my mentee. Public documents included examples of assessments and assignments related to each Accounting theme compiled by my mentee.

3.4.3 Data analysis

The advantage of analysing my own data, according to Litosseliti (2003:85) is that I can establish links between my research questions and the data gathered. Data analysis enables a researcher to find patterns, themes and trends that relate to the research questions (Cohen, Manion & Morrison 2000:147). In mixed methods data analysis qualitative data can be linked to quantitative data while quantitative data can be linked to qualitative data (Johnson & Onwuegbuzie 2004:22).

Data derived from the HBDI[®], student questionnaires and students' marks was analysed statistically. For qualitative data, data from the interviews, observations, video-recording, and various personal documents was analysed. Text analysis in this instance included text obtained from the personal documents, such as e-mails (between my mentee and me) and text from both my mentee's and my own respective reflective journals.

3.4.4 Validity and reliability

Validation for qualitative research assesses the "accuracy" of findings ("emphasising a process") and does not verify data (Creswell 2007:207). Gaining the trust of all participants was imperative; in this case the trust from both my mentee and her students was established. Onwuegbuzie and Leech (2007:238) provide prolonged engagement, triangulation and member-checking as methods to increase or legitimise validity in qualitative research.

Prolonged engagement with my mentee and me and with my mentee and her students was inevitable due to our work environment and situation.

Triangulation is a method described as a situation that is investigated by using a number of different methods, and not a single resource (Zuber-Skerritt 1996:16; Mills 2003:52). In this study the methods used included observations, audio-visual material, interviews and personal documents.

Member checking involved confirmation with my mentee and her students with regard to the interpretation of the findings, mainly from observations and interviews.

3.5 Action research process

As alluded to in Chapter 1, in 2006, when I completed the Post-Graduate Certificate in Higher Education (PGCHE) course that focuses on the professional development of a lecturer, I conducted action research where the study focused on Accounting and determined how a whole brain® approach towards facilitating learning transformed my practice (Scheepers 2006). I identified the research questions for this study based on the original action research project during the PGCHE course.

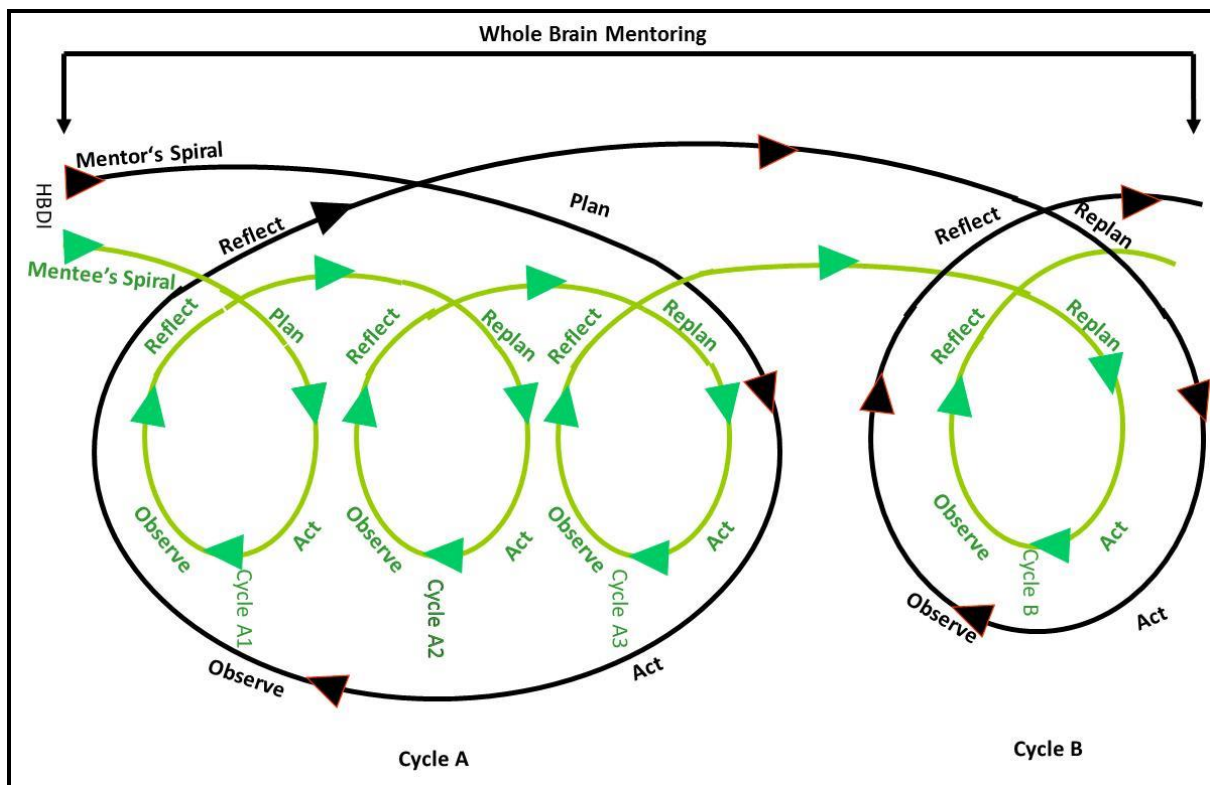


Figure 3.1: Action research presentation of the mentor and the mentee (adapted from Hodginson & Maree 1998, and Du Toit 2009)

A typical feature of this action research process was that it operated in cycles (McNiff, Lomax & Whitehead 1996:22). The action research cycles (Figure 3.1) commenced with the completion of the HBDI®, which served as baseline data essential for the action research spirals. Two action research spirals were identified – a spiral for my practice (as the mentor) and a spiral for my mentee’s

practice. From my spiral (in black in Figure 3.1) I identified two cycles (referred to as action research cycle A and action research cycle B) during the mentoring. Both cycles included separate action research cycles that were completed by my mentee (in green in Figure 3.1). My mentee's first three action research cycles (A1, A2 and A3) overlapped with my first action research cycle, and our final action research cycles also overlapped with one another. The actual phases of the action research are further discussed in this chapter.

In this project I acted as a “whole brain®” mentor who facilitated my mentee's professional development by means of adapting a whole brain® approach to her Accounting class. An action research design in this regard was the most appropriate and best design to answer the primary research question and was adopted by both my mentee and me. McNiff, Lomax and Whitehead (1996:30) state that even-though the focus of action research is on studying oneself, it involves other people and is done “with and for other people”, underpinning social constructivism as the research paradigm for this study.

3.6 Herrmann Brain Dominance Instrument® as baseline data

Herrmann's whole brain® model as discussed in Chapter 2 caters for and develops diverse thinking styles and makes learning more meaningful for students (Oosthuizen 2001:78). I regard the model as meaningful for a mentor, mentee and facilitator (or lecturer).

Identifying my mentee's and my own thinking style preference allowed me as the mentor to assist and facilitate my mentee in terms of whole brain® professional learning and how she could effectively adapt her methods of facilitating and assessing learning in order to accommodate all the thinking preferences. This also allowed me to plan and maintain the long distance mentorship relationship by means of applying a whole brain® approach.

Identifying her own and her students' thinking style preferences allowed my mentee as educator the opportunity to transform her practice since applying a whole brain® approach to facilitate and assess learning provides for diversity in the classroom environment – her students and their learning became the main focus (a humanistic approach) (De Boer, Steyn & Du Toit 2001:185; West & Saunders 2006:718). Gathering data with regard to her students' thinking style preferences allowed my mentee the opportunity and challenge to shift the focus from her as educator to them as her students.

In order to plan an effective whole brain® mentor relationship from the mentor's point of view and plan and construct diverse ideas and teaching strategies from my mentee's point of view, the profiles according to the HBDI® were identified.

The HBDI® survey was completed online prior to the commencement of the second semester and the commencement of three of the Accounting themes. The purpose was to:

- create awareness of the thinking style preferences of both the mentor and mentee;
- create awareness of the thinking style preferences of my mentee's students;
- challenge my mentee to construct ideas and teaching strategies (which included assignments) that cater for and accommodate the diverse thinking style preferences of all students;
- create awareness of thinking style preferences in each student and excitement that will lead to a positive learning environment.

The mentor, mentee and each student received a personal profile information booklet (Herrmann International 2006 and 2011) that provided a detailed explanation and information on their individual profile.

3.6.1 Quantitative and qualitative analysis of the HBDI®: Mentor and mentee

The quantitative and qualitative analysis includes the visual and discussion of the individual profiles for my mentee and me (obtained from Herrmann International 2006 and 2011).

3.6.1.1 The mentor's profile

My profile, represented in Figure 3.2, is a singular dominant profile with the most preferred quadrant being the Lower Right Quadrant C. With this profile I prefer the interpersonal, emotional, musical, and spiritual aspects of this quadrant. The three remaining quadrants are functional, yet distinctly secondary to the Lower Right characteristics. I would thus be quite visibly feeling and people-oriented, but still well balanced in the logical, analytical, tactual thinking styles of Upper Left A, and the organised, administrative and controlled qualities of Lower Left B, and finally the creative, synthesising, holistic modes of processing in Upper Right D (Herrmann International 2009:21).

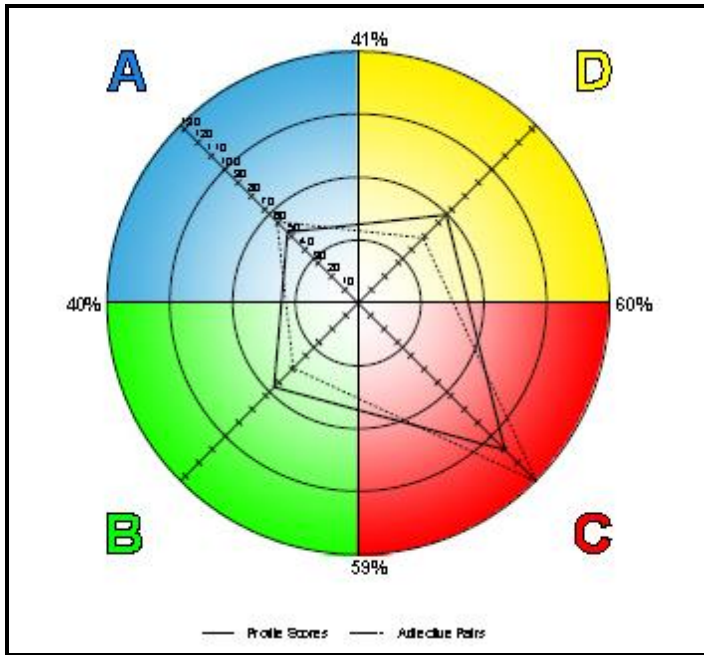


Figure 3.2: HBDI® profile of mentor (Herrmann International 2006)

The most comfortable communication approaches typical to this profile include personal touch and informality, eye-to-eye contact, sensing how others react, considering the needs of the listener and group discussion but I may overlook data and facts, written schedule and planning and visuals (Herrmann International 2009:21).

The most natural problem solving strategies would include hands-on approaches, team processes, intuition (feeling) and brainstorming with others, but I may not consider observing strict procedures, logic and visual thinking (Herrmann 2009:21).

Typical questions that will be asked when making decisions (related to this profile) include, “Who else is involved?”, “How will I affect others?”, and “How does this situation make me feel?” but I may overlook researching the facts and following procedures (Herrmann 2009:21).

The descriptors in my most preferred thinking style, Quadrant C that I selected are *musical, emotional, spiritual* and *intuitive*, with *reader* representing my *key descriptor* – the most descriptive of me. These descriptors represent a general overview of my mental preferences in day-to-day life. Work elements that I strongly relate to in this quadrant include *teaching* and *writing*. These elements reflect my mental preferences at work. My next most preferred thinking style (by quite a margin) is the D quadrant where I selected *intuitive* as descriptive of me. I identified *integration* as

work element related to Quadrant D. My next most preferred is the B quadrant. In this quadrant I selected *conservative* with *reader* as the one most descriptive of me. I identified *organisation* as work element. My least preferred quadrant is the A quadrant. In this quadrant I selected *logical* and *mathematical* as characteristic of me (Herrmann International 2006).

The distribution of my responses (See Table 3.1) to the questions related to the adjective pair is not perfectly aligned with my profile, but is not radically out of alignment either. Whereas my profile of the quadrants (in descending order of preference) is identified as C > D > B > A, the responses to the questions with regard to the adjective pairs show that my preference (in descending order of preference) is C > A > D and B. This suggests that there may be some shifts in my thinking style when under pressure, perhaps with a less-preferred quadrant becoming more dominant or a generally preferred one receding into the background. Therefore, when under pressure, the less-preferred Quadrant A becomes more dominant (Herrmann International 2006).

3.6.1.2 The mentee's profile

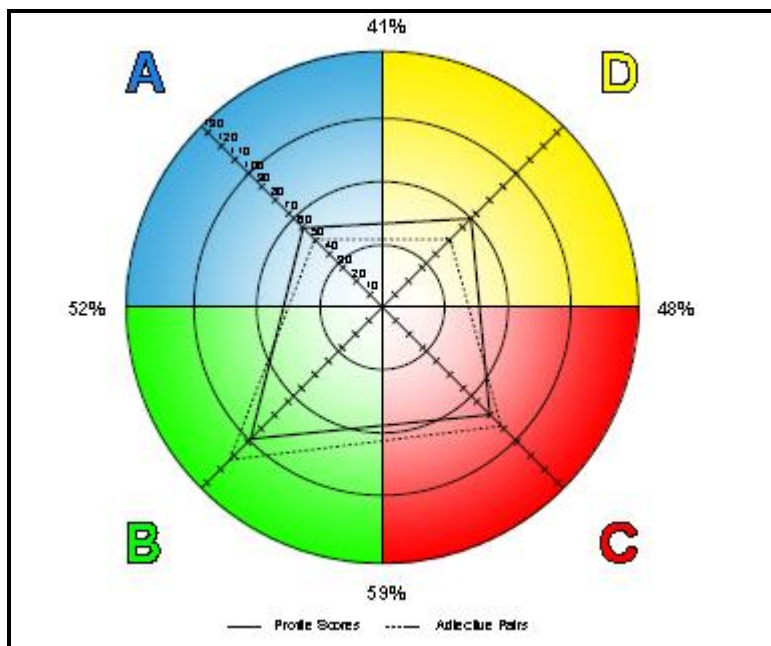


Figure 3.3: HBDI® profile of mentee (Herrmann International 2011)

My mentee's profile (Figure 3.3) represents a double dominant profile with the two primaries in the Lower Left B and Lower Right C quadrants. It is a double primary in the limbic area. The profile is characterised by very strong preferences in conservative thinking and controlled behaviour with a

desire for organisation and structure as well as detail and accuracy from the Lower Left B quadrant. Individuals with this profile tend to worry about details. The primary in the Lower Right C would equally show itself by emotional and interpersonal preferences, an interest in music, and a sense of spirituality. It would also show in an intuitive *feelings* sense of this person. The two limbic primaries could represent an important duality for the individual to resolve within him- or herself. The opposing qualities of control and structure, or *form* – and the emotional and interpersonal *feelings* – can cause internal conflict. The clear secondary preferences of the cerebral modes, both Upper Left A and Upper Right D, are also characteristic of this profile, with logical and analytical in the Upper Left A quadrant and holistic and creative thinking of Upper Right D quadrant (Herrmann International 2011).

The most comfortable communication approaches of my mentee may include a step-by-step unfolding of the topic, practical answers to *who, what, when, where* and *how*, understanding how others react, personal touch / sensitive to others but may overlook data and facts, technical accuracy, visuals and an overview (Herrmann International 2009:27).

The most natural problem solving strategies would include a step-by-step method, time line principles, intuitive feelings and team processes but may not consider defining the problem, critical analysis, visualisation and incubation (Herrmann International 2009:27).

When taking a decision, typical to her profile, my mentee may ask: “What is the appropriate sequence?” and “How does my decision affect others?” but may overlook taking risks and gathering facts (Herrmann International 2009:27).

My mentee’s preferences (in descending order) are identified as B > C > D > A, and the responses to the questions with regard to the adjective pairs (See Table 3.1) identify her preference (in descending order) as B > C > D and A. My mentee’s quadrant scores and adjective pairs were in the same order of preference; her adjective pairs were not perfectly in alignment with her profile, but it was not radically out of alignment either (Herrmann International 2011).

3.6.1.3 The HBDI® paired profile of mentor and mentee

The paired composite profile (Figure 3.4) provides an overlay of our HBDI® profile on the profile grid.

Composite of selected profiles: 2 persons

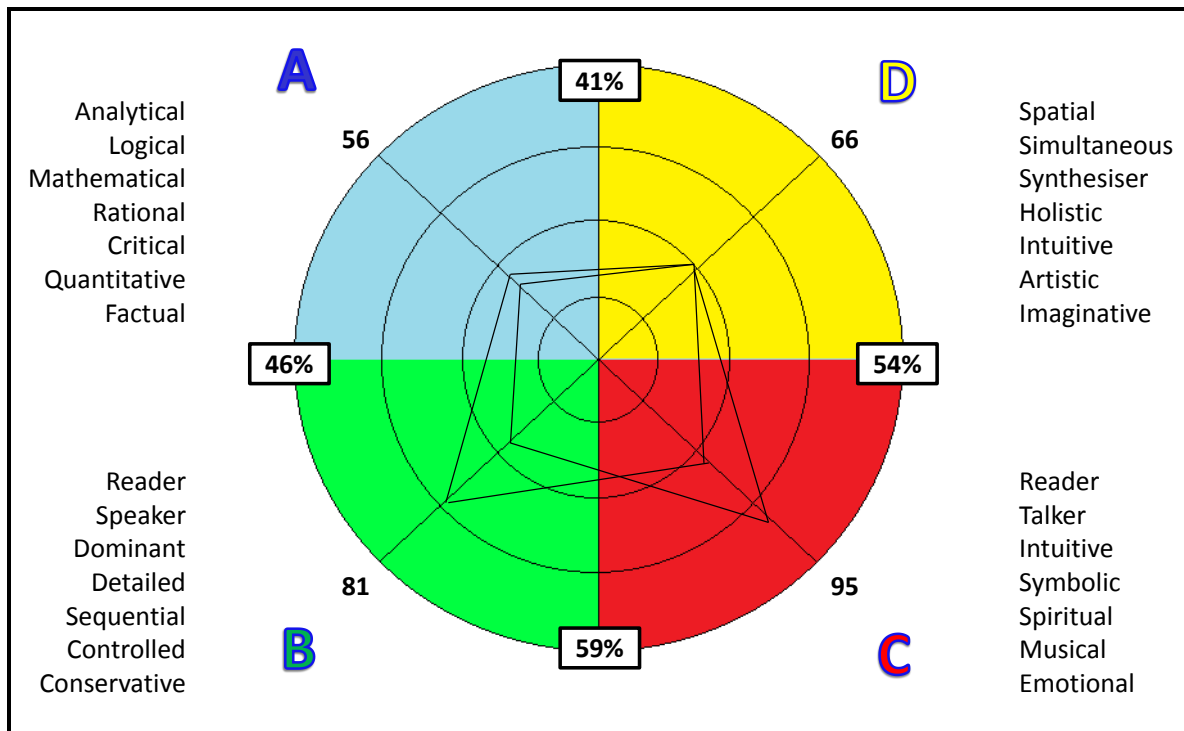


Figure 3.4 Paired composite profile: Mentor and mentee

The paired composite profile shows a higher preference for the lower limbic mode (59%) and right mode (54%). The lower mode combines the B and C quadrants and the right mode combines the C and D quadrants.. The least preferred mode is the upper mode (41%), combining the A and D quadrants.

3.6.1.4 HBDI® scores of the mentor and mentee

The HBDI® scores of the mentor and my mentee are analysed in Table 3.1.

Table 3.1: Data summary of the HBDI® scores of the mentor and the mentee

Quadrant:	A	B	C	D
Preference code:				
Mentor	2	2	1	2
Mentee	2	1	1	2
Mean	2	2	1	2
Adjective pairs:				
Mentor	5	4	11	4
Mentee	4	9	7	4
Mean	5	7	9	4
Profile score:				

Mentor	53	63	110	66
Mentee	59	98	80	66
Mean	56	81	95	66
Key descriptors:				
Mentor	Mathematical Logical	Conservative Reader*	Emotional Musical Spiritual Intuitive Reader*	Intuitive
Mentee	Critical Logical*	Conservative Controlled Speaker	Symbolic Intuitive Talker	Imaginative Intuitive
Work elements (only according to highest score):				
Mentor	None	Organisation	None	None
Mentee	None	Organisation Planning Administrative	Teaching	None

* Most descriptive

The profile scores are explained in Chapter 2, with code 1 being the primary code (indicate a strong preference, code 2 being the secondary code, indicating thinking modes that an individual uses if necessary) and code 3 being the tertiary code (avoidance of any thinking in that particular quadrant). In this case my mentee and I both had secondary preferences for Quadrants A, C and D. My mentee's primary preference was identified as Quadrant B, whereas I showed comfort in that quadrant, but it was not seen as a primary preferred thinking mode.

3.6.2 Quantitative and qualitative analysis of the HBDI®: Mentee's students

The quantitative and qualitative analysis includes the visual and discussion of the individual profiles for each of my mentee's students obtained from Herrmann International 2011.

3.6.2.1 Student's profile: Male 1

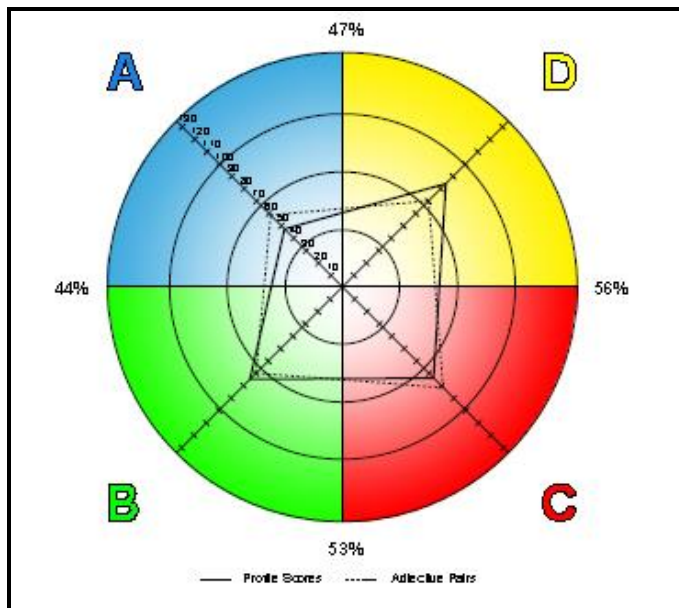


Figure 3.5: HBDI® profile of student: Male 1 (Herrmann International 2011)

Students Male 1, Male 2, Male 3 and Female 1, whose profiles are respectively identified in Figures 3.5, 3.6, 3.7 and 3.8, each have a triple dominant profile with two primaries in the right mode, Lower Right C and Upper Right D quadrants and the third in Lower Left B. This profile (2111) is characterised by its multi-dominant and generalised nature, fairly balanced amount of understanding and ease of using the three primary quadrants. Preferred processing modes are creative and holistic (Upper Right D), interpersonal and feeling (Lower Right C), planning and organising (Lower Left B). The Upper Left Quadrant A is least preferred, but still the respondents are typically quite functional in their use of the logical and analytical aspects of this quadrant (Herrmann International 2009:33).

The most comfortable communication approaches may include written communication beforehand, providing an overview, idea chunks, involving others and personal touch / sensitive to others but they may overlook data, facts and technical accuracy (Herrmann International 2009:33).

The most natural problem solving strategies include visualisation, brainstorming, intuition, building on ideas of others and implementation aspects but they may not consider research, logic and problem definition (Herrmann International 2009:33).

When making decisions, students with this profile may ask, “Have I seen all the hidden possibilities?”, “Can I form a plan to make this work?” and “How will others be affected?” but they may overlook gathering the facts and details (Herrmann International 2009:33).

The thinking style quadrant that this student (Male 1) prefers most is the D quadrant. He selected *artistic* as descriptive of him, with *imaginative* representing his *key descriptor* – the one most descriptive of him. These descriptors represent a general overview of his mental preferences in day-to-day life. Work elements that he strongly relates to in this quadrant include *creative* and *innovating*. These elements reflect his mental preferences at work. His next preferred quadrant is B. In this thinking style he selected *detailed*, *controlled* and *dominant* as descriptive of him. The work element that he identified is planning. His next most preferred is the C quadrant where he selected *musical* and *emotional* as descriptive of him. Work elements that he identified include *writing*, *expressing* and *interpersonal*. His least preferred quadrant is the A quadrant where he selected *critical* as characteristic of him (Herrmann International 2011).

The distribution of his responses (See Table 3.2) to the questions related to the adjective pair is not perfectly aligned with his profile, but is not radically out of alignment either. This suggests that there may be some shifts in his thinking style when under pressure, perhaps with a less-preferred quadrant becoming more dominant or a generally preferred one receding into the background (Herrmann International 2011).

3.6.2.2 Student’s profile: Male 2

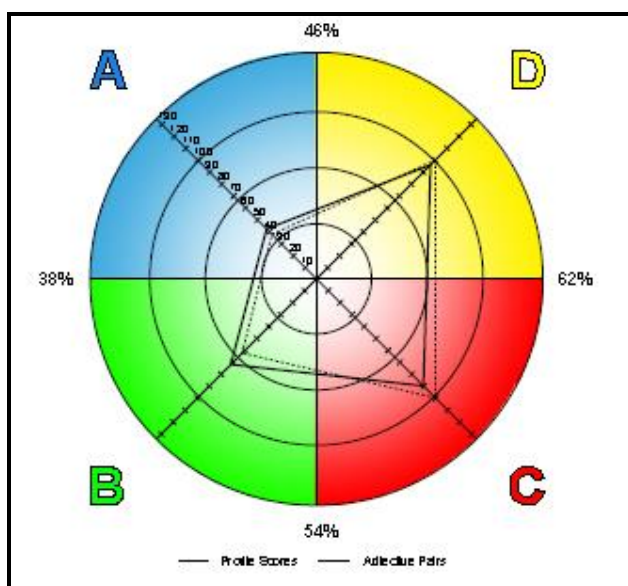


Figure 3.6: HBDI® profile of student: Male 2 (Herrmann International 2011)

The triple dominant profile of this student is explained in 3.6.2.1. The thinking style quadrant, according to Figure 3.6, which this student most prefers, is the D quadrant. Descriptors in this thinking style that he selected are *imaginative*, *spatial* and *intuitive*, with *artistic* representing his preference in day-to-day life. Work elements that he strongly relates to in this quadrant include *innovating*, which represents his mental preference at work. By only a slight margin, his next most preferred is the C quadrant. In this thinking style he selected *musical*, *talker* and *intuitive* as descriptive of him. Work elements that he identified include *teaching*, *expressing* and *interpersonal*. His next most preferred is the B quadrant. In this quadrant he selected *sequential* and *speaker* as descriptive of him. Work elements that he identified include *organisation*, *administrative* and *implementation*. His least preferred quadrant is the A quadrant. In this quadrant he selected *factual* as characteristic of him (Herrmann International 2011).

The distribution of his responses (See Table 3.2) to the questions related to the adjective pairs is very consistent with his profile. This suggests that his thinking style, when under pressure, will be very consistent with his general approach to the world (Herrmann International 2011).

3.6.2.3 Student's profile: Male 3

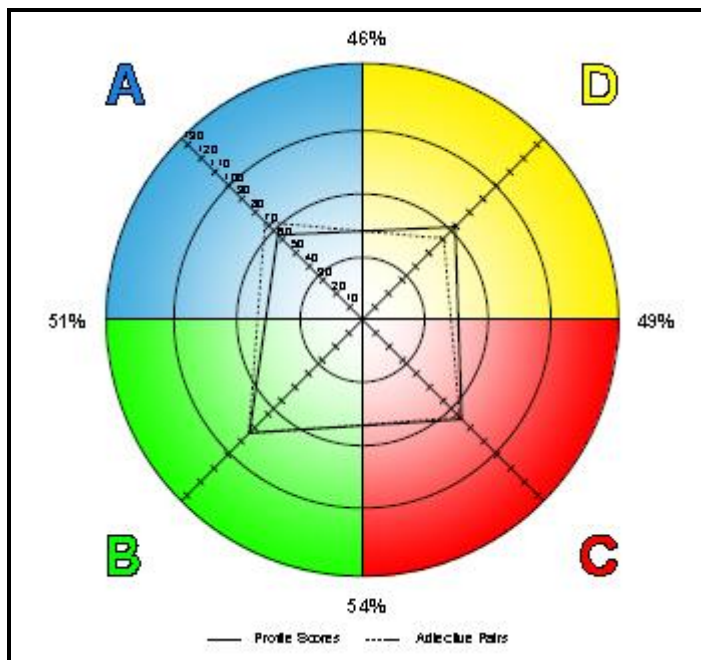


Figure 3.7: HBIDI® profile of student: Male 3 (Herrmann International 2011)

The triple dominant profile of this student is explained in 3.6.2.1. The thinking style quadrant that he most prefers is the B quadrant. Descriptors in this thinking style that he selected are *speaker*, *detailed* and *dominant*. These descriptors represent a general overview of his mental preferences in day-to-day life. Work elements that he strongly relates to in this quadrant include *implementation*. His next most preferred is the C quadrant where he selected *talker* and *symbolic* as descriptive of him. Work elements that he identified include *teaching*, *expressing* and *interpersonal*. In his next most preferred thinking style, Quadrant D, he selected ‘synthesiser’ and *holistic* as descriptive of him. Work elements that he selected include *integration* and *innovating*. His least preferred quadrant is A, where he selected *logical* as most descriptive of him (Herrmann International 2011).

The distribution of his responses (See Table 3.2) to the questions related to the adjective pairs is very consistent with his profile. This suggests that his thinking style, when under pressure, will be very consistent with his general approach to the world (Herrmann International 2011).

3.6.2.4 Student’s profile: Female 1

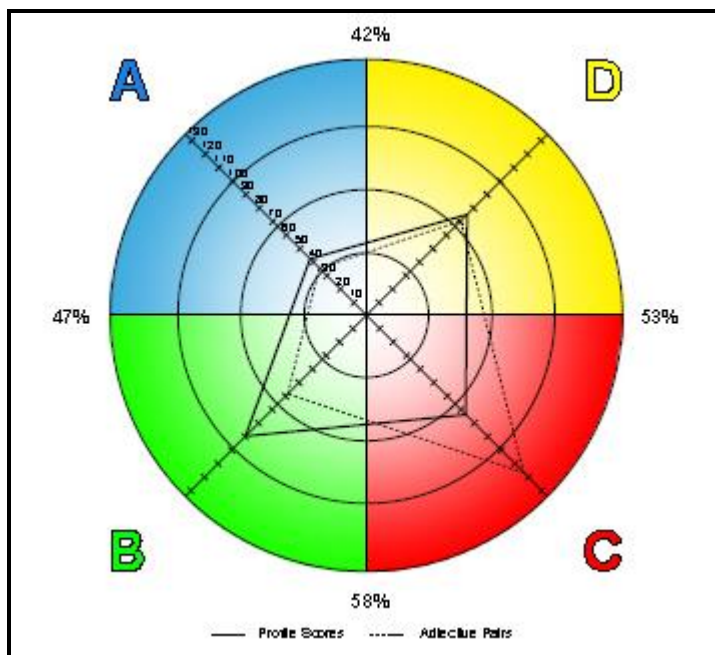


Figure 3.8: HBDI® profile of student: Female 1 (Herrmann International 2011)

The triple dominant profile of this student is explained in 3.6.2.1. The thinking style quadrant that she most prefers is the B quadrant. Descriptors in this thinking style that she selected are *detailed*, *controlled* and *dominant*, with *speaker* representing her key descriptor (most descriptive of her).

These descriptors represent a general overview of her mental preferences in day-to-day-life. Work elements that she strongly relates to in this quadrant include *planning* and *implementation*. These elements reflect her mental preferences at work. By only a slight margin, her next most preferred is the D quadrant. In this thinking style she selected *imaginative* and *holistic* as descriptive of her. Work elements that she identified include *creative* and *innovating*. Her next most preferred is the C quadrant, where she selected *emotional*, with *talker* representing the one most descriptive of her. Work elements that she identified include *writing*, *expressing* and *interpersonal*. Her least preferred quadrant is the A quadrant. In this quadrant she selected *rational* as characteristic of her (Herrmann International 2011).

The distribution of her responses (See Table 3.2) to the adjective pairs is noticeably different from her profile. This is neither a good nor bad quality, but it suggests that she may respond quite differently when under pressure than at other times. Some people with this characteristic find that people see them more like the adjective pair distribution than the profile (Herrmann International 2011).

3.6.2.5 Student's profile: Female 2

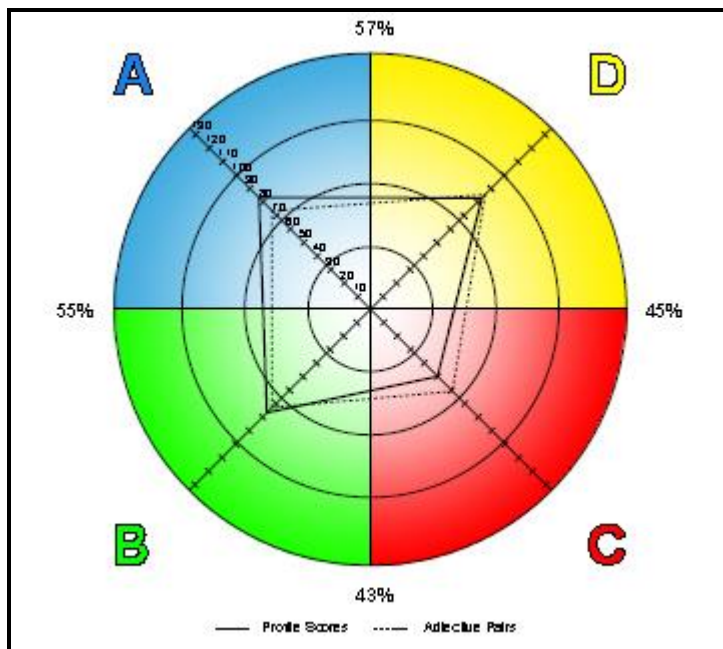


Figure 3.9: HBDI® profile of student: Female 2 (Herrmann International 2011)

This student's triple dominant profile, represented in Figure 3.9, is a triple dominant profile with two primaries in the Left mode, both Upper Left A and Lower Left B and the third primary in the Upper Right D quadrant. The secondary, or less preferred mode, occurs in the Lower Right C quadrant – the most interpersonal, spiritual and emotional mode. This profile is characterised by its multi-dominance, yet in a relative sense, it lacks a level of “personal touch” that would be present if the Lower Right C quadrant was also a primary (Herrmann International 2009:32).

The most comfortable communication approaches may include brief, clear and precise information, well-articulated ideas presented in a logical format, step-by-step unfolding of the topic, providing an overview and using visuals. Communication approaches that may be overlooked include eye-to-eye contact, the personal touch and informality (Herrmann International 2009:32).

The most natural problem solving strategies include re-engineering, factual analysis, incubation, a step-by-step process, time lines and modelling. Team processes and feelings may, however, not be considered as problem solving strategies (Herrmann International 2009:32).

In order to make decisions, this student may ask, “Do I have all the facts?”, “What’s the big picture?” and, “Will I be in control?” Asking for others’ opinions and impact on others may be overlooked (Herrmann International 2009:32).

The thinking style quadrants that she most prefers are an equal preference for Quadrants A and D. Descriptors that she selected relating to Quadrant A are *critical*, *rational* and *factual* with *logical* representing the one most descriptive of her. Work elements that she strongly relates to in Quadrant A include *analytical* and *problem solving*. In the D quadrant she selected *holistic* and *simultaneous* as descriptive of her. Work elements that she identified include *integration*. Her next most preferred is the B quadrant. In this quadrant she selected *detailed* as descriptive of her. Work elements that she identified include *planning*, *administrative* and *implementation*. Her least preferred quadrant is the C quadrant. In this quadrant she selected *musical* as characteristic of her (Herrmann International 2011).

The distribution of her responses (See Table 3.2) to the questions related to the adjective pair is not perfectly aligned with her profile, but is not radically out of alignment either. This suggests that there may be some shifts in her thinking style when under pressure, perhaps with a less-preferred

quadrant becoming more dominant or a generally preferred one receding into the background (Herrmann International 2011).

3.6.2.6 Student’s profile: Female 3

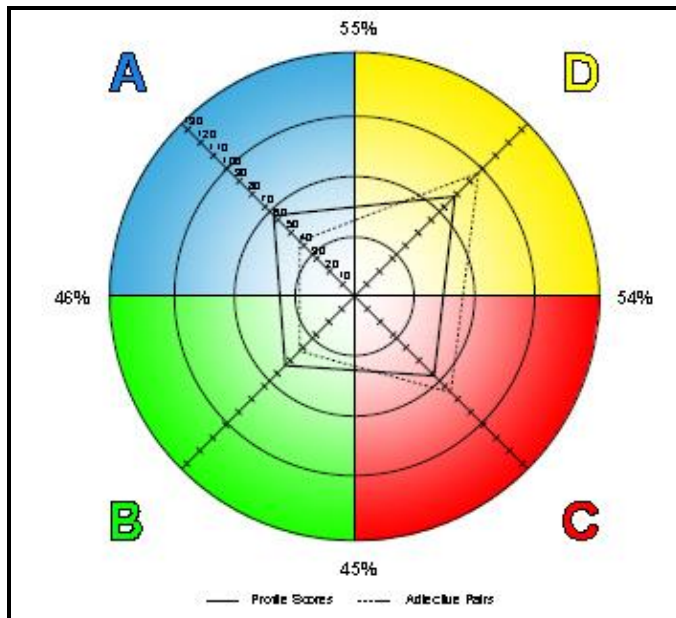


Figure 3.10: HBDI® profile of student: Female 3 (Herrmann International 2011)

This single dominant profile (Figure 3.10) prefers the Upper Right D quadrant. Characteristics associated with this quadrant include creative, imaginative, holistic and integrative processing. Synthesising would likely be the most preferred thinking style. The three remaining quadrants are functional, yet distinctly secondary. This permits the person to be quite visibly imaginative, intuitive, experimental and innovative – yet situationally functional and fairly well-balanced in terms of the logical, analytical, factual modes of thinking from the Upper Left A quadrant; organised, administrative, and controlled in terms of the Lower Left B quadrant; and finally, interpersonal and emotional from the Lower Right C quadrant (Herrmann International 2009:21).

The most comfortable communication approaches may include providing an overview, idea chunks, visuals and connecting to the “big picture”. She may overlook data and facts, written schedule and plan and the personal touch (Herrmann International 2009:21).

The most natural problem solving strategies would include visualisation, free-flow brainstorming, meditation, sketching or modelling and intuition but she may not consider observing strict procedures, logic and team processes (Herrmann International 2009:21).

To make a decision, this student may ask, “Do I see all the hidden possibilities?”, “How can I use my imagination?” and “What is the ‘big picture’ or context?” She may overlook following procedures and gathering the facts or details (Herrmann International 2009:21).

The thinking style she most prefers is the D quadrant. Descriptors in this thinking style that she selected are *spatial* and *holistic*. These descriptors represent a general overview of her mental preferences in day-to-day life. Work elements that she strongly relates to in this quadrant include *integration* and *conceptualising*. These elements reflect her mental preferences at work. By only a slight margin, her next most preferred is the A quadrant. In this thinking style she selected *logical*, *critical* and *quantitative* as descriptive of her. Work elements that she identified include *problem solving* and *financial*. Her next most preferred is the C quadrant with *emotional* representing the one most descriptive of her. Work elements that she identified include *expressing* and *interpersonal*. Her least preferred quadrant is the B quadrant. In this quadrant she selected *speaker* and *controlled* as characteristic of her (Herrmann International 2011).

The distribution of her responses (See Table 3.2) to the questions related to the adjective pair is not perfectly aligned with her profile, but is not radically out of alignment either. This suggests that there may be some shifts in her thinking style when under pressure, perhaps with a less-preferred quadrant becoming more dominant or a generally preferred one receding into the background (Herrmann International 2011).

3.6.2.7 Student’s profile: Female 4

The profile of this student (presented in Figure 3.11) features two primaries in the right mode quadrants C and D, and two secondaries in the left mode quadrants A and B.

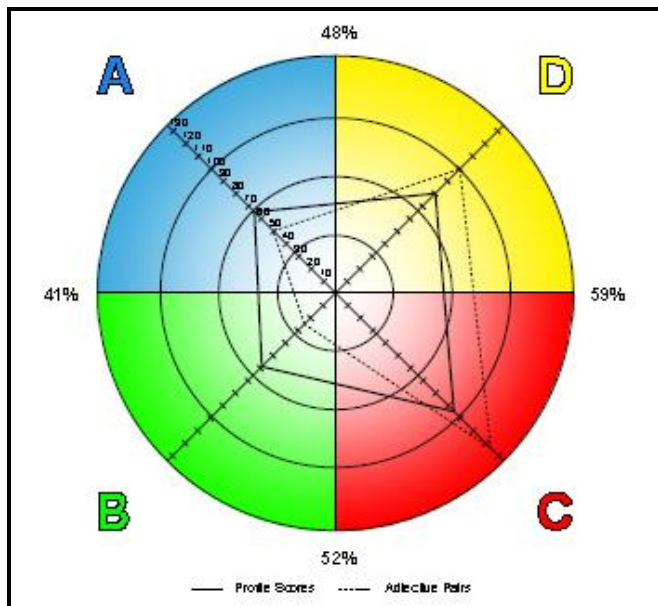


Figure 3.11: HBDI® profile of student: Female 4 (Herrmann International 2011)

Typical characteristics for this profile include the ability to be creative, holistic and synthesising in the Upper Right D quadrant and interpersonal, emotional and spiritual in the Lower Right C quadrant. The Left mode secondaries with logical, analytical and mathematical thinking styles from Upper Left A and organisation, planning and structure from Lower Left B, would be functional, yet clearly secondary to the preferred right modes of thinking (Herrmann International 2009:24).

The most comfortable communication approaches may include providing an overview, idea chunks, involving others and personal touch / sensitive to others but may overlook data and facts, written schedule and plan, being brief and technical accuracy (Herrmann International 2009:24).

The most natural problem solving strategies include visualisation, free-flow brain storming, intuition, team processes, building on ideas of others and sketching but may not consider observing strict procedures, problem definition, idea evaluation and logic (Herrmann International 2009:24).

To make a decision, one with this profile may ask, “Have I seen all the hidden possibilities?”, “How can I use my imagination?” and “How does my decision affect others?” but may overlook following procedures and gathering facts and details (Herrmann International 2009:24).

The thinking style quadrant she most prefers is the C quadrant. Descriptors in this thinking style that she selected are *musical* and *talker*, with *emotional* as the one most descriptive of her. These

descriptors represent a general overview of her mental preferences in day-to-day life. Work elements that strongly relate to this quadrant include *interpersonal*. Work elements reflect her mental preferences at work. By only a slight margin her next most preferred is the D quadrant. In this thinking style she selected *imaginative* and *artistic* as descriptive of her. Work elements that she identified include *conceptualising*, *creative* and *innovating*. Her next most preferred is the A quadrant. In this quadrant she selected *logical*, *rational* and *quantitative* as descriptive of her. Work elements she identified include *technical*, *problem solving* and *financial*. Her least preferred quadrant is the B quadrant. In this quadrant she selected *speaker* as characteristic of her (Herrmann International 2011).

The distribution of her responses (See Table 3.2) to the questions related to the adjective pair is not perfectly aligned with her profile, but is not radically out of alignment either. This suggests that there may be some shifts in her thinking style when under pressure, perhaps with a less-preferred quadrant becoming more dominant or a generally preferred one receding into the background (Herrmann International 2011).

3.6.2.8 The HBDI® group profile of the mentee’s students

The paired composite profile (Figure 3.12) provides an overlay of my mentee’s students’ HBDI® profile on the profile grid.

Composite of selected profiles : 7 persons

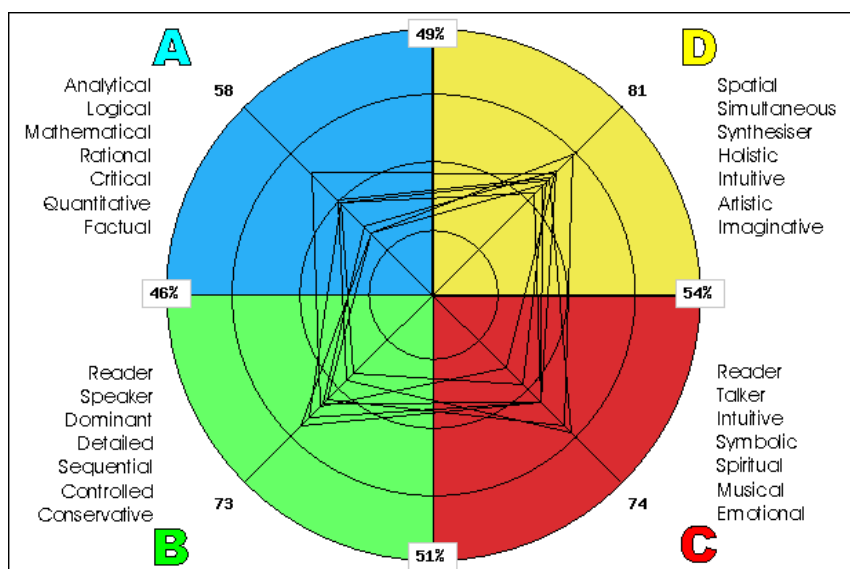


Figure 3.12: Group composite profile: Mentee’s students

The composite profile (Figure 3.12) shows a higher preference for the right mode (54%). The right mode, combining the C and D quadrants, metaphorically presents the right halves of the brain's cerebral cortex and the limbic system. The least preferred mode is the left mode (46%), combining the A and B quadrants that metaphorically present the left halves of the brain's cerebral cortex and the limbic system.

3.6.2.9 HBDI® scores of the mentee's students

Table 3.2: Data summary of the HBDI® scores of the mentee's students

Quadrant:	A	B	C	D
Preference code:				
Male 1	2	1	1	1
Male 2	2	1	1	1
Male 3	2	1	1	1
Female 1	2	1	1	1
Female 2	1	1	2	1
Female 3	2	2	2	1
Female 4	2	2	1	1
Mean	2	1	1	1
Adjective pairs:				
Male 1	5	6	7	6
Male 2	3	5	8	8
Male 3	6	7	6	5
Female 1	3	5	10	6
Female 2	6	6	5	7
Female 3	4	4	7	9
Female 4	4	2	10	8
Mean	4	5	8	7
Profile score:				
Male 1	47	75	74	84
Male 2	42	72	90	96
Male 3	63	84	74	69
Female 1	42	90	74	75
Female 2	83	77	50	83
Female 3	63	54	62	78
Female 4	65	59	95	80
Mean	58	73	74	81
Key descriptors:				
Male 1	Critical	Controlled Detailed Dominant	Emotional Musical	Imaginative* Artistic
Male 2	Factual	Sequential Speaker	Musical Intuitive Talker	Imaginative Artistic* Intuitive Spatial

Male 3	Factual Logical*	Detailed Dominant Speaker	Symbolic Talker	Holistic Synthesiser
Female 1	Rational	Controlled Detailed Dominant Speaker*	Emotional Talker*	Imaginative Holistic
Female 2	Factual Critical Rational Logical*	Detailed	Musical	Holistic Simultaneous
Female 3	Quantitative Critical Logical	Controlled Speaker	Emotional* Talker	Holistic Spatial
Female 4	Quantitative Rational Logical	Speaker	Emotional* Musical Talker	Imaginative Artistic
Work elements (only according to highest score):				
Male 1	None	Planning	Writing	Creative Innovating
Male 2	Problem solving	Organisation	Interpersonal	Innovating
Male 3	Technical	Implementation	Expressing Interpersonal	None
Female 1	None	None	Writing Interpersonal	Creative Innovating
Female 2	Problem solving	Planning Implementation	None	Integration
Female 3	Problem solving Financial	None	None	None
Female 4	Technical	None	Interpersonal	Conceptualising Creative

* Most descriptive

A whole brain® group (Profile 1111) is represented when the group consists of eighteen or more students (Herrmann 1996:151). In this particular case, the group represents only seven students with a profile of 2111, with their preference, in descending order, as D > C > B > A. Only one student showed a primary preference for Quadrant A thinking but she also showed a primary preference for Quadrant D thinking. No student has scored a tertiary code, which indicates that all the mentee's students are comfortable to some extent in all the quadrants.

3.6.3 Mentor's qualitative analysis of the HBDI®

Initially I was surprised that my primary quadrant was C. I regard myself as an introvert that generally dislikes group conversations and group work, especially when the group members are unknown to me. However, I realised as I analysed my profile that Quadrant C is much more than my initial thoughts. Herrmann (2009:14) distinguishes between introverts and extroverts per quadrant. An introvert with preference in Quadrant C is “expressive through writing or non-verbals, caring in a quiet way” (Herrmann 2009:14). The identification of my own profile that represents only 0.26% of the Herrmann database (Herrmann 2009:21) made me realise that individuals are unique in the way they act in certain situations; therefore not everyone will, for example, get emotionally attached to a situation the way I would.

My profile, known as a single dominant profile, makes up only 7% of the population (Herrmann 1995a:86) while my mentee's double dominant profile (limbic) makes up 60% of the population (Herrmann 1995a:86). Even though our profiles are almost similar, Herrmann (1995a:86) characterises single dominant individuals as individuals who might find it difficult to see things the way other people do since they see the world “through consistent lenses”. Their capability to understand how one person can function in two or more preferred quadrants is therefore reduced. As the mentor I found it challenging to understand how my mentee and any other person (in general) can switch and move focus from one quadrant to another which is also, according to Herrmann (1995a:88), a characteristic of a double dominant profile.

For me the identification of my mentee's and my own profiles had the following significant meanings:

- Understood my own preferred thinking style better.
- Adapted my preferred thinking styles to incorporate a whole brain® approach to mentoring.
- Understood my mentee's preferred thinking styles, and therefore understood how and why she thought and acted the way she did.
- Knew which strategies my mentee and I preferred as “comfortable” (her comfort zone) that enabled effective communication.
- Knew which strategies my mentee and I least prefer and those strategies were used to develop whole brain® thinking and to facilitate whole brain® mentoring.

My mentee and her students' interpretation of their profiles is discussed respectively in paragraph 3.9.2.1 and 3.10.1.1 as it formed part of the themes that derived from the semi-structured interviews.

3.7 Action research spiral for mentor: Cycle A

The first action research cycle involved a mentoring session at my home with my mentee prior to my study. It also included semi-structured interviews with my mentee and her students at the Klerksdorp campus during my first visit. This cycle overlapped with my mentee's first three action research cycles (See Figure 3.1 and Paragraph 3.8).

3.7.1 Planning to transform mentorship practice by incorporating the principles of whole brain[®] learning

As the mentor I intended to transform my mentorship practice by means of mentoring a peer, focusing on applying the principles of a whole brain[®] approach. Constructing new meaning when combining my studying of the work of scholars such as Du Toit, De Boer and Bothma (2010); Herrmann (1995a); Herrmann (1996); De Boer and Van den Berg (2001); Scheepers, De Boer, Bothma and Du Toit (2011); Oosthuizen (2001); Lumsdaine and Lumsdaine (1995); De Boer, Bothma and Oldwagen (2012); Thompson, Jeffries and Topping (2010); De Jager (2011); Voges (2005) and Fraser (2008), and getting involved in academic discourse as integral part of a community of practice (Wenger & Snyder 2000) and my own experience, led me to realise the usefulness of the construct "whole brain[®] mentorship" as coined by Du Toit (2012). As the HoD and examiner and subject specialist of the module Basic Accounting, I had not previously formally assigned myself as a mentor to a peer.

Different administrative issues had to be planned for this mentoring relationship and included the following:

- The confidentiality agreements from the respondents (Appendix B), approval from Centurion Academy to conduct the study (Appendix C), a confidentiality agreement with the person who was responsible for the video recording (Appendix D) and ethical clearance were obtained.
- My mentee and her students completed the HBDI[®] online at the Klerksdorp campus. I had completed the HBDI[®] in 2006).

- A time-schedule that suited both my mentee and me was planned for the first mentoring session and my first visit to the Klerksdorp campus, which included my observation of the learning opportunity and the interviews with my mentee and her students.

The first action research cycle was planned with reference to the following time-frame:

- First mentoring session (at my home): 14 July 2011.
- First visit to Klerksdorp campus (included semi-structured interviews with my mentee and her students and an observation of my mentee’s learning opportunity): 22 July 2011.
- Accounting Theme 3: 18 July 2011 – 5 August 2011.
- Accounting Theme 4: 8 August 2011 – 19 August 2011.
- Accounting Theme 5: 22 August 2011 – 16 September 2011. During this time the Tourism students had an excursion week from 5 – 9 September 2011 when they did not attend any lectures.

I also had to plan how I would become a “whole brain® mentor” and how I would facilitate my mentee’s professional development. In this regard I studied Herrmann’s whole brain® model and I considered the expectations, modes of learning and avoidances of students, which could also apply to mentees (Table 2.3), adapted from Du Toit (2012:1224); Du Toit (2013:56); Herrmann (1995a:79), De Boer, Bothma and Oldwagen (2012:91) and De Boer, Bothma, Du Toit and Scheepers (2012). My planning, per quadrant, is represented in Table 3.3:

Quadrant A

- Identify the purpose of the study and communicate it with my mentee – Quadrant C.
- Identify research references and sources related to the study which I could consult.
- Identify quantifiable data that I could obtain, namely quantifiable data from the HBDI® and from student questionnaires.
- How I would communicate (Quadrant C) the theory that included terminology and logical rationales to my mentee.

Quadrant B

- Provide detailed outlines and clear instructions.
- Follow a step-by-step process and organised consisted approach.
- Follow directions.
- Stay on track.
- Include repetition.

Quadrant C

- Share my personal reactions and experience.
- Meet new people.
- Remain emotionally involved.
- Create a user-friendly learning experience.

Quadrant D

- Explain the mentor relationship by means of a metaphor.
- Implement new, innovative ideas and concepts.
- Rely on my intuition.

Considering the whole brain® strategies that I planned to implement, I had to plan the data collection methods and data gathering for this cycle that included the following:

- Semi-structured interviews – they were conducted during my visit to the Klerksdorp campus.
- Field notes from observing the learning opportunity.
- My own documents: these included a reflective journal, emails and documents that I had prepared for my mentee, such as a summary of Whole brain® learning, action research and the metaphorical explanation of the mentor relationship – I have kept a continuous record of these documents.
- My mentee’s documents: these included my mentee’s reflective journal, her action research process per Accounting theme, and examples of assessments and assignments – these documents were either e-mailed or collected by me during my visits to the Klerksdorp campus.
- Student questionnaires that were completed after each Accounting theme – my mentee sent the completed questionnaires via courier.
- Video recording of the lecture that I attended at the Klerksdorp campus.

3.7.2 Using the principles of whole brain® learning during action research cycle A

One of my responsibilities as a mentor was to assist my mentee in her professional growth by means of the principles of Whole brain® learning. Table 3.3 constitutes the whole brain® strategies used in the mentoring relationship in action research cycle A. De Boer, Bothma, Du Toit and Scheepers (2012) and Oosthuizen (2001) posit expectations of students in different quadrants that were adapted as possible expectations of my mentee. Some of the strategies pertaining to one quadrant

overlapped with other quadrants. The data analysis, which includes data from my mentee’s action research cycle A (Paragraph 3.8) is discussed in Paragraph 3.9.

Table 3.3: Whole brain® strategies in the mentoring relationship – action research cycle A (adapted from De Boer, Bothma, Du Toit & Scheepers 2012 and Oosthuizen 2001)

Expectations from mentee	Strategies of mentor
Quadrant A	
<ul style="list-style-type: none"> • Purpose • Terminology • Concrete information • Expert sources / citations; research references • Clear objectives • Theory and logical rationales 	<ul style="list-style-type: none"> • The purpose and objectives of the study were communicated to my mentee (Quadrant C). • I summarised in written format the theoretical aspects (explaining action research and the Herrmann whole brain® model). • I consulted and reviewed literature (articles and journals). • Journal articles, text books and notes were made available to my mentee. • I explained the quantifiable data of the HBDI® test results to my mentee by means of informal one-way communication (also Quadrant C). • My mentee, each of her students and I received a personal booklet from Herrmann International that explained and analysed our personal profile. • Quantifiable data was obtained from my mentee’s students’ questionnaires that formed part of the feedback that I gave to my mentee (also Quadrant C) – See Appendix G.
Quadrant B	
<ul style="list-style-type: none"> • Detailed outlines • Clear instructions • Step-by-step processes • Repetition and review • Organised consisted approach • Staying on track and on time, making time management schedules • Want to follow directions and do not want to try something in a different way 	<ul style="list-style-type: none"> • The expectations of the research study were set out and planned from the beginning to the end (structured weekly planning). • The expectations and instructions of the study were clearly communicated on more than one occasion to my mentee (telephonically, by means of written consent and verbally). • A consistent approach was followed: my mentee planned each theme, sent it to me after which I provided feedback. My mentee then completed the action research steps and sent a report to me.

Her students completed the feedback questionnaires and feedback deriving from these questionnaires was given to my mentee.

- My mentee kept records of her planning, acting, observations and reflections.
- I regularly provided feedback to my mentee.
- I kept records of my feedback to my mentee.
- I kept records of my observations and reflections.
- I engaged in the practical application of whole brain® learning in the mentoring relationship.
- My mentee engaged in the practical application of whole brain® learning in her Accounting class.
- My visits to the Klerksdorp campus were scheduled and planned in advance by both my mentee and me; my mentee planned the day by means of scheduling times for the interviews and the time for her learning opportunities.
- Practical examples of characteristics peculiar to each quadrant were given to my mentee.
- I used a practical example to explain the HBDI® results to my mentee's students.

Quadrant C

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| <ul style="list-style-type: none"> • Team project • Hands-on tasks • Sharing of personal reactions • Qualitative research • Meeting new people • Expressing feelings • Moving around (kinaesthetic) • Respect for and from mentor • Personal connection with mentor • Emotional involvement • User-friendly learning experience | <ul style="list-style-type: none"> • The qualitative data of the HBDI® results was explained to my mentee and her students. • I had the opportunity to meet the lecturers and my mentee's students at the Klerksdorp campus during my visit. • My mentee and I formed a good relationship and friendship. • I respected the fact that my mentee had other commitments and responsibilities (she was in her final year of her M.Com. studies; she taught six other subjects and had many administrative responsibilities within the Tourism department at the Klerksdorp campus). • I was continuously involved in my mentee's transformation process by means of e-mails and face-to-face interactions. • My mentee and I met at my house prior |
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	<p>to the study.</p> <ul style="list-style-type: none"> • Blended mentoring contributed to a user-friendly mentor relationship (that overcame the challenge of a long distance mentor relationship). • I shared stories and ideas from my previous experience with regard to whole brain® learning. • The atmosphere remained positive under all circumstances throughout the study, which added to the mutual respect of both my mentee and me. • My mentee’s commitment and willingness to transform her practice were a motivational experience for me. • I provided feedback that was based on personal experience. • My mentee and I reflected on our personal experiences. • During the interviews with my mentee’s students they shared their personal feelings with regard to Accounting (i.e. whether they liked the subject or not, whether their feelings towards the subject had changed, how their feelings towards the subject had changed from school to now, etc.).
<p>Quadrant D</p>	
<ul style="list-style-type: none"> • Mental imagery • Discovery tasks • Big picture overviews • Pictures, metaphors and overviews • Discovering the content • Freedom to explore • Quick pace and variety • Opportunity to experiment • New ideas and concepts • Taking initiative and getting involved • Problems with many possible answers • Thinking about the future • Coming up with something new • Relying on intuition 	<ul style="list-style-type: none"> • The mentoring relationship was explained by means of a metaphor and pictures based on a tourist attraction, the Preikestolen, in Norway. • Blended mentoring was a new, “strange” and challenging concept to explore. • I allowed my mentee freedom to explore her own practice. • My mentee engaged in whole brain® learning – a new concept where she had to take initiative and had to come up with whole brain® teaching strategies. • I provided colourful notes and feedback. • In some cases the planning of assignments according to the action research planning phase changed in the spur of the moment (e.g. I did not receive the planning of the financial statements in time, but left my mentee to explore on her own without the feedback).

Quadrant A: Upon consulting the literature I discovered the concept of “blended mentoring” and other suggestions towards mentoring.

I explained the action research process, the HBDI® results and the four quadrants to my mentee by means of an informal lecture (one way communication) at my house (the HBDI® results also contained qualitative data that relates to Quadrant C). The action research steps and Herrmann’s whole brain® model were summarised and were made available as notes to my mentee. The notes were set out logically and pointed out only the main aspects. Additional journal articles and applicable websites with references to the Herrmann whole brain® model were provided to my mentee.

The HBDI® results (consisting of qualitative data – Quadrant C) of her students were explained to them in class by me during my first visit to the Klerksdorp campus. Additionally, they each received a personal booklet from Herrmann International that explained and analysed their personal profiles in detail. After each Accounting theme her students were required to complete a feedback questionnaire designed by me. The questionnaire was couriered to me and I analysed the data and provided appropriate feedback (Quadrant C) to my mentee; quantifiable data was thus obtained.

Quadrant B: The Accounting themes were planned in advance by means of a weekly time schedule. My visits to the Klerksdorp campus were planned in advance and my mentee assisted in arranging the time schedules for the learning opportunities and interviews; she also arranged a venue for the interviews. Both our action research projects were set out step-by-step; my mentee planned every Accounting theme in advance, indicating exactly how she intended to implement whole brain® thinking and learning.

I explained the HBDI® test results to my mentee’s students by means of a practical example; an example of preparing and baking a cake was used.

Quadrant C: Both my mentee and I indicated a primary preference for Quadrant C. Therefore we both respected each other beyond the research study and had the frankness to express our feelings and to ask questions if one of us was uncertain of what the other intended to say. Conversations, telephonically and via e-mail, were not based on the action research only, but revealed that we also cared for and respected each other’s personal lives.

I shared some of my personal experiences of incorporating whole brain® thinking and learning in my Accounting class to my mentee. The information received from Herrmann International (2006 and 2011) with regard to each individual's profile was regarded as qualitative data and it provided an in-depth explanation of each individual's profile.

I also had the opportunity to meet my mentee's students personally. I knew her students' names prior to my visit and it was important for me to call her students by their names.

Quadrant D: Prior to the research study I designed a metaphorical presentation that explained the mentoring relationship to my mentee. I felt that, since we were Tourism lecturers, I would use a tourist attraction as metaphor and decided on the Preikestolen in Norway. The visual images in the presentation added to the explanation.

The feedback and notes provided to my mentee were done in different colours; where applicable, the colour associated with the specific quadrant was used).

The concept "blended mentoring" was a new concept that was explored by both my mentee and me. There were no particular rules to follow, which allowed us to explore this type of mentoring.

The concepts "action research" and "whole brain® learning" were new constructs to my mentee and I allowed her freedom to explore these constructs on her own.

We were both able to visualise the "bigger picture" of transforming our respective practices and were excited about future opportunities where whole brain® thinking and learning could be incorporated.

Paragraph 3.9 provides examples and an analysis of the data that was collected with regard to these whole brain® strategies.

3.7.3 Observation

Stringer (2004:80) notes that observation provides "participants with opportunities to stand back from their everyday involvement and watch purposefully as events unfold". Welman and Kruger (2003:184) indicate that participant observation involves researchers (my mentee and myself in our respective cases) to be part of, and report on their daily experiences of everyone involved in a

particular process. Therefore, even-though I was part of this action research cycle, I did not constantly play an active part during observations (although I might have been present), but I did observe and report on the experiences. The observations during this action research cycle included the quantitative and qualitative data (See Paragraph 3.8) that I have gathered by means of the following:

- HBDI® profiles of the respondents, which formed the baseline of this study.
- Documents that I had kept (See Paragraph 3.7.1).
- Documents of my mentee (See Paragraph 3.7.1).
- Questionnaires that my mentee's students completed after each Accounting theme.
- Semi-structured interviews with my mentee and her students.
- Video recordings of the lecture that I had attended.

3.7.4 Reflecting on action research cycle A

Reflection refers to “interpreting one’s own interpretations, looking at one’s own perspectives from other perspectives, and turning a self-critical eye onto one’s own authority as interpreter and author” (Evans 2002:17). It is an on-going process and a lecturer should reflect continuously (Mills 2003:103). Self-reflection helped my mentee and me to think continuously about what we were doing and to become critical about what we were doing (and why we were doing it) (McNiff & Whitehead 2005:70) in order to find ideas that can be applied as possible solutions to the research problem (Stringer 2004:97).

According to Evans (2002:15) reflection can incorporate both attitudinal development where the researcher’s attitude towards his / her work is modified and functional development, where the researcher’s practice improves.

My reflection, recorded in my reflective journal, included the following:

- Continuous self-reflection on the mentoring process (my own learning during the process).
- Reflection on observations made during my mentee’s learning opportunity.
- Reflection on my mentee’s learning opportunities and her observations and reflections.
- Reflection on the effectiveness and challenges of long distance mentoring, especially with regard to blended mentoring.

- Reflection on the effects of my own thinking style preference and the influence it had on the mentoring process, and how I followed a whole brain® approach.

3.8 Action research spiral for mentee: Cycle A

My first action research cycle overlapped with three of my mentee's cycles. The three cycles of my mentee were identified in terms of action research that was conducted during the following learning opportunities:

- Accounting Theme 3 (source documents and journals) – action research cycle A1.
- Accounting Theme 4 (bank reconciliation) – action research cycle A2.
- Accounting Theme 5 (financial statements) – action research cycle A3.

These three cycles are discussed in one section due to the overlapping with my one cycle; in some cases the data has been integrated.

The first two Accounting themes were presented prior to the study's commencement. A group assignment that formed part of the student's summative assessment incorporated Accounting Themes 1, 2 and 3 that formed part of this spiral.

The completion of the HBDI® by my mentee and her students served as baseline data for my mentee's cycles. She planned whole brain® strategies for each Accounting theme after which she sent the planning via e-mail to me. I responded with constructive feedback or provided additional suggestions as she wanted to share some innovative ideas without changing her ideas. I gained knowledge of my mentee's action research steps and incorporated some of the whole brain® teaching and learning strategies in my own practice.

After each Accounting theme had been presented, my mentee completed a written document stipulating the steps followed in the action research – her planning of the Accounting theme, how she acted in order to transform her practice, her observations and reflection on each theme. Upon completing the reflection phase, she planned the next theme. See Appendix I for examples pertaining to these documents and examples PowerPoint presentations prepared by my mentee.

The action research steps of my mentee can be summarised as follows:

3.8.1 Planning to transform teaching practice by incorporating the principles of whole brain® learning

I informed my mentee of the requirements of the study and the research questions. She aimed to transform her practice through gaining knowledge with regard to various thinking style preferences of the Herrmann whole brain® model. She planned strategies to transform her lectures and assessments for each Accounting theme, which was in alignment with whole brain® learning.

Her planning included the following:

- Strategies in accordance with the Herrmann whole brain® model that she applied during the learning opportunities; she used the data derived from the HBDI®).
- Designing assessments and presentations that were in alignment with the Herrmann whole brain® model.

3.8.2 Using the principles of whole brain® learning during learning opportunities

My mentee adapted her teaching and assessment methods to enhance whole brain® thinking and learning. The aspects she considered included the following:

- She gained a full understanding of the Herrmann whole brain® model and implemented a whole brain® thinking and learning strategy in her Accounting class.
- She designed and developed strategies for her Accounting lectures that represented whole brain® thinking.
- She designed and developed assignments for her Accounting lectures that represented whole brain® thinking.

Table 3.4 summarises the whole brain® strategies used in my mentee's Accounting class. In the case where the strategy was implemented for a specific Accounting theme or the group assessment only, the applicable Accounting theme's number or reference to the group assessment is indicated in brackets. Examples and data analysis of these strategies are provided in Paragraph 3.9 unless differently indicated. De Boer, Bothma, Du Toit and Scheepers (2012), and Oosthuizen (2001) posit expectations of students in different quadrants that were kept in mind when my mentee planned the strategies.

Table 3.4: Whole brain® strategies to facilitate teaching and learning – action research cycle A (adapted from Oosthuizen 2001 and De Boer, Bothma, Du Toit and Scheepers 2012)

Expectations from mentee’s students	Strategies of facilitator (mentee)
Quadrant A	
<ul style="list-style-type: none"> • Terminology • Challenging problems to solve • Concrete information • Clear objectives • Precise, to the point information • Theory and logical rationales • Textbook readings • Quantifiable numbers 	<ul style="list-style-type: none"> • Her students received notes, additional to the text book that they used as reference. • Her students were required to refer to their text book when they completed assignments. • Her students were required to refer to the additional notes when they completed assignments (Quadrant B). • My mentee used fact-based lectures during learning sessions.
Quadrant B	
<ul style="list-style-type: none"> • Skills practice • Well-structured assignments • Clear instructions • Practical concrete examples • Step-by-step processes • Repetition • Detailed lectures • Staying on track and on time, making time management schedules • Want to follow directions and do not want to try something in a different way 	<ul style="list-style-type: none"> • My mentee planned the execution of this learning opportunity by means of following a step-by-step approach. • Students received A4 plastic folders issued by my mentee for each Accounting theme. This allowed them to organise the additional notes and tasks for each Accounting theme sequentially. • The different Accounting concepts were frequently repeated. • My mentee regularly questioned her students (verbally) with regard to specific Accounting concepts. • Various practical examples were used to clarify the Accounting concepts. • Students received guidelines that showed them how to approach a transaction / question / concept (Accounting Theme 3). • Upon commencement of each Accounting theme, my mentee clarified the concepts in detail. • Her students were informed in advance by means of a weekly schedule in their study guide when a new Accounting theme would commence, what the new theme consisted of and when the assessments were scheduled.

	<ul style="list-style-type: none"> • Formative and summative assessments with regard to each theme were conducted. • Students were required to complete well-structured tasks.
Quadrant C	
<ul style="list-style-type: none"> • Group discussion and involvement • Small group discussions • Music • Sharing ideas • Doing role-play or physical acting out • Learning by teaching others • Prefer video to audio learning material • Moving around (kinaesthetic) • Hands-on learning • Respect for and from others • Personal connection with lecturer • Emotional involvement • User-friendly learning experience 	<ul style="list-style-type: none"> • Music was played in the background when students completed their tasks (Accounting Theme 3). • Students were required to complete tasks in groups. • Students were required to perform role-play where different transactions (relating to different Accounting concepts) were “acted”; the other groups then had to identify the transactions of the role-play (group assessment). • Students respected one another and my mentee; and my mentee respected her students and their diverse learning styles. • In the cases where students did not understand a particular Accounting concept, my mentee facilitated those students’ understanding individually (personal and individual attention was provided). • My mentee was able to “read” her students’ emotional minds and could therefore motivate or lift their spirits. • Students’ afterwards engaged in informal conversations with regard to the learning experiences in the Accounting class (according to a student - respondent Male 2 – during the first individual interviews).
Quadrant D	
<ul style="list-style-type: none"> • Surprising and playful approaches • Pictures, metaphors and overviews • Discovering of the content • Freedom to explore • Quick pace and variety • Opportunity to experiment • New ideas and concepts • Looking at the big picture, not the facts or detail • Taking initiative and getting involved • Brainstorming 	<ul style="list-style-type: none"> • Colourful, innovative PowerPoint presentations complemented by pictures were used; she kept written explanations to the limit (Accounting Themes 3 and 4). • My mentee used different coloured pens to distinguish between various concepts and more challenging aspects (Accounting Themes 4 and 5). • My mentee used a metaphorical association to distinguish between Accounting concepts (Accounting Theme

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| <ul style="list-style-type: none"> • Problems with many possible answers • Playing with new ideas • Exploring hidden possibilities • Thinking about the future • Future-orientated case discussions • Coming up with something new • Thinking about trends • Relying on intuition | <p>5).</p> <ul style="list-style-type: none"> • The use of metaphorical associations and role-play (Quadrant C) of transactions were new ideas that were implemented (Accounting Theme 5 and group assignment).
The group tasks allowed her students to explore the Accounting concepts on their own from another view; they were required to take the initiative and design their own transactions (whereas the transactions were usually given to them); they had to brainstorm and consider various possibilities of how to perform and act the transactions. |
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Quadrant A: Students were required to purchase the prescribed text book for the subject. Additional detailed notes, which elaborated on various concepts specific to an Accounting theme, were issued to her students. These notes not only provided additional theory required to study the specific theme, but summarised the Accounting theme in a logical manner. Students had to refer to their text books and additional notes when completing assignments or when they prepared for assessments.

Quadrant B: My mentee planned the execution of each Accounting theme in a step-by-step manner. She also designed steps that the students could use when completing a question relating to a specific Accounting theme.

The mentee's students received A4 plastic folders per theme that allowed them to organise and separate their notes, assignments and assessments of each Accounting theme.

Steps and concepts of each Accounting theme were continually repeated. My mentee questioned her students with regard to specific Accounting concepts verbally on a regular basis to enhance the receptiveness.

Her students acknowledged my mentee's continuous usage of practical examples to explain various concepts.

Quadrant C: My mentee played peaceful music softly in the background when students completed their tasks individually or in a group.

Quadrant D: My mentee used colourful PowerPoint presentations with pictures as associations of different Accounting concepts.

Colour was used to distinguish different Accounting concepts from one another and to identify aspects in the Accounting theme known to be difficult and challenging.

The implementation of whole brain[®] learning was a new, challenging concept to explore. My mentee had to take the initiative to accommodate all diverse learning styles.

The group assignment allowed the mentee's students to, for the first time in the Accounting class, complete an assignment where they were responsible to design the transactions. They had to take the initiative and had to explore with many possibilities as they had to "act" their transactions.

3.8.3 Observation

The data that was gathered (See Paragraph 3.9) for my mentee's purposes included the following:

- Documents: my mentee recorded her observations of the learning opportunities of each Accounting theme and she kept a reflective journal.
- Video recording and feedback from the mentor.
- Feedback from the mentor with regard to student interviews.
- Students' marks.

3.8.4 Reflecting on learning opportunities

Reflection by my mentee included the following:

- Reflection on the learning experience and her implementation of whole brain[®] learning and teaching after each theme in terms of learning opportunities, assessment opportunities, and observations made in her class.
- Reflection on the HBDI[®] scores.

3.9 Data analysis of the mentor and mentee's action research spirals: Cycle A

A combined data analysis with regard to cycle A is discussed due to the overlapping of my mentee's and my spirals.

3.9.1 Face-to-face mentoring session

After completing the HBDI®s I had to meet with my mentee to explain the results, the concept of facilitating learning by means of following a whole brain® approach and the action research process; they were all unknown concepts to my mentee at the time. Both my mentee and I agreed that we wanted to meet in person when these concepts were discussed. We had met at my house during the holiday as my mentee was in Pretoria at the time visiting a friend, and the informal setting was a good starting point in the mentor relationship. A formal meeting at the office at that stage might have jeopardised the mentor relationship, a direction that I did not want it to follow. The office setting, which was also strange to her since she had not been to the Centurion campus very often, might have been intimidating. Therefore, meeting me at my house in a relaxed atmosphere contributed to the immediate trust and mutual respect that was gained and that we had for each other as peers.

3.9.1.1 Qualitative analysis

The qualitative data was derived from my personal documents as I recorded my observations and reflected on the first mentoring session in my reflective journal; I documented the basic information with regard to whole brain® learning and action research for my mentee.

During the first mentoring session I explained the research question and the purpose of the research, the basics of the four quadrants and strategies to facilitate learning in each quadrant, and the basic foundation of the action research cycle and steps to my mentee (See Appendix H). I shared my personal experiences with her with regard to whole brain® learning. I prepared hand-written notes for my mentee that summarised the research questions, the four quadrants, examples of how students with preference for each quadrant learn and notes that explained the action research cycle and steps that my mentee could use as reference. When my mentee had left and I reflected on our meeting, I realised that I had comfortably adapted my own preferred thinking style during the meeting. The hand-written notes, talking about my experiences, the sharing of ideas were all

related mainly to Quadrant C. The reason for this was that I did not thoroughly plan whole brain® strategies prior to my mentee’s visit and realised how the distribution of my adjective pairs (which tell us how we react under pressure) were true in this regard. It was a critical eye-opener and I realised that, if you want to adapt a whole brain® approach, you have to make a deliberate mind-shift.

I changed my “strategy” and neatly typed the hand-written information that I gave my mentee and sent all the documentation (See Appendix H) via e-mail. I summarised the basics of Herrmann’s whole brain® model by using colour (blue for Quadrant A, green for Quadrant B, red for Quadrant C and yellow for Quadrant D – as it is typically used) to distinguish between the quadrants. I followed a logical and repetitive order for all four quadrants. In a separate document I explained the research questions and explained the steps in action research. I concluded the document with a PowerPoint attachment that explained the mentor relationship metaphorically. In this regard I decided to choose a popular tourist attraction, since besides the fact that we were Tourism lecturers, my mentee was also responsible for teaching the subject Tourism Destinations that focused, among others, on tourist attractions globally.

3.9.2 Semi-structured interview 1: Mentor and mentee

When the second semester commenced, my mentee and I scheduled a date for my first visit to the Klerksdorp campus. Since the visit included an observation of my mentee’s lecture (Accounting Theme 3, Paragraph 3.9.3) and a semi-structured interview with my mentee and with her students (Paragraphs 3.9.2 and 3.10.1 respectively), we had to schedule a time that suited both of us and her students. Once the date was finalised, my mentee sent me a time schedule via e-mail outlining the programme for the day. She allocated specific times for the interviews and for her class. She arranged a separate venue for the interviews since the lecture rooms were used for classes. My mentee took control of the arrangements and planning of the day that typically reflected her preferred preference for Quadrant B thinking.

When arriving at the Klerksdorp campus the following morning, I met my mentee and the programme coordinator of Tourism. I had been to the Klerksdorp campus in the past and had met the three Tourism lecturers, two of which were my mentee and programme coordinator. My mentee and I went to the classroom where the semi-structured interview took place.

3.9.2.1 Qualitative analysis: Semi-structured interview 1

The themes (Figure 3.13) that were identified during the semi-structured interview included the HBDI® results, whole brain® facilitation, mentoring expectations, mentoring: obstructive factors and action research.

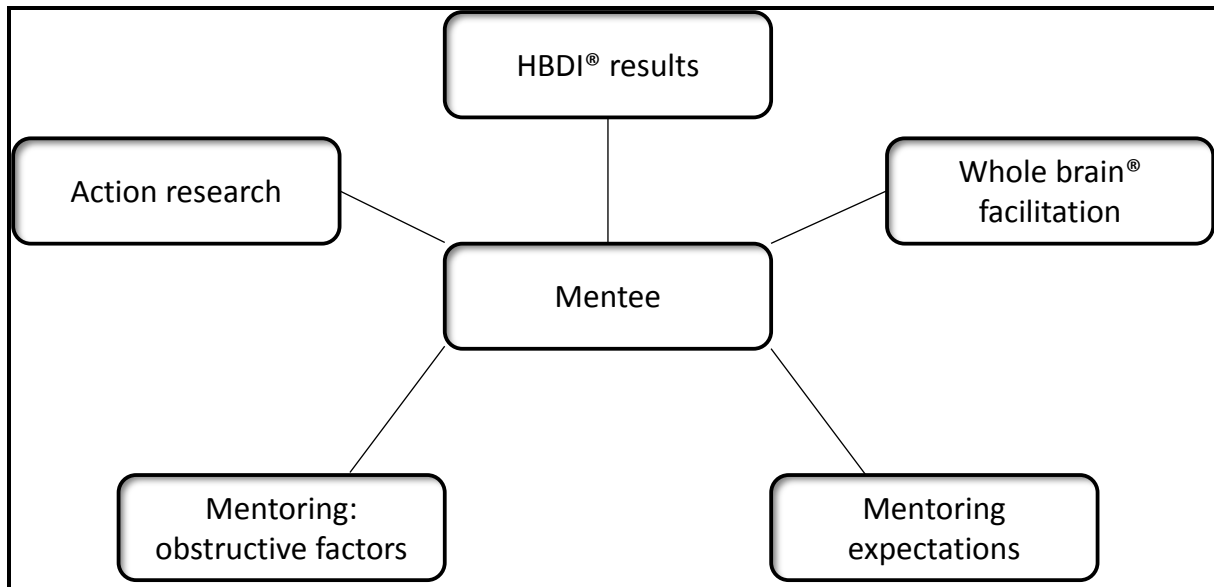


Figure 3.13: Themes identified by mentee during semi-structured interview 1

HBDI® results: My mentee acknowledged her profile as being accurate. *Ek moet sê, toe die resultate eers terugkom toe kon mens sien “o ja, dit is so”. [I have to say, when I received the results, I could see that “oh yes, it is so”].* She confirmed that she is organised, likes to plan, that she repeats aspects in order to avoid uncertainties, she likes being in control, she cares for others and she considers other people’s feelings. She also noted that she is comfortable with quadrants A and D. The HBDI® made her aware of other thinking style preferences that allowed her to accommodate everyone’s preferences. *Alhoewel ek nie ‘n voorkeur het om volgens die profiel van kwadrant A en D te werk nie, is ek nogtans gemaklik met daardie leerstyle. Die toets het my wel bewus gemaak om meer aandag aan daardie leerstyle te gee sodat ek gebalanseerd my klasse kan aanbied en aan almal se voorkeure kan voldoen soos byvoorbeeld groepswerk en nie net klas te gee volgens my eie voorkeure nie. [Even-though I do not have a preference to work according to the profile of A and D, I am still comfortable with those thinking styles. The test made me well aware to pay more attention to those thinking styles in order to balance my lectures and to accommodate everyone’s requirements, for example, group work, and not to lecture according to my own preferences only].*

My mentee noted that her own profile was balanced with her students' profile in the sense that the minority of her students had a secondary preference for Quadrant A, and a stronger preference for Quadrants B, C and D. She mentioned that she could therefore provide the information informally instead of referring to the text book all the time. She stated that all four quadrants should be stimulated instead of only two, for example.

Whole brain® facilitation: My mentee noted that she identified each quadrant's preferences and she attempted to incorporate part of each quadrant in planning her action research. *Ek probeer 'n gedeelte van elke kwadrant inbring, klein goedjies, soos byvoorbeeld die musiek wat jy inbring, of stapsgewys, soos sê maar die brondokumente en joernale – daar is nie stappe nie, maar toe het ek stappe ingesluit om dit vir hulle makliker te maak. Ek gebruik ook PowerPoint-aanbiedings (sic) om dit visueel voor te stel; die voorbeelde wat ek gebruik is altyd eers prakties. Ek probeer dit so snaaks as moontlik ook maak, net om hulle aandag ook te kry. [I tried to incorporate a part of each quadrant, small things, for example the music that I incorporated, or following steps, like the source documents and journals – there are no steps, but I incorporated steps to make it easier for them. I also use PowerPoint presentations to illustrate it visually; the examples that I use are always practical. I try to make it as funny as possible, just to grab their attention].* She also acknowledged that the way she was thinking had changed, *want vir die eerste keer moet jy in al vier kwadrante dink en nie net die twee van jou voorkeur nie [because for the first time you have to think in all four quadrants and not only in the two of your preference].*

Mentoring expectations: My mentee indicated that she expected me to provide feedback with regard to her planning of each quadrant, and she requested assistance with regard to what to observe and when to record her observations and reflections. She preferred communication via e-mail since she could read it later in the evening; she suggested that we could meet each other again after Accounting Theme 3 and 4 to review and to identify which strategies were working and whether her students' marks had changed and again to meet after Accounting Theme 5 and the revision. Her response in this regard confirmed that blended mentoring was the most appropriate mentoring technique.

Mentoring – obstructive factors: My mentee indicated that she considered "time" as the most obstructive factor. She stated that since everything was new concepts, it would take some time to get used to it (such as our communication and the change of her and her students' mind-sets). *Mens is nie gewoond as jy die heelyd klasgee dat jy moet teruggaan en neerskryf, en kophou, en*

heelyd as hulle (studente) reageer, dink hoe reageer hulle nie. So ek dink dit gaan maar net wees die ingesteldheid, om heelyd bewus te wees van hoe hulle gaan reageer op hierdie nuwe studiemetode. Maar ek dink na 'n week of twee sal mens daaby aanpas. [You are not used to, if you lecture the whole time, that you have to go back to record it, to keep cool, and to constantly think if they (students) react, how do they react].

Action research: My mentee agreed that the application of the steps in the action research cycle assisted with the planning of whole brain[®] implementation. She enjoyed the planning, which is regarded as a Quadrant B preference, her strongest preference, because she could, for the first time, see how everything was explained in detail; previously she could not see it in such detail. She explained how she would incorporate the whole brain[®] strategies in her planning. *So ek moet die tema vat en kyk hoe gaan ek dit aanbied dat al vier kwadrante voorkeur kry; maar die (sic) drie waarin hulle hoog lê, of sterk lê, bietjie meer aandag daaraan gee, maar tog die A-gedeelte inbring, want hulle moet dit ontwikkel. [So I must take the theme and see how I would present it so that all four quadrants have preference; but the three stronger quadrants will receive more attention, but I will also incorporate the A section, because they have to develop it].* My mentee acknowledged that, with the second step of action research (acting), she noted that she might have planned something, but it turned out differently during her lecture. She also noted that she could compare the acting part with the planning part and the responses that would derive from the acting part. She found that the second and third observation steps were almost similar, and noted that *terwyl jy dit uitvoer, moet jy hulle response (sic) toets en kyk hoe reageer hulle daarop [while you are busy performing it, you have to test their responses and see how they react].* She mentioned that she could question her students during observation; for example, *“Hoe het julle die aanbieding (sic) ervaar?”* or *“Het die liedjie vir julle sin gemaak?”* [*“How did you experience the presentation?”* or *“Did the song make any sense?”*]. She described the final step (reflection) as looking back at the previous three steps and identifying which strategies had worked and which ones had not.

3.9.3 Accounting Theme 3 – Source documents and journals (action research cycle A1)

I received my mentee's planning for Accounting Theme 3 via e-mail prior to my visit. I therefore based my observations on how the “acting” phase compared with the “planning” phase since I was acquainted with the “planning”. I also observed additional whole brain[®] strategies that were implemented that had not been indicated on my mentee's planning, such as the practical examples that she used.

3.9.3.1 Qualitative analysis: Text analysis of e-mails prior to the learning experience

My mentee sent me her planning for the learning opportunity via e-mail on 19 July 2011, 8:13 a.m. She requested me to look at her planning. *Loer net vir my na die beplanning om te kyk of ek op die regte pad is! [Just check the planning for me to see if I am on the right track!]*. I replied (extract from e-mail 19 July 2011, 9:51PM) that she was definitely on the right track. I mentioned that the way her planning was structured was typical of a Quadrant B person, which was her preferred thinking style. I suggested the following: *Jy kan miskien aandui watter gevallestudies / opdragte individueel of in groepverband gedoen word – groepopdragte sal bv. deel van Kwadrant C wees (miskien sal dit goed wees as een van jou opdragte wel ‘n groepopdrag is, of as die studente ‘n opdrag kry waar hulle die werk aan mekaar moet verduidelik – jy moet dan hulle response waarneem). [Maybe you can indicate which case studies / assignments are conducted individually or in groups – group assignments will, for example, be part of Quadrant C (maybe it will be good if one of your assignment is a group assignment – or if your students can get an assignment where they have to explain the work to one another – you then just have to observe their responses)]*. With regard to this suggestion, my mentee responded via e-mail (21 July 2011, 01:55PM) that she would complete the “quiz” in groups and the assignments (she referred to them as case studies) individually.

3.9.3.2 Qualitative analysis: The learning experience and my observations

The data that was analysed included my personal documents (reflective journal and field notes from observations), the video recording and documents from my mentee (recordings of the action research process). As an introduction Abba’s *Money, Money, Money* played in the background. My mentee reminded her students of the association with the song (the song should remind them that money has a source – and they should identify the source). At this stage her students had already copied the theoretical work and my mentee revised the work. She also reminded her students of the steps that they should apply when identifying source documents and journals.

A PowerPoint presentation was shown with pictures and a heading. My mentee described a scenario relating to the picture and provided a practical example as explanation of source documents. She continually referred to the song *Money, Money, Money* and the steps that were identified and asked logical question that led to the identification of the appropriate source

document. She also referred to “baskets” that were allocated to each source document – her students had to identify which “basket” was the appropriate basket for each transaction.

The first tasks were planned as group tasks and my mentee divided the class into two groups, but immediately ended up with an individual tasks. My mentee divided the class into two groups and they were required to identify the source documents and appropriate journal within their groups. My mentee showed a picture on PowerPoint and explained the transaction.



The answer was given by a student and the tasks resulted in an individual assignment. My mentee then chose a student that had to provide the appropriate answer. If a student struggled with the answer, my mentee guided the student by asking questions (according to the steps that had been identified) leading to the answer. After that my mentee handed each student an assignment on transactions where her students were required to identify the appropriate source document and journal while soothing music was played in the background. Her students were allowed to use their notes and text book for these assignments. I observed that her students had the confidence to ask her questions when she walked past them.



It also seemed as if her students wanted to ask more questions.



In order to confirm this observation, I asked my mentee afterwards to ask her students whether they would have preferred to work in groups. The first response, almost immediately, was “Yes”. Another response from a student was that she preferred to work alone for the reason that she wanted to see with which transactions she struggled. The student with profile 1121 indicated that she preferred to use the steps as reference during completion of the assignments. Another response was that the student would have preferred to complete the assignments in a group, but they should have also have been allowed to use the text book and notes as reference. My mentee asked her students if the steps had helped them and they all agreed. She suggested that they complete the second assignment in groups, but she mentioned that she was afraid that one person would do all the work and the others simply copy the answers.

My mentee asked her students whether the pictures on the PowerPoint presentation assisted them in making a better association with the transaction (visually) and they all agreed. She further asked them if the song (Abba’s *Money, money, money*) helped them to make the connection with regard to the appropriate transaction (she noted in class that the song should remind them that they were busy working with money and that they should identify the ways in which the money was spent). Her students’ response indicated that they had made that particular connection with the song.

3.9.3.3 Qualitative analysis: My mentee’s observations and reflection

From my mentee’s personal documents in which she recorded the action research process for Accounting Theme 3 she observed that her students were at more at ease when they used the steps that she compiled when completing the case studies. Upon reflecting on the process, she noted that the steps should serve as a guideline, but her students tended to forget that they could use the steps that put them at ease. She suggested that they should write a test on the steps in order to remember and to implement them. Her observation and reflection in this regard highlighted her

primary preference for Quadrant B thinking – learning by means of a step-by-step approach and by means of repetitive work (the test).

She further noted during reflection that her students did not properly read the transactions and that they hurried to finish the specific case studies (or tests). She was, however, able to identify generic transactions that students struggled with and compiled extra exercises in this regard. She indicated that music had a calming effect on her students and she would continue playing music in the class.

After returning to Centurion I sent my mentee feedback on Accounting Theme 3 that included my observations, feedback from her students' interviews and feedback from my mentee's action research steps (See Appendix J). I noted that my mentee's explanation of the action research steps and her development of thinking in all four quadrants was a reflection of how she started to adapt a whole brain® approach (whole brain® thinking).

3.9.4 Accounting Theme 4 – Bank reconciliation (action research cycle A2)

I received my mentee's planning prior to the commencement of Accounting Theme 4. My feedback, a suggestion, was done in colour, representing the appropriate quadrant, and focused mainly on Quadrant C development. I suggested that she focus on group tasks and that she should give her students the opportunity to present a class. I included an article (West & Saunders 2006) that focuses on a learner-centred approach to teaching, which supports Quadrant C, to highlight the importance of the student in the learning process. I observed that my mentee added to her planning (Quadrant B) that she gave her students A4 plastic folders to organise their notes, case studies and tasks according to each theme. She noted that she added this strategy because she wanted them to be more organised.

3.9.4.1 Qualitative analysis: The learning experience

A colourful PowerPoint presentation with graphics complemented the learning experience. An introduction to the Accounting theme was provided; examples were illustrated with graphics and she distinguished between the two main components in this specific Accounting theme (The bank and the company). Her students completed assignments.

3.9.4.2 Qualitative analysis: My mentee's observations and reflection

My mentee noted in her personal documents in which she recorded the action research process for Accounting Theme 4 that her initial plan with regard to group work was to divide the class into two groups; one group would represent the company and the other group the bank. The groups had to communicate with one other in order to identify and correct mistakes made by either the company or the bank. However, she observed that the groups were confused and students worked on their own rather than in a group. She then decided to complete Class Assignment 3, which had been planned as an individual task as a group tasks. During reflection she decided to follow a different approach towards group work – she would rather let her students complete individual tasks at the commencement of an Accounting theme and once they were acquainted with the work she would introduce group tasks. According to her, group tasks in the initial stage of an Accounting theme could therefore lead to confusion.

3.9.5 Accounting Theme 5 – Financial statements (action research cycle A3)

When Accounting Theme 5 commenced, it was a very busy time at both campuses. During this time the students had their excursions that were compulsory for all the Tourism students at both campuses. The lecturers at both campuses had to plan, organise and accompany the students during these excursions. One of the tourism lecturers at the main campus resigned and it was my responsibility to recruit, interview and select a new lecturer since we did not have a human resource department. My mentee had planned her learning opportunity but I never received it for comment or feedback; it was my mentee's initial request that I review her planning prior to the commencement of an Accounting theme. During my reflection afterwards I noted that, at that stage, my mentee had received enough constructive feedback from the previous learning opportunities.

3.9.5.1 Qualitative analysis: The learning experience

From my mentee's personal documents wherein she recorded the action research process for Accounting Theme 5 I identified that her students were more organised with the A4 plastic folders. When explaining the difference between the two financial statements (balance sheet and income statement), she referred to a video and photograph as example for her students to make the applicable association. She then gave them additional notes with the format of the two statements,

and explained each statement step-by-step by using different colours; she completed the first task with her students on the white board. Her students were required to complete the second task on their own after which she identified each student's individual errors and gave them individual feedback. Assignments 3 and 4 were then completed and students were allowed to help one another if they wanted to. After completion of these assignments her students had to present the answers to the rest of the class.

3.9.5.2 Qualitative analysis: My mentee's observations and reflection

In my mentee's personal recording of the action research process for Accounting Theme 5 she noted that her students acknowledged that they were able to associate the two financial statements with the examples used. Her students preferred the first task to be completed with the guidance of the facilitator (my mentee) on the white board, implementing a step-by-step approach. They were at ease with the template of the format of the two financial statements that they could refer to at any stage.

Additionally, my mentee noted that the repetitiveness of the format was important and she continually asked her students questions with regard to the format of the two financial statements. Her students reacted positively when they were required to share their answers with the class. Group work was, however, minimised even though my feedback encouraged group work and my mentee identified time as the reason.

3.9.6 Group assignment

The group assignment (See appendix K) formed part of the summative assessment for the subject Tourism Management. This assignment covered Accounting Themes 1, 2 and 3 that had been completed. The assignment was given to her students within the first week of the commencement of the second semester. It did not form part of a specific action research cycle for an Accounting theme, but whole brain® strategies were incorporated. The groups were required to complete numbers 1 – 4 of the assignment in their own time and number 5 (the role-play and identification of transactions) during the scheduled lecture. Her students were required to compile transactions that related to various Accounting concepts. Their transactions could relate to any Accounting concepts but they had to include transactions that related to one of the following:

- credit sale

- debtor settling debt (with a discount allowance)
- credit loss
- cash sale
- credit purchase
- settling debt to a creditor

They were instructed to refer to one and the same debtor and one and the same creditor only. Her students had to complete the Accounting equation (Accounting Theme 1), a trial balance (Accounting Theme 2) and journal entries (Accounting Theme 3) of their transactions that were submitted in a written format. The assignment also instructed her students to act out their transactions by means of role-play. One person in the group represented the bank and another one a debtor; it was their decision how they wanted to act out their transactions. While they acted out their transactions by means of role-play, the other groups had to identify the appropriate transactions.

3.9.6.1 Qualitative analysis: Group assignment

My mentee noted in her reflection of the group work that it was a good strategy for her students to engage in the transactions from a different viewpoint and her students enjoyed watching one another. She suggested that role-play should rather form part of informal class assignments as a learning opportunity instead of an assessment since the different viewpoint allowed her students to act outside their comfort zone.

3.9.7 Text analysis: E-mails

During action research of cycle A my mentee and I engaged in various conversations via e-mail. The following extracts from the e-mails that do not directly relate to the Accounting themes, but form part of the peer mentoring, are analysed with regard to whole brain® strategies.

***E-mail from mentor, 19 July 2011, 8:41 AM:** Ek het besluit om Donderdagaand oor te slaap in Klerksdorp sodat ek sommer vroeg by julle kan wees. [I have decided to sleep over in Klerksdorp on Thursday evening in order to be there early].*

In the mail I included my expectations with regard to time-frames for the interviews and the learning opportunity. I requested my mentee to send me a time schedule that would suit her and her students. I requested a venue for the interviews that was private and quiet since I had to record the interviews).

Reply e-mail from mentee, 19 July 2011, 9:05 AM: *Dis 'n goeie besluit om liewer oor te slaap; moet ek vir jou uitvind van 'n plekkie of gaan jy self reël (sic)? [It's a good decision to rather sleep over; do I have to find a place or are you organising it yourself?]*

Moet ek 'n videokamera (sic) bring? Moet ek nog met Liezl reël om die video te maak of gaan ons sommer 'n videokamera (sic) op 'n staander sit? [Do I have to bring a video camera? Do I still have to organise with Liezl to make the video or are we going to place the video camera on a stand?]

My mentee included a structured time-schedule for the day that included the times for her interview, the explanation of the HBDI®s, the learning opportunity and the individual interviews with her students.

Anina se kantoor staan op die oomblik oop – het reeds met Charl gereël (sic) dat jy hom (sic) kan gebruik – sal vir jou lekker verwarmer (sic) aanskakel daar! [Anina's office is empty at this stage – I have already arranged with Charl that you can use it – will switch on a heater for you!].

My mentee's response to this e-mail reflected her primary preference for Quadrants B and C. She took control and arranged venues for the interviews and the learning opportunity and set up the schedule to suit every person involved. She even arranged a heater as it was mid-winter.

E-mail from mentee, 21 July 2011, 12:57 PM: *Kan ek die studente na die tyd vra hoe hulle die aktiwiteite ervaar het, of moet ek met elke aktiwiteit myself so instel deur op te let hoe hulle reageer? [Can I ask the students afterwards how they experienced the tasks, or do I have to observe how they react?].*

Reply e-mail from mentor, 21 July 2011, 01:55 PM: *Ja, jy is meer as welkom! Hulle terugvoer is baie belangrik vir jou refleksie (sic). Jy moet ook kyk hoe hulle reageer (waarneem) – dus definitief albei. [Yes, you are more than welcome! There feedback is very important for your reflection. You also have to observe how they react – thus definitely both].*

I referred to the questionnaire that the mentee’s students had to complete after each Accounting theme (See Appendix G), but noted that she was more than welcome to apply a similar questionnaire after each learning opportunity.

3.10 Data analysis of students relating to action research spiral: Cycle A

The data that was gathered by my mentee’s students during action research cycle A is discussed next.

3.10.1 Semi-structured interviews with the mentee’s students

During my first visit to the Klerksdorp Campus I had the opportunity to meet my mentee’s students, explained their HBDI® profiles and engaged in semi-structured interviews with each student.

3.10.1.1 Qualitative analysis: Semi-structured interviews

The themes (Figure 3.14) that were identified during the semi-structured interviews with the mentee’s students included an HBDI® interpretation, the importance of Accounting, Accounting experience, most preferred subject and the least preferred subject.

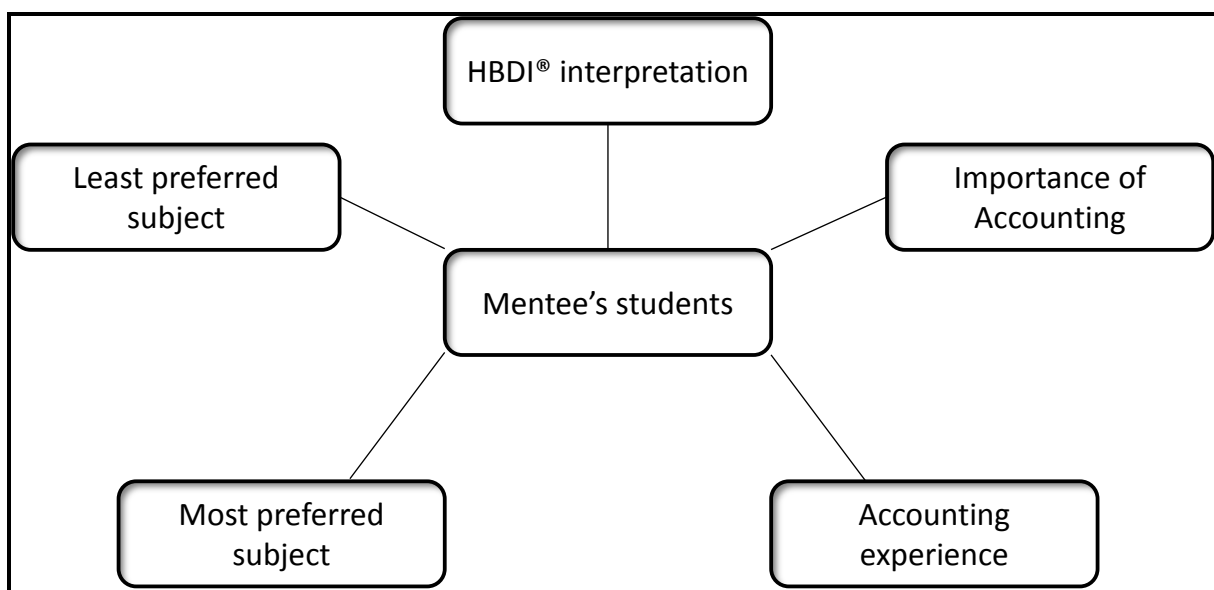


Figure 3.14: Themes identified by students during semi-structured interviews

HBDI® interpretation: During my first visit to the Klerksdorp campus I explained the concept of Herrmann's whole brain® learning and students' individual profiles. After the learning opportunity facilitated by my mentee (See Paragraph 3.9.3) I engaged in individual interviews with her students. During the interviews I requested her students to explain their profiles to me as they interpreted them. In some cases we had informal discussions with regard to the different quadrants where her students' understanding of the quadrant was confirmed. Her students understood their profiles and agreed about their profile preferences.

Male 1 acknowledged that his profile was accurate and that he preferred D to A. He agreed that he would like to confirm his answers (in Accounting exercises) with those of other students when he is in doubt. Male 2 noted that he prefers being around people and likes group work. He agreed that he can easily visualise and he likes to plan. He therefore agreed that his profile was accurate. Male 3 noted that he prefers talking to people. *Ek dink dis so, veral as ek en iemand verskil, dan is dit lekker vir my om daaroor te praat, om te sien hoe iemand anders dit insien en hoe jy dit insien. [I think it is so, especially when I disagree with someone, then I like it to speak about it, to see how someone else interprets it and how I interpret it].* Female 1 acknowledged that she does not really like to study from a book and that she understands a situation better when she can visualise it. Female 2 acknowledged that she is very strong in Quadrant A thinking. Female 3 and 4 interpreted their profile in the sense that it can identify easier ways for them to study, for example, by visualising.

Importance of Accounting: The mentee's students agreed that Accounting is a necessity for Tourism students as it is used in the different tourism sectors, e.g. tour operators, accommodation establishments and events. Male 1, Male 2 and Female 1 pointed out its importance for entrepreneurs and Female 5 mentioned that she had dealt with issues related to Accounting during her experiential learning at a guest house.

Experience of Accounting: I questioned the mentee's students with regard to their general experience of Accounting. Of the seven students, five (Male 1, Male 2, Female 1, Female 2 and Female 3) did not initially like the idea that they had to do Accounting as they had negative connotations with the subject deriving from their school days. Female 1 stated: *Ek het dit op skool gehad, en die juffrou wat dit op skool gegee het, het nie baie goed Rekeningkunde (sic) gegee nie. [I had it at school, and the teacher that taught it in school did not teach Accounting very well].* Male 1 noted that his response, when finding out that they had to do Accounting, was: *... so, ek het*

outomaties 'n vrees gehad ... [... so I automatically was afraid He also noted: ... maar nou dat ek sien ek gaan dit nodig kry, is dit vir my makliker en ek is nou meer volwasse ... [... but now that I have seen that I am going to need it (Accounting), I find it easier and I am more mature ...].

When the interviews were conducted, the mentee's students had already completed Accounting Themes 1 and 2 during the first semester. All of her students stated that they enjoyed Accounting much more than they had anticipated and said that the lecturer (my mentee) used better explanations, scenarios, examples; she implemented steps, and she provided pictures that they could interpret with specific concepts whereas at school the teachers mostly referred to the text book.

It was clear from the interviews that all of the mentee's students respected her and enjoyed her presentations. Her students identified my mentee's step-by-step approaches, pictures, songs that kept their attention, tasks, notes, practical examples, scenarios and PowerPoint presentations as aspects that they enjoyed and preferred most. Other aspects that were identified were the individual attention provided if they did not understand a specific concept; my mentee did not simply give the answer but guided her students to find the answer; she walked around in the classroom and she maintained a positive attitude. Female 1 stated: *Juffrou doen dit mos stap-vir-stap, so dit was vir my lekker en die prentjies ook, en die liedjie wat saam is ook. Dit maak die klas baie lekker (sic). [The lecturer does it step-by-step, so it was fun for me and also the pictures, and also the song. It makes the class enjoyable].* Female 4 also acknowledged the pictures and the music: *... die prentjies, die musiek, sy probeer die musiek gelykstel aan waaroor die werk gaan (sic). So dit trek ons aandag, en dit hou ons aandag op haar. En dan loop sy rond. [... the pictures, the music, she tries to match the music to the content of the work. Therefore it grabs our attention, it focuses our attention on her].* Female 2 noted: *Sy sê meer dinge wat vir my sin maak, sy verduidelik vir ons beter en gee vir ons scenarios (sic) wat sy vir ons skep. Jy kan die prentjie sien, en dan kan ons dit interpreteer [She will say things that make more sense, her explanations are better and she provides scenarios that she creates for us. You can see the picture, and then we can interpret it].* Male 1 stated: *Sy is net meer deeglik; sy gee mens bietjie meer individuele aandag. As jy sê nou maar sukkel met iets, ... dan sal sy jou jou help. En dis iets wat ek dink ek nogal nodig het [Sy is thorough; sy gives you a little bit more individual attention. If you, let's say, struggle with something, then she will help you. And that is something that I think I do need].* Male 2 added: *Sy gee baie individuele aandag, en sy sal jou help as jy sukkel. [She gives a lot of individual attention, and she will help you when you struggle].*

All the mentee's students agreed that the presentation of a subject can be done in such a way that all students enjoy it, irrespective of whether students like or dislike the subject. Appropriate planning and a positive attitude towards the subject and students were identified as some of the requirements for an enjoyable presentation.

Most preferred subject: Of the seven students, six identified Tourism Destinations as their favourite subject. My mentee was their lecturer for this subject as well, and her students indicated the use of photographs, music related to the different destinations and cultures and their ability to visualise the destinations as reasons for enjoying this subject.

Least preferred subject: The subject that they preferred least, as five of the seven students indicated, was Tourism Events; her students indicated that the text book contained many facts that were of no interest to them. In general, their preferences as indicated matched their group profile of 2111. Tourism Events relies on text book references only (Quadrant A thinking) whereas Tourism Destinations, as identified by her students, includes Quadrant C and D strategies.

3.10.2 Quantitative analysis: Students' feedback of the learning experiences

The mentee's students were required to complete a short questionnaire (See Appendix G) after the completion of each theme. The completed questionnaires were sent to me via courier service. The data from these questionnaires is a reflection and perception of her students' observations regarding whether my mentee implemented whole brain® strategies related to each quadrant.

The questions related to Quadrant A refer to text book and notes; those relating to Quadrant B refer to the usage of practical examples, quadrant C-questions refer to group discussions and quadrant D-questions to spontaneous and fun presentations. The number of students for each theme was Accounting Theme 3, N = 7, Accounting Themes 4 and 5 N = 6; this was due to the one student that discontinued her studies.

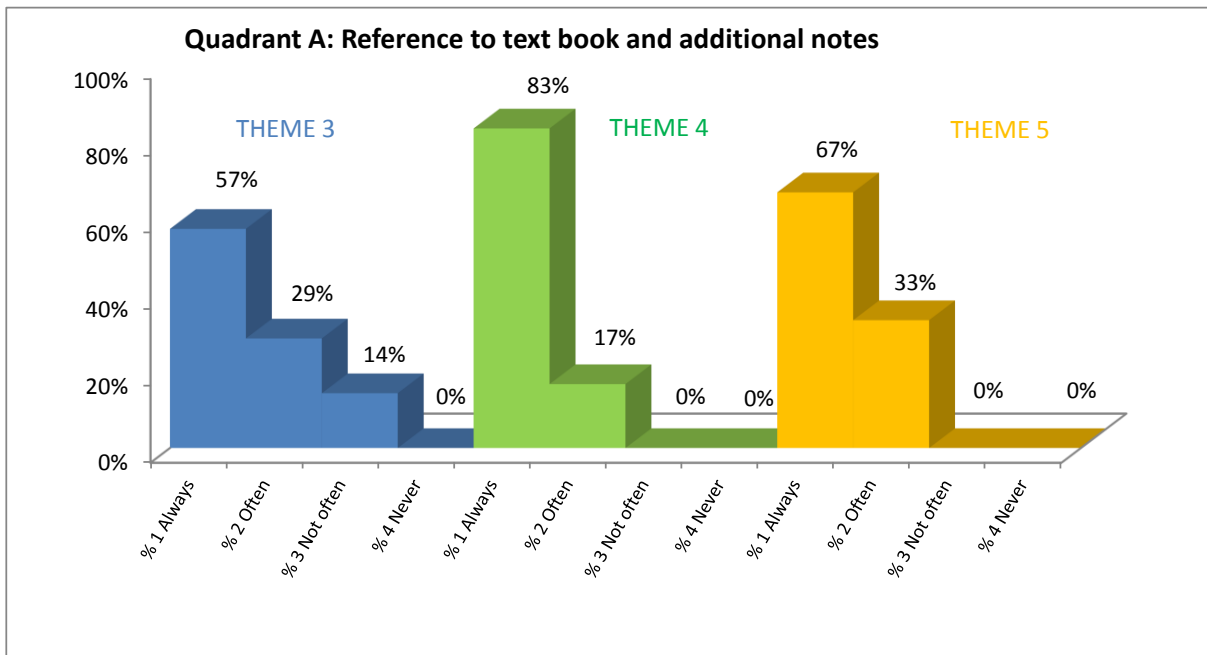


Figure 3.15: Reference to text book and additional notes

In Figure 3.15 it can be seen that, according to most of the mentee’s students, my mentee referred to notes and the text book. In Accounting Theme 3 the student with profile 1221 indicated that my mentee did not often refer to notes and the text book – an aspect that is preferred by a person with a primary preference for Quadrant A. This particular student was the only student with a preference for Quadrant A thinking.

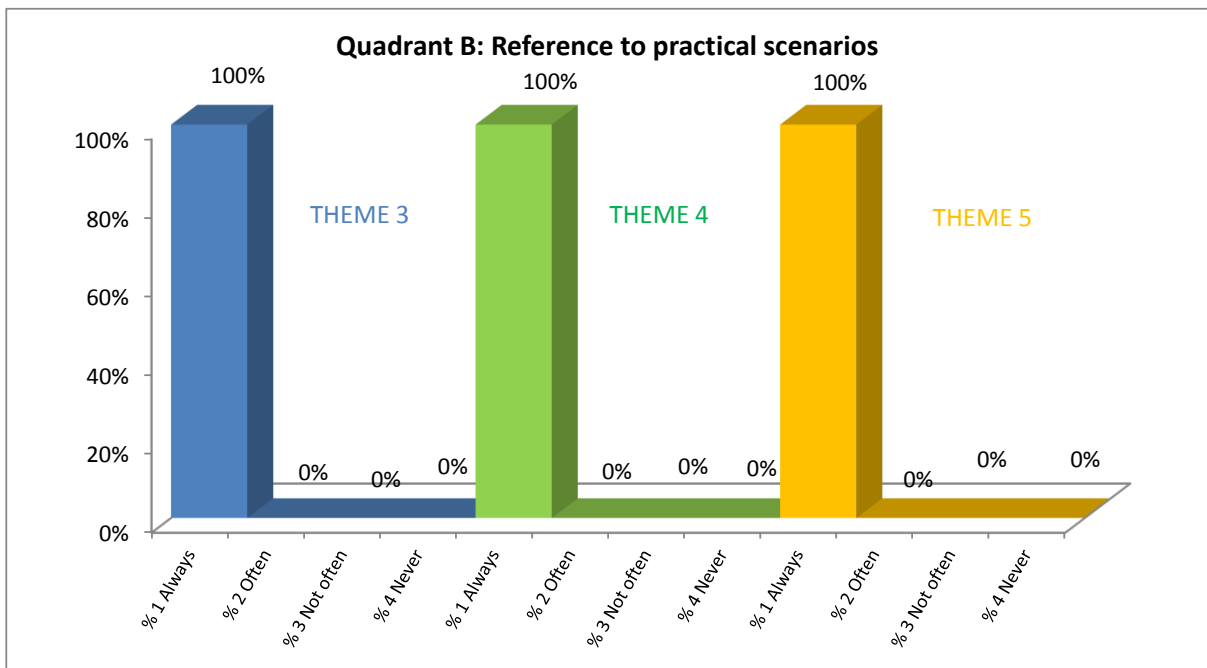


Figure 3.16: Reference to practical scenarios

According to her students, my mentee consistently applied practical examples during each Accounting theme's learning experiences as seen in Figure 3.16.

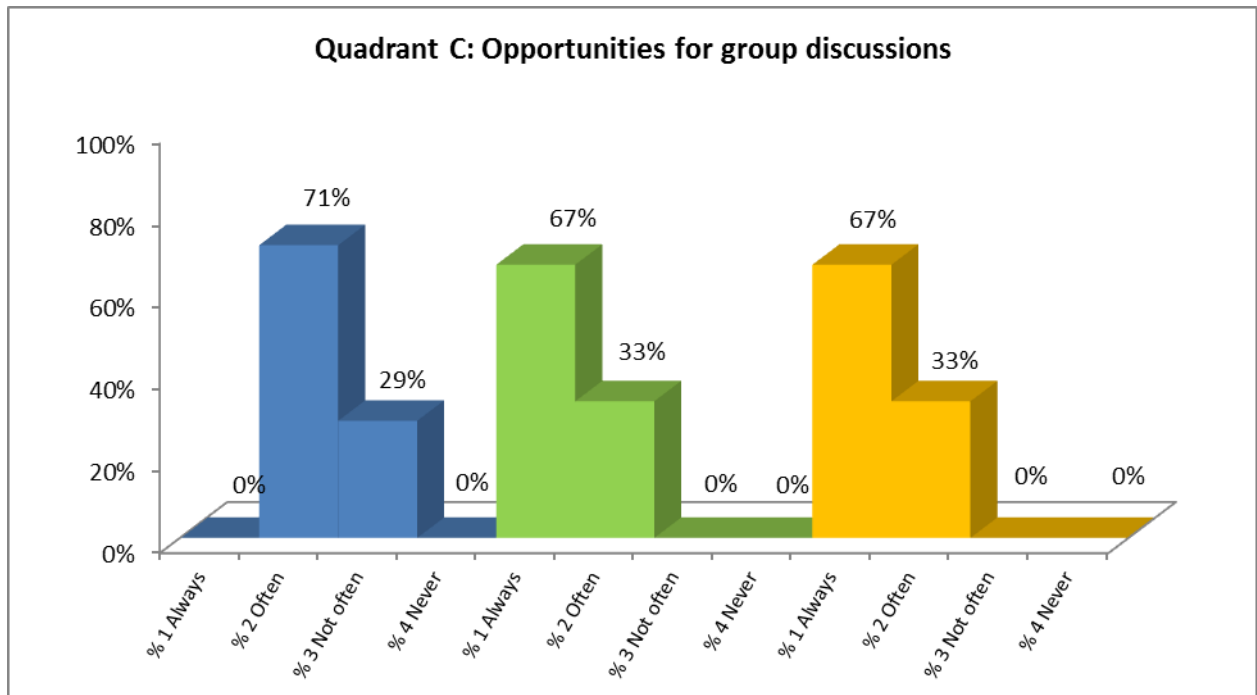


Figure 3.17: Opportunities for group discussion

In Figure 3.17 it can be seen that for Accounting Theme 3, 71% of the mentee's students indicated that my mentee often allowed opportunities for group discussion compared to 67% who indicated that opportunities for group discussion were always provided during Accounting Themes 4 and 5.

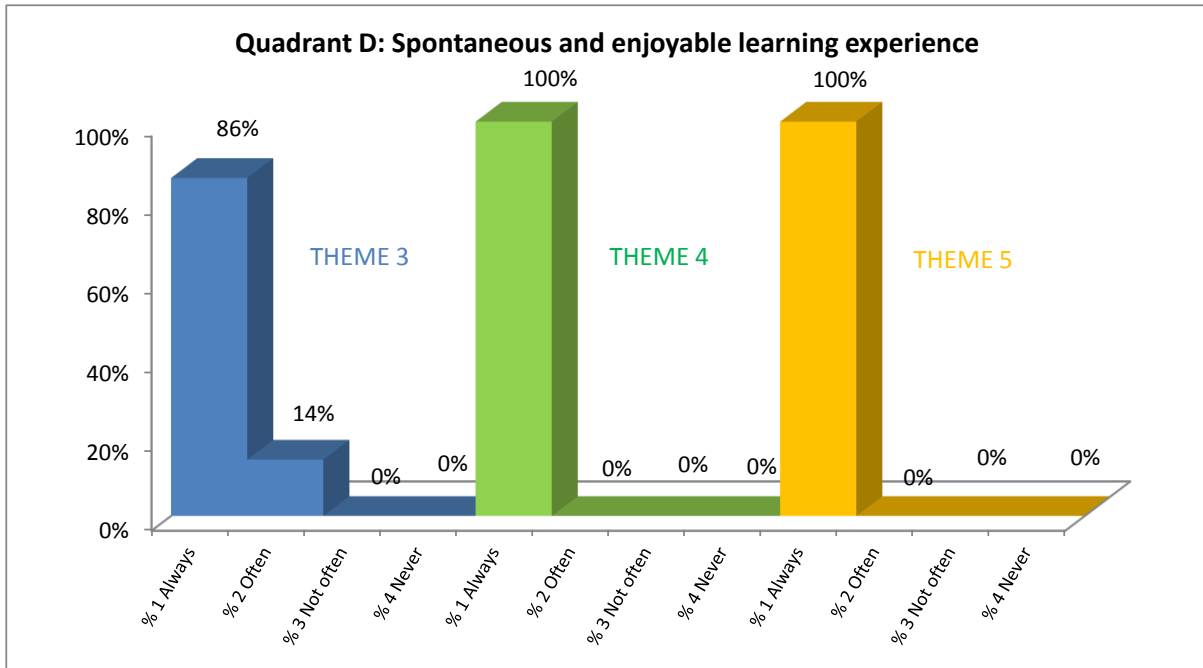


Figure 3.18: Spontaneous and enjoyable learning experience

Figure 3.18 indicates that the mentee's students overall experienced the learning experiences as enjoyable and spontaneous.

According to her students' feedback (comparing Figures 3.15, 3.16, 3.17 and 3.18) my mentee engaged in whole brain® learning during each Accounting theme; this is also reflected in Figure 3.19. She referred to notes and text books (Quadrant A), applied practical scenarios (Quadrant B), allowed opportunities for group discussion (Quadrant C) and her students perceived the learning opportunities as enjoyable and spontaneous (Quadrant D). However, in studying her students' feedback with regard to whole brain® opportunities my mentee always (100% of the time) applied practical scenarios (Quadrant B) and her students always enjoyed (Quadrant D) the learning experiences (98% during Accounting Theme 3 and 100% during Accounting Themes 4 and 5). During Accounting Theme 3 71% of her students perceived that my mentee often allowed group discussion whereas 29% indicated that she did not often allow group discussions (Quadrant C). During Accounting Themes 4 and 5 67% of her students indicated that my mentee always allowed group discussion and 33% indicated that she did not often allow opportunities for group discussion (Quadrant C). Only 57% of her students indicated that my mentee always referred to notes and the text book during Accounting Theme 3 compared to 29% who indicated that she often referred to these and 14% indicated that she did not often refer to notes and the text book. During Accounting Themes 4 and 5 83% and 67% of her students respectively indicated that my mentee always referred

to notes and the textbook and 17% and 33% respectively that she often referred to the notes and text books. From this statistical feedback it can be seen that from her students' perspective, even though they indicated a whole brain® learning experience, Quadrant B and Quadrant D learning opportunities were continuously focused on and on Quadrant C and Quadrant A only in certain circumstances. Her students' acknowledgement with regard to group work correlated with my mentee's admittance that she was reluctant to use group work as a whole brain® strategy (See Paragraph 3.14.1.1).

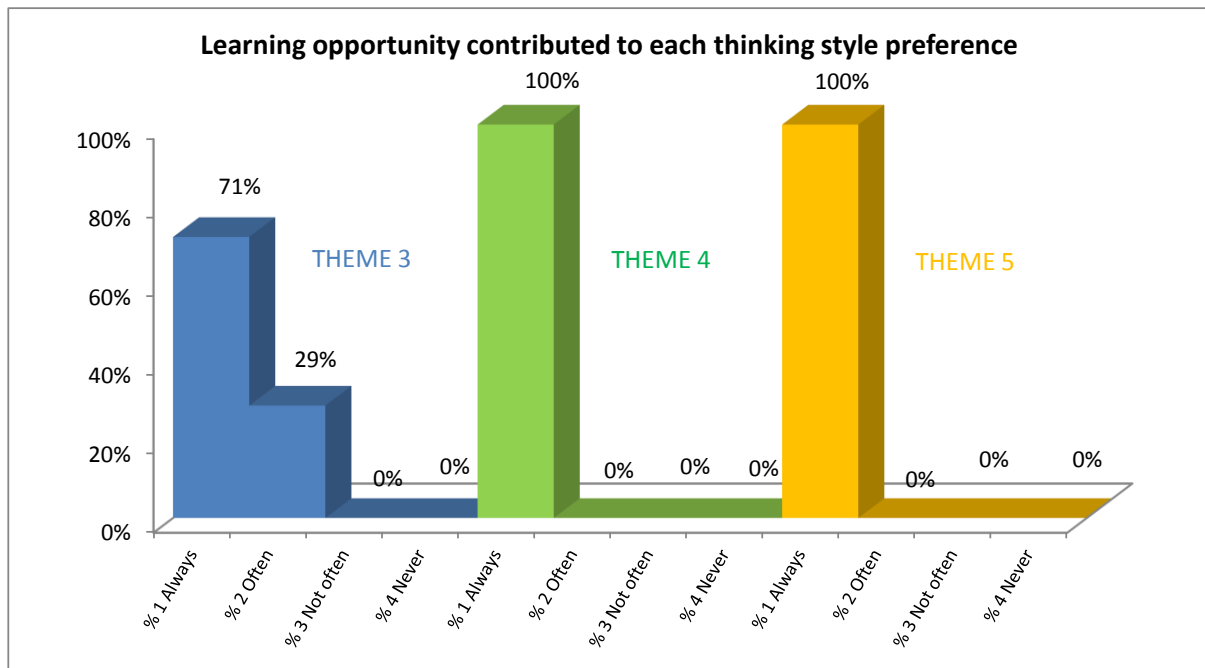


Figure 3.19: Learning opportunity contributed to each thinking style preference

Figure 3.19 shows the statistical feedback from her students that indicates that my mentee provided learning opportunities that accommodated learning style flexibility. There were two students that indicated in Accounting Theme 3 my mentee often (and not always) accommodated learning style flexibility. One of these students was the student with profile 1221 who indicated that my mentee did not refer very often to notes and the text book. In this regard she might have felt that my mentee did not adequately accommodate Quadrant A thinking. The feedback with regard to Accounting Themes 4 and 5 indicates that her students were satisfied with the learning experiences and felt that they contributed to accommodating learning style flexibility – even though they had indicated in general that Quadrant A and Quadrant C learning opportunities were lacking compared to those relating to Quadrant B and Quadrant D.

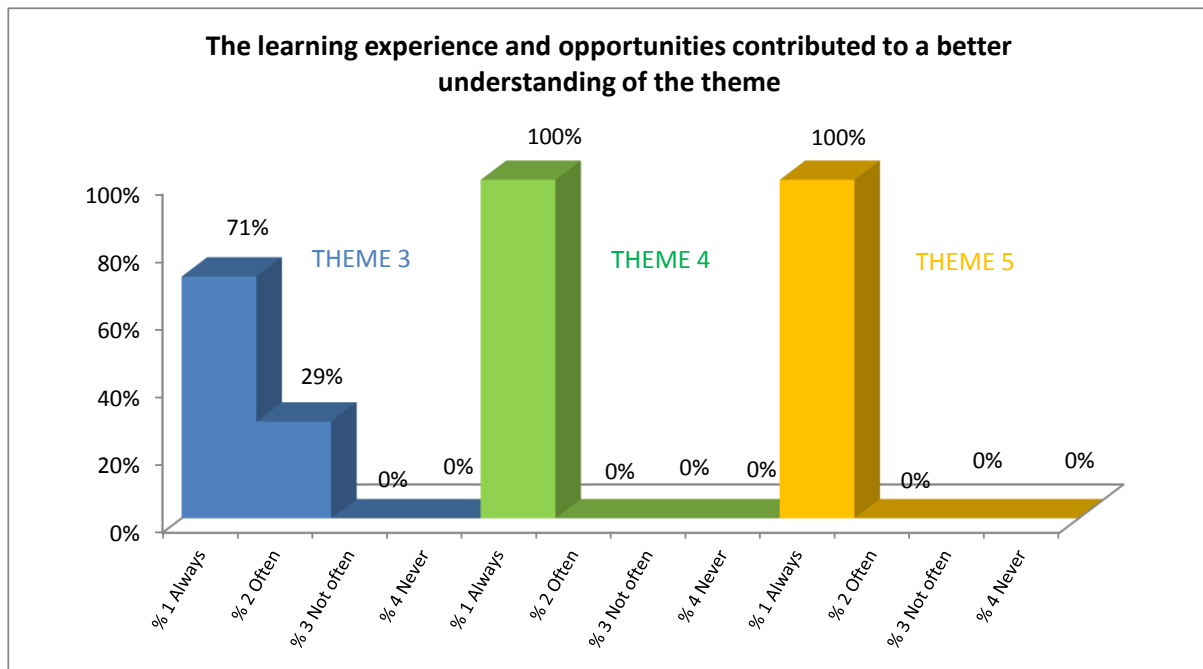


Figure 3.20: Learning opportunities contributed to a better understanding of the Accounting theme

Figure 3.20 provides an indication of whether the learning opportunities contributed to her students' understanding of Accounting concepts related to the specific Accounting themes. In this regard the student that indicated that my mentee did not often refer to the notes and the text book and therefore did not often contribute to learning style flexibility, indicated that the learning opportunities always contributed to her better understanding of Accounting concepts related to the Accounting theme. The one student that indicated that the learning opportunities often contributed to his understanding of the concepts noted that the explanation of concepts was too long in some cases.

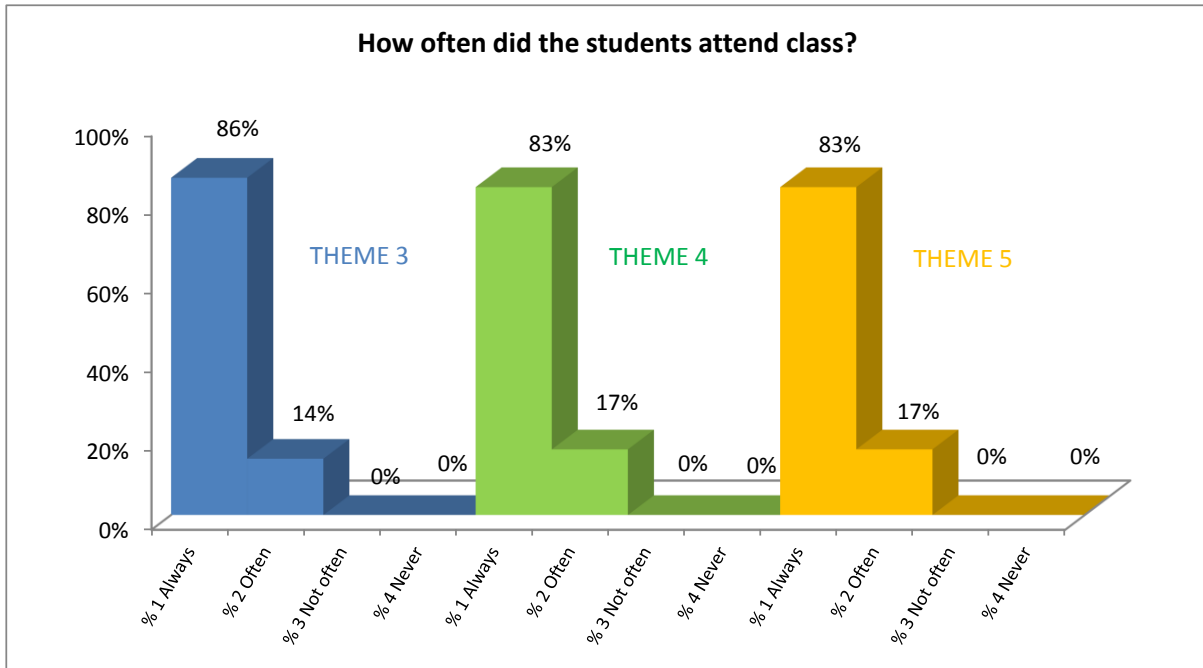


Figure 3.21: Class attendance

The mentee's students' class attendance complemented their interpretation of the learning opportunities. A student that did not attend class very often might have missed a specific learning experience and therefore might not necessarily have experienced the true nature of the whole brain® learning experience. In this regard most of her students always attended all the learning opportunities (Figure 3.21). Only one student (the same student throughout) indicated that he often attended class, whereas all the other students always attended class.

3.10.3 Quantitative analysis: Students' marks

The mentee's students completed the following formative and summative assessments in the second semester:

FORMATIVE ASSESSMENTS

- Class test Accounting Theme 3
- Class assignment Accounting Theme 4
- Class assignment Accounting Theme 5

The mentee's students completed the class assignments individually but were allowed to refer to their notes and text books; this could be regarded as a traditional open book test. The class test, however, required no reference to any text book or notes.

SUMMATIVE ASSESSMENT

- Group assignment (Accounting Themes 1, 2 and 3); (See Appendix K)
- Semester test (Accounting Themes 3, 4 and 5)
- Examination (this included Guest House Management)

The assignment discussed in Paragraph 3.9.6 was completed in groups. One student was absent and completed the assignment individually when he returned to the campus.

The marks for the assessments are summarised in Table 3.5.

Table 3.5: Summary of assessment marks during the study

Assessment	Min.	Max.	Mean	Std. Dev.	Median	Variance
Class test Accounting Theme 3	48	98	72,571	18,753	80	351,674
Class assignment Accounting Theme 4*	58	96	82,8	13,422	90	180,16
Class assignment Accounting Theme 5**	58	94	86,5	13,213	91	174,583
Group assignment	65	94	83,857	9,031	85	81,551
Semester test	64	100	78	13,223	72	174,857
Examination	55	97	72,714	14,190	71	201,347

N = 7; *N = 5; **N = 6

When the mentee's students completed Class Assignment 4, two students were absent without a reason (therefore N = 5) and on completion of Class Assignment 5, one student was absent without a reason (therefore N = 6). Centurion Academy's policy states that students that are absent without reason are awarded 0%. The 0% in this regard was not statistically calculated, as it would not provide a true reflection of the actual marks.

With only seven students it cannot be statistically inferred that the implementation of whole brain® learning had an influence on their marks. The standard deviation is higher, due to the population

being low – if one student out of seven scored a lower mark, the effect would be much higher statistically than in a case where the sample is higher.

The only two marks that can be compared with the marks of 2010 are those of Class Assignment 4 and Class Assignment 5. Those assessments were similar and covered the same work. The average (mean) for Class Assignment 4 in 2010 was 82% (N=6) compared to 83% in 2011 (N=5). The average (mean) for Class Assignment 5 in 2010 was 79% (N=6) compared to 87% in 2011 (N=6). The other themes' assessments could not be compared as the assessments were not similar. It is also imperative to note that, in 2010, the subject Tourism Management consisted only of Accounting and Front Office Theory and Accounting. Effective Guest House Management was introduced in 2011; Front Office Accounting was incorporated in the Effective Guest House Management module. Therefore, in 2011, the time allocated for each Accounting theme was less than it was in 2010. Even-though statistics cannot reflect a correlation between whole brain® learning and student marks, the mentee's students regarded the learning experiences as highly positive and her students exceeded their own expectations.

3.11 Mentor reflecting on action research spiral: Cycle A

In my reflective journal I identified three separate aspects when I reflected on action research cycle A.

During the semi-structured interview with my mentee (See Paragraph 3.9.2.1) she requested a face-to-face visit after completing Accounting Themes 3 and 4. This meeting never took place, and my first response was that it was due to time-constraint factors; time was also identified as the major obstructive factor in the mentoring relationship. However, I should have planned a possible time for the meeting or I should have asked my mentee whether she still wanted to meet as it had been her request.

My mentee questioned me with regard to how she should observe her students' actions (See Paragraph 3.9.7). In this regard I informed her that she had to question her students and that she had to record her own observations. However, according to my mentee's personal documentations (See Appendices I, J and K) she recorded only her own observations. An additional mentoring session in this regard should have been arranged (before Accounting Theme 3 commenced – or during my visit to the Klerksdorp campus) where I could have assisted my mentee in this regard.

In the cases where group work had been planned it usually turned out as individual work. My mentee reflected after completing Accounting Theme 5 that time was an issue since her students had limited time for completing an Accounting theme and she wanted to use to time optimally; and during Accounting Theme 4 the group work confused some of her students, which led to their stressing about the work. A suggestion with regard to group work deriving from her reflection was that group work should be done at the end of a theme, once students showed that they were confident about the related concepts. Therefore, even though my mentee planned strategies to accommodate learning with regard to Quadrant C, she did not focus on facilitating group work.

3.12 Action research spiral for mentor: Cycle B

This action research cycle involved a second visit to the Klerksdorp campus and final interviews with my mentee and her students.

3.12.1 Replanning to transform mentorship practice by incorporating the principles of whole brain[®] learning

I planned the second visit to the Klerksdorp campus after my mentee had completed the Accounting themes; it was scheduled for 19 October 2011. The final learning opportunity that I observed was based on Accounting Themes 1 and 2 that were initially completed before commencement of the study. The visit took place a week prior to their final examination, therefore Accounting Themes 1 and 2 were revised. My mentee incorporated Accounting Theme 3 with these two Accounting themes since the three Accounting themes were interconnected.

Deriving from both of our reflections (3.11) on action research cycle A, I requested my mentee to plan and facilitate the final learning opportunity with the focus on group work.

The data collection methods and data gathering for this cycle included the following:

- Semi-structured interview with my mentee – it was completed during my final visit to the Klerksdorp campus.
- Field notes of observing the final learning opportunity.
- Group interview with my mentee's students.

- My own documents: these included a reflective journal and e-mails. I had kept a continuous record of these documents.
- My mentee’s documents: this included my mentee’s reflective journal, her action research process per Accounting theme, and examples of assessments and assignments.
- Video recordings of the learning opportunity that I attended at the Klerksdorp campus.

3.12.2 Using the whole brain® principles during action research cycle B

Table 3.6 constitutes the whole brain® strategies used in the mentoring relationship in action research cycle B. De Boer, Bothma, Du Toit and Scheepers (2012), and Oosthuizen (2001) posit expectations of students in different quadrants that were adopted as possible expectations of my mentee. Some of the strategies pertaining to one quadrant overlapped with other quadrants. Examples and the data analysis of these strategies are explained in Paragraph 3.13, unless specified differently.

Table 3.6 Whole brain® strategies in the mentoring relationship – action research cycle B (adapted from De Boer, Bothma, Du Toit & Scheepers 2012, and Oosthuizen 2001)

Expectations of mentee	Strategies of mentor
Quadrant A	
<ul style="list-style-type: none"> • Purpose • Concrete information • Clear objectives 	<ul style="list-style-type: none"> • The purpose and objective of the learning opportunity, to focus on group work, was communicated with my mentee (Quadrant C). • I based the purpose and objective of the learning opportunity on concrete information that was derived from reflecting on action research cycle A.
Quadrant B	
<ul style="list-style-type: none"> • Detailed outlines • Clear instructions • Step-by-step processes • Organised consisted approach • Staying on track and on time, making time management schedules • Wanting to follow directions and not wanting to try something in a different way 	<ul style="list-style-type: none"> • My mentee received and adhered to the instructions with regard to expectations for the final learning opportunity. • A time-schedule was planned for the learning opportunity and interviews. • My mentee kept record of her planning, acting, observations and reflections. • I kept records of my observations and reflections. • I engaged in the practical application of whole brain® learning in the mentoring relationship.

	<ul style="list-style-type: none"> • My mentee engaged in the practical application of whole brain® learning in her Accounting class.
Quadrant C	
<ul style="list-style-type: none"> • Team project • Hands-on tasks • Sharing of personal reactions • Qualitative research • Expressing feelings • Moving around (kinaesthetic) • Respect for and from mentor • Personal connection with mentor • Emotional involvement • User-friendly learning experience 	<ul style="list-style-type: none"> • I had the opportunity to interact with the lecturers and students on the Klerksdorp campus during my visit. • My mentee and I maintained a good relationship. • During this visit my mentee and I engaged in an informal discussion with the other Tourism lecturers with regard to the whole brain® concept. • Blended mentoring maintained a user-friendly mentor relationship that overcame the challenge of a long-distance mentor relationship. • The atmosphere remained positive under all circumstances throughout the study (which added to the mutual respect that both my mentee and I had for each other). • My mentee and I reflected on our personal experiences.
Quadrant D	
<ul style="list-style-type: none"> • Freedom to explore • Quick pace and variety • Opportunity to experiment • New ideas and concepts • Taking initiative and getting involved • Thinking about the future • Coming up with something new • Relying on intuition 	<ul style="list-style-type: none"> • Even-though I gave my mentee instructions with regard to the final learning opportunity (Quadrant B), she had to take the initiative to experiment with new ideas and concepts that she had to incorporate in the learning opportunity. • Future action research to explore was identified by both my mentee and me.

Quadrant A: The purpose and objective of this learning opportunity was derived from reflecting on action research cycle A, which is elaborated on in Chapter 4. The main purpose was to focus on group work.

Quadrant B: My mentee and I arranged a day that suited both of us and a time-schedule was set-up by my mentee for the interviews and the learning opportunity. During this learning opportunity I recorded my observations.

Quadrant C: My mentee and I maintained our good relationship and friendship, which could have been a challenge due to the long distance between us.

The three Klerksdorp Tourism lecturers who included my mentee and I engaged in an informal group discussion with regard to whole brain® thinking and learning. The other two lecturers became curious and found it quite interesting.

Quadrant D: I gave my mentee instructions with regard to the final learning opportunity (Quadrant B) but it was her responsibility to experiment with new ideas and concepts that she had to incorporate in the learning opportunity.

Both my mentee and I identified future action research possibilities within our respective practices. Chapter 4 provides examples and an analysis of the data that was collected with regard to these whole brain® strategies.

3.12.3 Observation

I was part of action research cycle B; although I did not constantly play an active part during observations, I might have been present. I did, however, observe and report on the experiences. The observations during this action research cycle included the quantitative and qualitative data that I gathered by means of the following:

- Documents that I had kept (See 3.12.1).
- Documents of my mentee (See 3.12.1).
- Semi-structured interview with my mentee.
- Group interview with my mentee's students.
- Video recordings of the lecture that I had attended.

3.12.4 Reflecting on action research cycle B

My reflection on action research cycle B, recorded in my reflective journal, was based on the following:

- Self-reflection on the mentoring process (my own learning during this cycle).
- Reflection on observations and assessments made regarding my mentee's learning opportunity.
- Reflection on the effectiveness and challenges of long distance mentoring, especially with regard to blended mentoring.

- Reflecting on the effects of my own thinking style preference and the influence it had on the mentoring process; and on how I followed a whole brain® approach and what I could have done differently.

3.13 Action research spiral for mentee: Cycle B

My mentee had to incorporate group work in her final learning opportunity, which formed part of my mentee's action research cycle B.

3.13.1 Replanning to transform teaching practice by incorporating the principles of whole brain® learning

After our respective observations and reflection (Paragraph 3.11) derived from action research cycle A, I informed my mentee of the one requirement that I wanted her to incorporate for the final learning opportunity. My mentee still had to plan whole brain® strategies for this learning opportunity based on group work. As previously mentioned, this learning opportunity focused on Accounting Themes 1, 2 and 3.

My mentee's planning included the following:

- Strategies in accordance with the Herrmann whole brain® model that she applied during the learning opportunity; she used the data derived from the HBDI®, taking group work into consideration.
- Planning facilitating the learning opportunity.
- Designing tasks that were in alignment with the Herrmann whole brain® model based on Accounting Themes 1, 2 and 3 as revision for the final examination.

3.13.2 Using the principles of whole brain® learning during learning opportunity

My mentee incorporated group work and used methods to enhance whole brain® thinking and learning. The aspects she considered at this stage included the following:

- She designed and developed strategies for the final learning opportunity that represented whole brain® thinking.
- She acted as facilitator and assisted her students only upon their request.

Table 3.7 summarises the whole brain® strategies used in my mentee’s Accounting class. Examples and data analysis for these strategies are provided in Paragraph 3.13 and 3.14 (unless differently specified). De Boer, Bothma, Du Toit and Scheepers (2012), and Oosthuizen (2001) posit expectations of learners in different quadrants that were kept in mind when my mentee planned the strategies.

Table 3.7: Whole brain® strategies to facilitate teaching and learning – action research cycle B (adapted from Oosthuizen 2001 and De Boer, Bothma, Du Toit & Scheepers 2012)

Expectations from mentee’s students	Strategies of facilitator (mentee)
Quadrant A	
<ul style="list-style-type: none"> • Challenging problems to solve • Concrete information • Clear objectives • Precise, to the point information • Theory and logical rationales • Textbook readings • Quantifiable numbers 	<ul style="list-style-type: none"> • Her students were required to refer to their text book when they completed assignments (Quadrant B). • Her students were required to refer to the additional notes when they completed assignments (Quadrant B).
Quadrant B	
<ul style="list-style-type: none"> • Well-structured tasks • Clear instructions • Step-by-step processes • Repetition • Staying on track and on time, making time management schedules • Wanting to follow directions and not wanting to try something in a different way 	<ul style="list-style-type: none"> • My mentee planned the execution of this learning opportunity by means of a step-by-step approach. • The Accounting themes and concepts were repeated so that her students revised the Accounting themes. • Students were required to complete the well-structured assignments. These had to be completed in sequence (starting with the assignments for Accounting Theme 1, followed by the respectively assignments for Accounting Themes 2 and 3). • Her students had a certain time-frame in which they had to complete the assignments.
Quadrant C	
<ul style="list-style-type: none"> • Group discussion and involvement • Small group discussions • Music • Sharing ideas • Doing role-play or physical acting out • Learning by teaching others • Moving around (kinaesthetic) 	<ul style="list-style-type: none"> • Students were required to complete assignments in groups. • Each group (there were three groups) was responsible to explain one Accounting theme’s assignments (when completed) to the other groups. • In the cases where a group did not understand a particular Accounting

<ul style="list-style-type: none"> • Hands-on learning • Respect for and from others • Personal connection with lecturer • Emotional involvement • User-friendly learning experience 	<p>concept, my mentee facilitated those groups individually (personal and individual attention was provided).</p>
<p>Quadrant D</p>	
<ul style="list-style-type: none"> • Surprising and playful approaches • Discovering of the content • Freedom to explore • Quick pace and variety • Opportunity to experiment • New ideas and concepts • Taking initiative and getting involved • Brainstorming • Playing with new ideas • Coming up with something new • Relying on intuition 	<ul style="list-style-type: none"> • This learning opportunity was something new to her students as they had to explain the work in groups to the other students. • My mentee did not give instructions on how her students had to present their chosen themes; they could use their own ideas in this regard.

Quadrant A: Students had to refer to their text book and additional notes when completing assignments or when they prepared for assessments.

Quadrant B: My mentee planned the execution of this learning opportunity by means of a step-by-step approach. This learning opportunity entailed revision of Accounting Themes 1, 2 and 3 in preparation for the final examination.

Quadrant C: The mentee's students were required to work in three groups (two students per group – one student was absent). The groups had to choose an Accounting theme that was their responsibility.

Quadrant D: The mentee's students had to present their Accounting themes using their own ideas.

3.13.3 Observation

The data that gathered for my mentee's purposes included the following:

- Documents; my mentee recorded her observations of the learning opportunity.
- My mentee's reflective journal.
- Video recording and feedback from the mentor.

3.13.4 Reflecting on the final learning opportunity

- Reflection by my mentee included the following:
- Reflection on the learning opportunity.
- Reflection on the mentor relationship and her professional development.

3.14 Data analysis of the mentor and mentee's action research spirals: Cycle B

The data that was gathered during action research spiral B included the final semi-structured interview with my mentee and an observation of a learning opportunity that had to be based on group work.

3.14.1 Semi-structured interview 2: Mentor and mentee

The final semi-structured interview was conducted during my final visit to the Klerksdorp campus. My mentee and I confirmed a date that suited both of us and her students during the last week of September. The visit included an observation of my mentee's lecture; revision was done for Accounting Themes 1, 2 and 3; see Paragraph 3.14.2), a semi-structured interview with my mentee (Paragraph 3.14.1) and group interviews with my mentee's students (Paragraph 3.15.1). My mentee took control of the arrangements with regard to the time-schedule and venues for the interviews and learning opportunity.

3.14.1.1 Qualitative analysis: Semi-structured interview 2 and my mentee's reflective journal

The themes (Figure 3.22) that were identified during this interview included whole brain® learning, group work, the way forward, professional development and mentor relationship. These themes were addressed by my mentee in her respective reflective journals. The data analysed therefore include data from the semi-structured interview and data from my mentee's reflective journal.

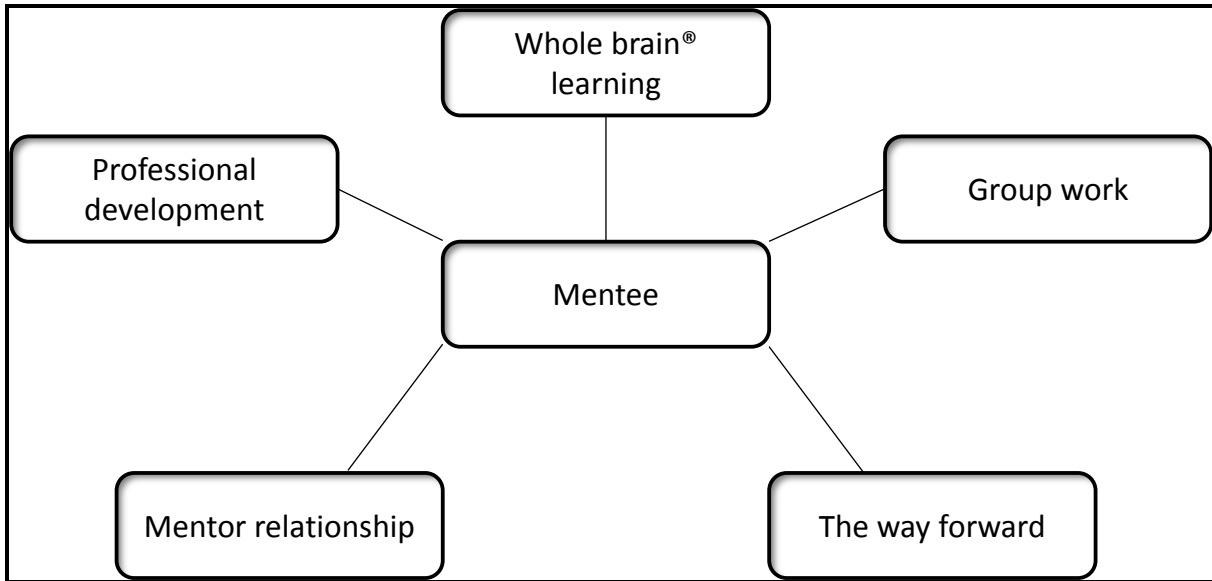


Figure 3.22: Themes identified by mentee during semi-structured interview 2

Whole brain® learning: My mentee regarded whole brain® learning as a mind-shift, a challenge, and a motivation to accommodate all the thinking style preferences. She acknowledged that she had to focus on her least preferred quadrants to accommodate students with preferences in those quadrants.

My mentee noted that, for every Accounting theme, she followed the same whole brain® strategies to accommodate all thinking style preferences. She compiled tasks that her students had to complete, she incorporated steps, she seldom referred to the text book (she mostly referred to her students' additional notes), and she used colour or a presentation with which her students could make an association. She noted that she printed a front page for every Accounting theme with a plastic folder that allowed her students to keep all their applicable notes relating to one Accounting theme together.

A positive aspect that my mentee identified with regard to whole brain® learning was the use of various methods or strategies that made the lectures interesting. Therefore no lecture was the same as the previous one, since she approached every Accounting theme differently.

My mentee identified the recordings of the whole brain® strategies as frustrating. *Want al wat vir my sleg was, is as 'n mens dit heeltyd op papier moet sit [Because, the only thing I found frustrating, was to record it all the time].* She noted that she might have planned something, which might have

changed on the spur of the moment. *So, dit was moeilik, want jy het 'n riglyn gehad vir die beplanning maar op die einde van die dag as jy dit uitgevoer het, het daar dinge (sic) bygekom. [So, it was difficult, because you had a guideline of the planning, but at the end of the day when you performed it, some additions were made].*

My mentee indicated that she was able to read her students' emotional minds, especially due to them being a smaller group of students. She stated: ... *As hulle die dag moeg is, moet jy hulle emosioneel optel ... jy moet eers hulle gemoed optel anders kan jy niks met hulle uitgerig kry nie ... [... If they are tired, you have to uplift them emotionally ... you have to uplift their mind otherwise you will not be able to accomplish anything with them ...].*

My mentee acknowledged her students' experience of whole brain[®] learning in the sense that they enjoyed it and they regarded it as a challenge. *Hulle kon grappe maak daaroor en mekaar – nie spot nie – maar grappies maak oor 'ek dink in hierdie kwadrant en jy hou van ...' So dit was lekker, die interaksie was lekker [They were able to joke about it and they – not teased – but joked with one another with regard to 'I think in this quadrant you like ...' So it was fun, the interaction was also enjoyable in the class].*

Group work: My mentee acknowledged that in some cases she planned a group discussed that ended up as individual work. *En dan met die groepsbespreking het ek bietjie swaar getrek want ek is nie so ingestel om die heeltyd groepsbesprekings te doen nie. So dit was vir my wat ek voel ek kan op verbeter, want die groepsbesprekings – jy kom in die klas en jy beplan om 'n groepsbespreking te doen en as jy weer sien is dit weer elkeen individueel [And then the group discussions were tough because I am not in that way established to perform group discussions the whole time. So it was something that I felt I could improve, because group discussions – you arrive in the class and you plan to perform a group discussion and then you see it was again everybody individually].* My mentee admitted that it was mainly due to the fact that she did not facilitate the groups as she had never been group oriented in the Accounting module and it made her feel as if she was not in control of the learning opportunity (typical of her profile analysis). She also noted the following constraining factors in her reflective journal: *Groepswerk (sic) het nie altyd uitgewerk soos ek beplan het nie. Dis moeilik met Rekeningkunde om studente in groepe te laat werk omdat mens dan nie kan bepaal watter studente met die werk sukkel nie. Een ou in die groep doen al die werk en die ander skryf net af. Weereens is tyd hier 'n faktor omdat groepswerk meer tyd vereis as werk wat individueel gedoen word [Group work did not always work out as I planned it. It is difficult with Accounting to let*

students work in groups since you cannot determine which students have difficulties with the work. One person in the group completes all the work and the others just copy. Time is again a factor in this regard since group work requires more time than work that is completed individually]. She therefore found it difficult to identify which students understood the work and which ones still struggled with some of the concepts.

A suggestion with regard to group work derived from my mentee's reflective journal was that group work should be done at the end of a theme, once students showed that they were confident in applying the related concepts. My mentee noted that, even-though she did not favour group work, it was imperative to focus and plan group work because it would transform the way in which her students interpreted the concepts and it would force her students to view the concepts from a different angle.

The way forward: My mentee indicated that she would continue applying whole brain® facilitation in her Accounting class and that she would also apply it in the other five subjects that she offers. She noted that she would find it interesting to apply whole brain® learning in a theoretical subject after applying it in a practical subject. She regarded whole brain® facilitation as an eye-opener that allowed her to think laterally; it also guided her into another direction – the direction of professional development. Therefore she would recommend that each lecturer engage in action research and whole brain® facilitation, even if the students and the lecturers do not complete the HBDI® – all four quadrants should be stimulated. She suggested that a manual (or blue print) summarising the quadrants could be issued to the lecturers. Since my mentee regarded time as a constraint, she suggested that the observation phase and the reflection phase of the action research process could be combined. In addition to these suggestions, she added that the lectures receive a basic format of the planning phase, as guideline, where they can complete their own preparation with regard to quadrants A, B, C and D.

Professional development: My mentee stated that action research contributed to her personal professional development and she regarded the planning phase as the most helpful to her. It reminded her constantly to plan differently (especially with the implementation of whole brain® strategies). She acknowledged that if one continues preparing the same work over and over year after year there will be no personal growth.

My mentee noted the following with regard to whole brain[®] facilitation: *Dit sal goed wees as mens vir ander mense in 'n beroep net daarvan bewus maak ... want dis 'n nuwe ervaring en nuwe goed wat jy doen [It will be good to create awareness for others in a profession, because it is a new experience and new things that one does].*

Mentor relationship: My mentee valued the constructive feedback with regard to the action research process, especially since she acknowledged me as a peer (we offered the same subject) as it guided her into shifting her mind in a different direction – lateral thinking. The feedback therefore guided her and constantly reminded her of the whole brain[®] strategies. She acknowledged that she had the confidence to contact me (telephonically or via e-mail) whenever she wished to and appreciated the open communication channel that was maintained.

My mentee noted that she acknowledged a whole brain[®] approach towards our mentor relationship especially with regard to the feedback that I had provided. She noticed that I was able to identify the quadrants she worked in immediately and she appreciated my feedback where I guided her into stimulating the other quadrants that she might have neglected. Therefore she stated that I was unconsciously ever-present: *So ek dink onbewustelik was jy healtyd daar [Therefore I think you were intuitively ever-present].* She noted that she was not consciously aware of when I applied, for example, Quadrant B or C, but that I had provided guidance with regard to the other quadrants in “my own way”.

3.14.2 Revision of Accounting Themes 1, 2 and 3

After reflecting on the learning opportunities of action research cycle A, I found it interesting that my mentee did not feel comfortable with group assignments. Group and team projects form part of student's expectation in Quadrant C – which is also one of my mentee's primary preferences. In this regard I requested that the learning opportunity of the revision consist of group assignments and that her students had to be responsible for explaining the concepts to the rest of the class. My mentee had to plan the learning opportunity by taking this requirement into consideration.

During my mentee's reflection in action research cycle A she noted that group work should only be done once students were comfortable with the concepts particular to a specific Accounting theme. In this regard her students were acquainted with the concepts as the learning opportunity focused on revision of the Accounting themes. During my visit revision for Accounting Themes 1 (Accounting

concepts and Accounting equation), Accounting Theme 2 (general ledger and trail balance) and Accounting Theme 3 (source documents and journals) was completed.

3.14.2.1 Qualitative analysis: The learning experience and my observations

For this learning opportunity my mentee explained that the six students present would be divided into three groups; she allocated the group members. Her students received three assignments related to each Accounting theme (See Appendix M for an example) and were instructed that each group would be responsible to explain the answers to the rest of the class. Her students were reminded to refer to their notes (which were all in separate plastic folders according to each theme). However, they seemed a bit unorganised and they paged through their notes. My mentee provided guidance and reminded one group to complete the assignment as a group and not as individuals. However, throughout the learning experience most of her students were, at some stage, working on their own (and this particular group, the group on the right-hand side on the photograph, seldom worked together as a group).



The first group was responsible for explaining the concepts of Accounting Theme 1 (in accordance with the assignments that they had completed). The female student read the transactions and the male student explained the answer. In some cases the group members explained their arguments

logically and adopted a step-by-step approach; or my mentee questioned them to determine how they had calculated their answers.



I observed that the rest of the class initially listened to the group's presentation, but then they continued completing their assignments (as when they did before the first group presented their Accounting) and it seemed as if they did not pay full attention to the group that presented the theme.



My mentee's attention was with the group that was presenting, and she made comments or asked questions during their presentation.

After their presentation my mentee requested the first group to explain a specific Accounting concept. Only one group member continued with the presentation – the other group member was seated and the rest of the class still continued with their own work in the same way as previously mentioned.



After the first presentation the class adjourned. My mentee informed her students that they would continue with the presentation and revision of the other themes in their following class.

During my observation I could relate to my mentee's reasons and frustrations for not wanting to rely too much on group work. In this case limited time was a factor and students were working mostly on their own or copied / confirmed the work of the other group member. However, I know from experience that group work can be very effective if well planned and facilitated. The planning should therefore focus on how to facilitate group work, and not only on the assignments and their content.

3.14.2.2 Qualitative analysis: My mentee's observations and reflection

My mentee observed (See my mentee's personal notes with regard to the action research steps for this learning opportunity in Appendix M) that her students referred to their notes that were filed in the A4 plastic folders. Besides one group that did not really work together, she noted that the group members resolved some of the transactions and reminded one another of the challenging aspects related to either a transaction or a concept. My mentee served as facilitator that guided her students who were confused about some transactions.

This particular learning opportunity allowed her students to strengthen their confidence since they could see that they were able to do the work on their own. It also enabled my mentee to identify the transactions or concepts that her students felt unsure about (or struggled with) and she could focus on only those transactions and concepts.

3.15 Data analysis of mentee’s students for action research spiral: Cycle B

Data in cycle B was gathered by means of group interviews from the mentee’s students.

3.15.1 Group interviews with the mentee’s students

Group interviews were conducted and the remaining six students were divided into two groups. Students Female 1, Female 2 and Male 1 formed part of the first group, and students Male 2, Male 3 and Female 4 formed part of the second group. The themes that were identified during these interviews were “Retrospective view of the Accounting experience”, “Most enjoyable aspects”, and “Group work”.

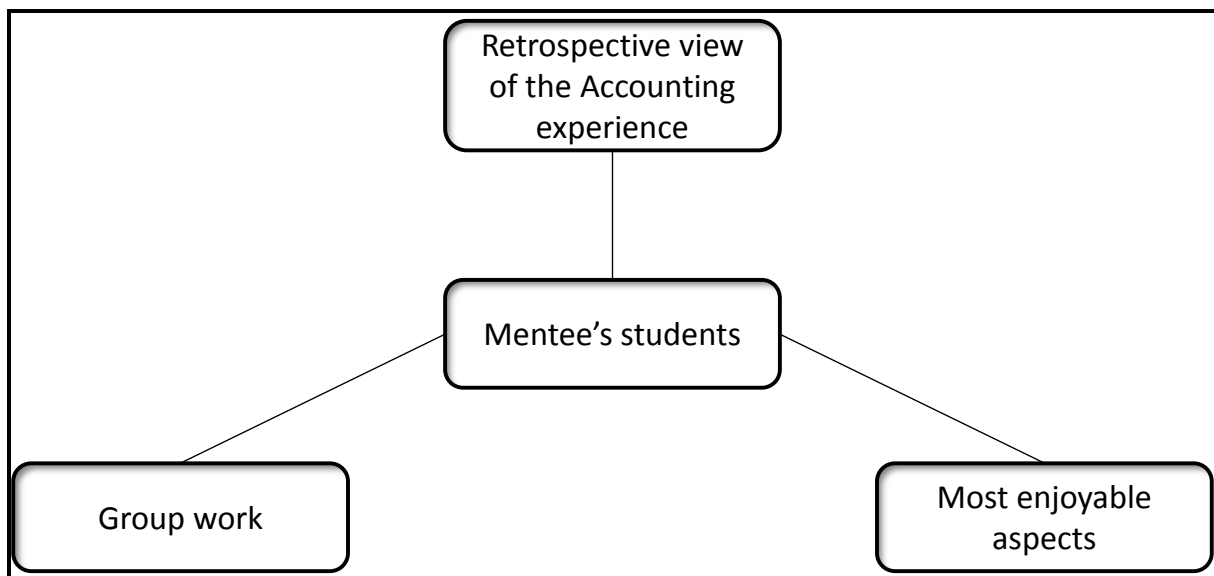


Figure 3.23: Themes identified by students during group interviews

Retrospective view of the Accounting experience: During these interviews the mentee’s students who had shown negativity towards Accounting in the first interview confirmed their initial negativity but they all agreed that their negative feelings changed for the better mainly because they realised that they understood the work. One student (Male 1) was particularly negative and said that he still experienced the negativity during my previous visit. Therefore, it can be interpreted that for these students, their initial negative feelings towards the subject gradually changed to a positive experience after completing the subject.

Most enjoyable aspects: In general, the mentee's students enjoyed the learning opportunities and class presentations. The practical examples, associations with examples (such as pictures) were highlighted by both groups as the most enjoyable aspect during the learning experiences. The second group referred to the personal attention and commitment of my mentee to each student as a positive aspect: *Sy praat met jou totdat jy hom (sic) verstaan. Sy sit by jou totdat jy dit verstaan* [*She speaks to you until you understand. She sits with you until you understand*]. The first group added that it helped them when my mentee explained the concepts by using the white board. Even though they enjoyed the PowerPoint presentations, their preference was the explanations by means of the white board. This was the only suggestion her students identified as a strategy that could be added and implemented by my mentee during the learning experiences.

Group work: The groups agreed that, at that stage, they were comfortable working in groups as the work was not new to them and they did not confuse one another. The group members were in a position to remind one another of certain concepts in case a member forgot a specific concept. One student (Male 3 from the second group) indicated that he would have preferred to work alone but agreed that he appreciated the fact that he could confirm his answers with his group member.

Two students (Male 2 and Female 4) that were responsible for explaining Accounting Theme 1 to the class during the learning opportunity stated that they knew what was expected of them, as Female 3 acknowledged: *Ons het dit al voorheen gedoen* [*We had done it previously*]. Male 1 from the first group noted: *Ek dink hulle kon net bietjie stadiger gepraat het* [*I think they could have slowed down a little bit*].

3.16 Mentor's reflection on action research spiral: Cycle B

In my reflective journal I acknowledged my mentee's attitude towards group work. My mentee had planned group discussions for the final learning opportunity, but it seemed to me that she did not plan how to facilitate the groups. One group was working alone and she had to remind them to work together.

3.17 Meta-reflection – the process as a whole

After completing the HBDI® and comparing our profiles, it was noted that my mentee's profile was a close match to my own profile. Our scores for quadrant A, C and D were the same, but quadrant B

was identified as her primary preference and my third preference. My profile (2212) was a single dominant profile and my mentee's profile (2112) a double dominant profile. Three main challenges became apparent from the profile identification:

- I had to understand and accommodate my mentee's preference for quadrant B.
- I had to ensure that my mentee developed and stimulated all four quadrants (not only operating in quadrant B).
- I had to understand the viewpoint from a person with a double dominant profile.

A person with a single dominant profile views the world from a "consistent set of lenses" (Herrmann 1995a:86) whereas one with a double dominant profile has the ability to iterate (Herrmann 1995a:88). However, the profile analysis of my mentee and myself (Herrmann International 2006 and 2011) provided me with an understanding and indication of who we are; and how we, as individuals, act. It also allowed me, as the mentor, to determine when we acted within our preferred thinking styles or when we had to think and act laterally. I could therefore monitor the process and was able to observe how both our practices transformed into adapting a whole brain® approach. As the mentor I regarded myself as a peer, facilitator, observer and reflector who followed a whole brain® approach.

My mentee requested feedback after planning the whole brain® strategies for each Accounting theme. My feedback was intended to enlighten her and not necessarily to tell her where she could have planned the strategies differently. I observed, for example, that she was reluctant to plan group discussions and I would suggest that she focus on more group discussions. As part of feedback I sent her an article related to a traditional lecturer who transformed to a facilitator. The article focused on students that were required to work in groups and the resulting positive outcomes. I used different strategies to enhance her creative thinking.

I found her reluctance towards group work and group discussions quite interesting since it related to Quadrant C, which was one of her primary thinking style preferences. When reflecting on it, I realised what Herrmann (1995a:88) meant when he referred to a double dominant person's ability to iterate whereas I, as single dominant person, view the world from a "consistent lens" (Herrmann 1995a:86). She focused on different strategies when she planned strategies for Quadrant C (such as playing music) whereas I regarded group work as the main development for Quadrant C.

From my own experiences I observed that, if facilitated appropriately, group work and group discussions in Accounting can definitely lead to a positive learning experience. However, from my

mentee's observations and reflections I noticed that she had not had a positive learning experience in the Accounting class regarding group work. I requested that she focused on group work in revision of the Accounting themes. My final visit to the Klerksdorp campus was when her students' revised Accounting Themes 1, 2 and 3 that were completed by means of group work. It was during this visit that my mentee acknowledged her reluctance to facilitate group work. Even-though her students regarded group work as a positive learning experience, I observed that the groups did not really interact and that I would have followed a different strategy of facilitating that particular learning opportunity. With regard to this study and my mentee's facilitation of whole brain® learning, one of the aspects that my mentee acknowledged as an aspect that she could improve was the facilitation of group work. Although my mentee incorporated group work even-though it was limited she acknowledged her reluctance towards facilitating efficient group work and provided the following reasons followed by recommendations:

- Time was an issue. She experienced group work as time consuming and felt frustrated since she had limited time to explain the various constructs with regard to a theme. She felt that group work wasted valuable time and that she could optimally use that time to explain constructs better and let her students complete more individual tasks.
- She felt that she was not in control and she wanted to be in control, which supported her primary preference for Quadrant B thinking.
- She experienced group work as "one student completes the task, and the other students simply copy the work".
- When students engaged in group work, she could not identify which students did not understand the related constructs and therefore, she could not address the problem.
- She became over-excited and completely forgot about the group work that she had planned.

My mentee's reluctance to do group work was further manifested when her students engaged in a group assignment at the commencement of Accounting Theme 4 and it caused much confusion among her students. Some of her students experienced initial negativity towards Accounting and the confusion increased the negativity.

Co-operative learning, however, supports Quadrant C thinking and is compulsory when applying whole brain® teaching and learning. Du Toit (2013:102) states that "every learner should be guided to become an independent learner. In order to promote independent learning, interdependent learning (learning from others) is imperative". Group work is therefore vital and the following recommendations can be made to ensure effective and efficient co-operative learning in Accounting:

- Group work should not be conducted at the commencement of a theme as it may confuse students. Students gain confidence once they have proved to themselves that they understand a specific Accounting-related concept. Their confidence will lead to an optimal learning experience when they engage in group work.
- In order to enhance individual accountability in group work, the lecturer can ask any or all group members to explain a specific concept afterwards; then the group members do not know in advance which concept they will be asked to explain.

When reflecting on the process with regard to group work, it left me, in my role as mentor, with the following questions:

- To what extent do I facilitate my mentee's professional learning into implementing a specific strategy that she is reluctant or uncomfortable with to apply?
- What could I have done differently following a blended mentoring approach in terms of facilitating my mentee's professional learning?

In order to answer these questions, I had to keep in mind that I wanted to enhance self-regulated learning for my mentee. When replanning my new action research cycle derived from my spiral as indicated in Figure 3.1, I will consider the following that are additional to the strategies that were implemented with regard to whole brain[®] mentoring:

- In the case of peer mentoring, my mentee can also experience learning opportunities by visiting me and my students. Both my mentee and I can observe the actions and reflect on these learning opportunities and learning experiences. Observation sheets can be used in this regard.
- Peer mentoring should involve peer reflection. As individuals my mentee and I continually reflected on our respective practices and transformations. Reflection, as part of the action research cycle, should involve individual and peer reflection. When peers reflect, they can share their personal experiences that facilitate Quadrant C thinking. They can also synthesise (Quadrant D) and plan (Quadrant B) by means of sharing ideas for other learning opportunities.
- Blended mentoring (combining face-to-face mentoring and e-mentoring) can be regarded as the most appropriate way to facilitate whole brain[®] mentoring. From this experience, I regard face-to-face interaction as essential for quadrant C development. If my mentee and I relied on e-mentoring only we would not have shared and experienced the same emotional involvement. The face-to-face interactions supported and increased our mutual trust and

respect for each other. E-mentoring, however, allows Quadrant A thinking in terms of technologically advanced methods. Other technological methods such as WhatsApp or text messages, social media, such as Facebook and Twitter, blogs and Skype can be incorporated. Innovative ideas (Quadrant D thinking) can also result from incorporating technologically advanced methods – an inter-departmental blog / group WhatsApp / Facebook group (e.g. of a Tourism department with more than one campus) can be very effective when sharing ideas of whole brain® learning (Quadrant C development).

- The mentor and mentee can individually compile a manual pertaining to their own practices that summarises the basic action research steps and the basic aspects with regard to whole brain® teaching and learning for referencing purposes (Quadrant A thinking). A basic checklist can accompany the manual that can be applied in every learning opportunity (See Appendix N for a basic example of such a checklist); the checklist can be adapted according to various needs and specifications. Such a checklist, which supports Quadrant B thinking, will ensure that the action researcher applies the action research steps with examples of data collection techniques that could contain examples of whole brain® strategies that can be implemented.
- An organisation-based mentoring programme with a view to promoting the culture of whole brain® learning in an organisation should be established. Therefore my mentee (or any mentee) should become peer mentors of colleagues and facilitate professional learning with regard to whole brain® teaching and learning. The Tourism Department should therefore transform into becoming a whole brain® department. Our department can become mentors of peers in different departments to establish an organisation-based mentoring programme. The mentees will then most probably transform into whole brain® mentors. In such a case management support is inevitable and whole brain® mentoring could also form part of a company's induction programme for new staff members.

As my mentee's peer, I had gained many new ideas with regard to incorporating whole brain® teaching and learning strategies in my own Accounting class. Whole brain® mentoring allowed us to learn from each other as peers, which differs from the traditional sense of mentoring where the mentee learns from the mentor. My mentee's idea of incorporating A4 plastic folders to organise and file each Accounting theme's notes and tasks became very useful in my own class. There are loads of paperwork for each Accounting theme and I had experienced that my students did not file their notes appropriately. In the past I would have instructed my students to file their work according to each theme, but not all my students responded to my request.

The graphics that my mentee used during her PowerPoint presentations to illustrate a scenario were also a strategy that I adapted. It allowed her students to visualise the scenario and they were able to recognise an applicable concept by referring to a picture. My mentee summarised steps that her students could apply pertaining to a specific concept where I applied only the steps. It was helpful to summarise the steps in written format as her students were able to refer to the steps once they got confused.

On reflecting I realised that I had learned from my mentee's ideas pertaining to her learning opportunities, which included reviewing her action research steps and observing and experiencing two of her learning opportunities. Even-though she acknowledged that she had also learned from me as the mentor, I realised that she could have learned from another perspective if she had attended one or two of my learning opportunities.

3.18 Conclusion

Blended mentoring, with the main focus on e-mentoring, was imperative in this study. The mentoring relationship and the actions of the mentor and mentee were planned and executed in alignment with the Herrmann Whole brain® concept. The action research process involved a mixed methods research approach as both quantitative and qualitative data was gathered.

The mentee's students' initial feelings with regard to Accounting were mainly negative, but they acknowledged the importance of Accounting in Tourism. After completing the Accounting module, they noted that they had enjoyed it and their initial negative feelings were unnecessary. They enjoyed the learning experiences and clearly distinguished these learning experiences from those they had experienced during high school. With only seven (in the end six) students it cannot statistically indicate whether whole brain® learning improved her students' overall marks compared to previous years, but it clearly influenced her students' positive attitude towards Accounting.

Upon reflecting both my mentee and I identified areas in our respective practices that could be transformed. A transformational practice is a practice that does not stagnate. Action research allows continuous awareness of the transformational strategies and allows a lecturer to develop professionally continuously.

CHAPTER 4

CONCLUSION AND RECOMMENDATIONS

4.1 Introduction

Aspects and constructs with regard to mentoring that I was confronted with during this action research project are whole brain[®] mentoring, blended mentoring, peer mentoring and long distance mentoring. Theoretically these constructs were new to me. My mentee was confronted with main constructs such as whole brain[®] teaching and learning and action research.

Blended mentoring was opted for as the most suitable form of mentoring due to the long distance between my mentee and me. I adapted a whole brain[®] approach towards facilitating my mentee's professional learning. As professional individuals, supported by the roles of an educator (South Africa 2000), the main purpose of the mentoring relationship was to transform our respective practices. As I regarded my mentee as my peer I was able to construct new meaning (Smith 2007), which supported the research paradigm of constructivism – social and individual.

A summary of the main findings of the research study in correlation with the research questions is presented in this chapter. It also provides recommendations for aspects raised by the findings as discussed in Chapter 3.

4.2 Summary of the findings

The main findings of the research, in relation to the purpose of the research and research questions discussed in Chapter 1, the theoretical framework presented in Chapter 2 and the data analysis conducted in Chapter 3 – are highlighted in this section.

The primary research question is formulated as follows in Chapter 1: *How can a whole brain[®] approach to mentoring facilitate my own and my mentee's professional development?* In addressing the primary research question I identified procedural research questions that addressed my own, my mentee's and her students' thinking style preferences; how thinking style preferences could transform my mentee's and my own practice; how action research could monitor my mentee's and my own professional development; and what the challenges of the mentoring relationship were and how they could be dealt with.

To address these research questions I relied on blended mentoring as I focused on face-to-face mentoring and e-mentoring. The qualitative and quantitative data that was gathered and analysed is interpreted to answer the research questions.

4.2.1 Procedural research question 1: What are my own, my mentee's and her students' thinking style preferences?

My own, my mentee's and her students' thinking style preferences were determined by the HBDI®. For the purpose of transforming my mentoring practice, I identified my own and my mentee's thinking style preferences. To transform her teaching practice, my mentee identified her own and her students' thinking style preferences.

My own profile was identified as a single dominant profile whereas my mentee's profile was identified as a double dominant profile. Both of us have a primary preference for Quadrant C.

Of my mentee's students, five are triple dominant, one is double dominant and one is single dominant. The group average indicated primary preferences for Quadrants B, C and D and a secondary preference for Quadrant A.

From my perspective the impact of the HBDI® on my mentoring practice was that I was able to identify and reflect on my own actions when my own thinking style preference was accommodated; I had to focus on accommodating my mentee's thinking style preferences and it enabled me to develop my least preferred thinking styles. It allowed me to think "out of my box" (Du Toit 2012). The HBDI® had an impact on my mentee's teaching practice as she acknowledged her students' thinking style preferences and she planned how to incorporate whole brain principles to accommodate their various thinking style preferences.

4.2.2 Procedural research question 2: How can my mentee and I, as mentor, use action research to address thinking style preferences to transform our respective practices and to monitor our professional development?

My mentee and I each engaged in action research: my action research spiral focused on my mentoring practice and how I facilitated my mentee's professional development, whereas my mentee's action research spiral focused on whole brain® facilitation in her Accounting class. As

discussed in Chapter 3, our action research cycles overlapped, which allowed me to monitor her professional development continually. We both used the planning phase to implement the whole brain® principles pertaining to the specific action research cycle. During the action research step *acting to transform* we were able to observe aspects that had an effect on our transformation. In this regard quantitative and qualitative data collection methods were used, including students' questionnaires, students' scores, observations, audio-visual material, interviews with my mentee and her students, as well as documents of both my mentee and myself.

Chapter 3 provides a layout of how the whole brain® principles were incorporated in relation to each action research cycle. The reflecting stage allowed us to look back and enabled us to identify aspects that did not work out the way we planned, whole brain principles that were effective and those that we could still improve on. My meta-reflection, where I reflected on the process as a whole, allowed me to identify aspects that I wanted to implement to transform my whole brain mentoring practice.

My mentee noted in her final interview that action research contributed to her professional development. She identified aspects in her teaching practice that she would like to investigate with regard to whole brain® learning. In my personal reflective journal I noted that a whole brain® approach to mentoring transformed my mentoring practice, but in order to transform my mentoring practice continually I have to engage in action research on a continuous basis. I regard myself as responsible for my own professional, life-long learning, which implies that I have to execute the strategies of self-regulated professional learning (Du Toit 2012:1218).

4.2.3 Procedural research question 3: What are the challenges of the mentor relationship and how can they be dealt with?

The main challenge of this mentor relationship was identified as the distance between my mentee and me. Blended mentoring was opted for as the most suitable in this regard as it focuses on face-to-face mentoring and e-mentoring (Thompson, Jeffries & Topping 2010:306).

Another aspect that had an impact on the mentor relationship was time. We were both responsible for lecturing other subjects and for administrative duties within the Department. My mentee was in the final stages of completing her master's degree. I regard e-mentoring as an aspect that is time-friendly. It is not bound to office hours and we were able to communicate by means of e-mail at any

time of the day. Time was, however, a constraint with regard to finding a suitable time for face-to-face mentoring sessions that were imperative because of the distance between us.

4.2.4 Primary research question: How can a whole brain® approach to mentoring facilitate my own and my mentee’s professional development?

The identification of my own and my mentee’s thinking style preferences contributed to an open and effective communication channel between us, especially since our thinking style preferences were to some extent in alignment. I understood why my mentee acted the way she did, and we were both willing to move out of our own individual comfort zones by means of implementing strategies in all four quadrants.

In order to answer the primary research question, I considered the viewpoint of Greyling and Du Toit (2008:975) that awareness of thinking style preferences may promote “harmony, tolerance and communication”. For an effective mentoring relationship those three aspects are crucial. De Boer and Van den Berg (2001:124) noted that when thinking style preferences are not in alignment, it may be difficult for the parties to deal with their differences effectively. In this particular mentor relationship, I had to address the mentee’s primary preference (quadrant B) effectively, which challenged me to think out of my box (Du Toit 2012) since it is not one of my primary preferences. Whole brain mentoring therefore challenges a mentor (and mentee) to move out of their comfort zone. I would therefore claim that whole brain mentors (constantly focussing on developing all four quadrants) may not necessarily find it difficult to address differences in the case where thinking style preferences are out of line; they would move out of their box in order to accommodate those mentees.

The different whole brain strategies (Chapter 3) that I have implemented in this mentor relationship not only allowed me to understand my own and my mentee’s way of thinking better; I also identified the importance of thinking out of my box by means of continuously develop all four quadrants.

In this study, whole brain mentoring facilitated my professional development as I was able to think constantly out of my box. I had to plan whole brain strategies keeping in mind the various challenges of the mentor relationship. As I had the freedom to explore and develop my mentoring practice, the whole brain mentoring approach facilitated the mentee’s professional development as

she had the freedom to explore her teaching practice by means of implementing whole brain strategies. Whole brain mentoring and learning therefore created awareness of different thinking style preferences and it allowed us to cater for those thinking style preferences.

4.3 Recommendations for whole brain[®] mentoring, teaching and learning

The following is recommended with regard to whole brain[®] teaching and learning:

- If it is financially possible, it is recommended that mentors, mentees (as lecturers) and the students complete the HBDI[®].
- A manual with regard to the different quadrants should be compiled and communicated to the students. The students should therefore be aware of the whole brain[®] concept.
- The lecturer (or mentee) should implement her own data collection techniques (such as questionnaires pertaining to the whole brain[®] learning experiences and video recordings of the learning experiences) to support the observation phase of action research to enhance self-regulated learning. In this study my mentee relied mainly on my feedback since I was responsible for collecting the data.
- All the lecturers of the Tourism Department on both the Centurion campus and the Klerksdorp campus should integrate and use the principles of whole brain[®] teaching and learning in their respective teaching practices.
- To support and enhance a whole brain[®] learning organisation and a whole brain[®] community of practice, the lecturers can share their experiences with regard to whole brain[®] teaching and learning. The lecturers from the different campuses can share their experiences via Skype or e-mail.
- Lecturers can attend one another's whole brain[®] learning opportunities (even via Skype) and share their observations and reflections.

4.4 Recommendations for further action research projects

- As the mentor I can further transform my practice by mentoring peers from my own and other departments in adapting whole brain[®] teaching and learning, thereby striving towards becoming a whole brain[®] learning organisation and building a whole brain[®] community of practice.
- My mentee can further transform her practice by means of mentoring her peers to adapting whole brain[®] teaching and learning, thus enhancing community-based learning.

- My mentee can further transform her practice by means of adapting whole brain® teaching and learning in all her subjects.
- The identification of the Tourism Departments' (Centurion Campus and Klerksdorp Campus) thinking style preferences can be determined in order to raise awareness of diversity. The correlation between the two campuses' group profiles can be investigated.
- The profiles of management, head of departments and academic staff at Centurion Academy can be determined and the correlation between the group profiles can be investigated.
- The profiles of the Tourism students (Centurion Campus and Klerksdorp Campus) can be determined and the correlation of the group profiles of the first-, second- and third-year students can be investigated. The correlation between the group profiles of the students on different campuses can also be investigated.

4.5 Conclusion

Action research is imperative for professional development and transforming one's practice. This action research project had a dual purpose from two perspectives. Firstly, a whole brain® approach towards applying blended mentoring transformed my mentoring practice. Secondly, a whole brain® approach towards teaching and learning Accounting transformed my mentee's practice. As a result we both developed professionally as educators. Action research allowed continuous reflection on what we had planned to do, what we did and what we observed through our actions. As it is part of our roles as educators to be researchers and lifelong learners (South Africa 2000) action research is the stepping stone towards fulfilling these roles.

Each educational department or educational institution should strive to become a whole brain® learning department or organisation. A whole brain® approach to mentoring and facilitating and assessing learning caters for thinking style diversity. Blended mentoring that supports whole brain® mentoring was identified as the most appropriate and suitable form of mentoring in my research. I would, however, apply the concept of blended mentoring irrespective of the distance between my mentee and me. Therefore I would suggest using the concept "blended whole brain® mentoring" in my future action research studies. Whole brain® mentoring should therefore include face-to-face mentoring and e-mentoring.

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APPENDIX A



HBDI

Herrmann Brain Dominance Instrument Thinking Styles Assessment

This 120-question survey form results in a profile of your preferred thinking styles. By understanding your thinking style preferences you can achieve greater appreciation how you learn, make decisions, solve problems, and communicate, and why you do these things—and others—the way you do. The survey measures preferences rather than skills. It is not a test; there are no wrong answers. You will gain the greatest understanding by answering the questions frankly and sincerely

Herrmann International
Your HBDI Practitioner: Dr Pieter H du Toit
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Use of this form is subject to your agreement with the following conditions: (i) the instrument must be used in its entirety; no portion may be extracted and used separately. (ii) No change or alteration of the instrument in any way is permitted; to preserve the integrity of the instrument and its scoring methodology, the instrument must be used exactly as it is produced here. (iii) Any use of the instrument must contain the notice of copyright held by The Ned Herrmann Group. (iv) The title - Herrmann Brain Dominance Instrument - is an integral part of the instrument, and must always appear on the document.

INSTRUCTIONS

A profile of your mental preferences will be determined by your responses to the following 120 questions. Answer each question by writing in the appropriate words or numbers, or marking the boxes provided. This is not a test, and there are no right or wrong answers. You are only indicating your preferences. Please respond to questions as authentically as possible, keeping in mind your total self, at work and at home. When you have completed the survey form, confirm that you have answered every question. Then complete the name and address information on the back of the form, and send or fax pages 2 to 5 to Herrmann International Africa at the address on the cover.

BIOGRAPHICAL INFORMATION

Please complete **every** question according to the directions given. Each response, including your answers to questions 1, 2, 3 and 4, provide important data. When directions are not followed or data is incomplete we are unable to process your survey, and must return it to you.

1. Name _____ 2. Gender M F

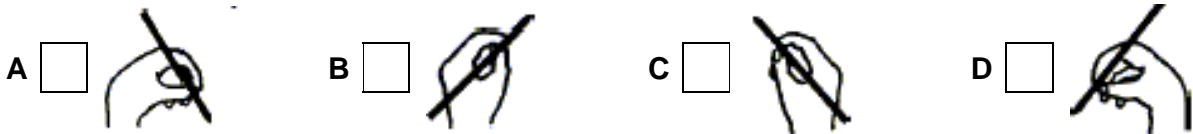
3. Educational focus or specialist subject(s) _____

4. Occupation or job title _____

Describe your work (please be as specific as possible) _____

HANDEDNESS

5. Which picture most closely resembles the way you hold a pencil? Mark box A, B, C or D.



6. What is the strength and direction of your handedness? Mark box A, B, C, D or E.

A Primary left
 B Primary left Some right
 C Both hands equal
 D Primary right, some left
 E Primary right

SCHOOL SUBJECTS

Think back to your performance in the elementary and/or secondary school subjects identified below. Rank order all three subjects on the basis of how well you did: **1 = best; 2 = second best; 3 = third best.**

7 Mathematics 8 Foreign language 9 Native language or mother tongue

Please check that no number is duplicated: **The numbers 1, 2, and 3 must be used once and only once. Correct if necessary**

WORK ELEMENTS

Rate each of the work elements below according to your strength in that activity, using the following scale: **5 = work I do best; 4 = work I do well; 3 = neutral; 2 = work I do less well; 1 = work I do least well.**

Enter the appropriate number next to each element. Do not use any number more than four times.

- | | | | | | | | | |
|----|--------------------------|------------------|----|--------------------------|-----------------------|----|--------------------------|-------------------|
| 10 | <input type="checkbox"/> | Analytical | 16 | <input type="checkbox"/> | Technical Aspects | 21 | <input type="checkbox"/> | Innovating |
| 11 | <input type="checkbox"/> | Administrative | 17 | <input type="checkbox"/> | Implementation | 22 | <input type="checkbox"/> | Teaching/Training |
| 12 | <input type="checkbox"/> | Conceptualising | 18 | <input type="checkbox"/> | Planning | 23 | <input type="checkbox"/> | Organisation |
| 13 | <input type="checkbox"/> | Expressing Ideas | 19 | <input type="checkbox"/> | Interpersonal Aspects | 24 | <input type="checkbox"/> | Creative Aspects |
| 14 | <input type="checkbox"/> | Integration | 20 | <input type="checkbox"/> | Problem Solving | 25 | <input type="checkbox"/> | Financial Aspects |
| 15 | <input type="checkbox"/> | Writing | | | | | | |

Please tally: Number of: 5's 4's 3's 2's 1's

If there are more than four for any category, please redistribute.

KEY DESCRIPTORS

Select eight adjectives, which best describe the way you see yourself. Enter a **2** next to each of your eight selections. Then change one **2** to a **3** for the adjective which best describes you.

- | | | | | | | | | |
|----|--------------------------|--------------|----|--------------------------|--------------|----|--------------------------|--------------|
| 26 | <input type="checkbox"/> | Logical | 35 | <input type="checkbox"/> | Emotional | 43 | <input type="checkbox"/> | Symbolic |
| 27 | <input type="checkbox"/> | Creative | 36 | <input type="checkbox"/> | Spatial | 44 | <input type="checkbox"/> | Dominant |
| 28 | <input type="checkbox"/> | Musical | 37 | <input type="checkbox"/> | Critical | 45 | <input type="checkbox"/> | Holistic |
| 29 | <input type="checkbox"/> | Sequential | 38 | <input type="checkbox"/> | Artistic | 46 | <input type="checkbox"/> | Intuitive |
| 30 | <input type="checkbox"/> | Synthesizer | 39 | <input type="checkbox"/> | Spiritual | 47 | <input type="checkbox"/> | Quantitative |
| 31 | <input type="checkbox"/> | Verbal | 40 | <input type="checkbox"/> | Rational | 48 | <input type="checkbox"/> | Reader |
| 32 | <input type="checkbox"/> | Conservative | 41 | <input type="checkbox"/> | Controlled | 49 | <input type="checkbox"/> | Simultaneous |
| 33 | <input type="checkbox"/> | Analytical | 42 | <input type="checkbox"/> | Mathematical | 50 | <input type="checkbox"/> | Factual |
| 34 | <input type="checkbox"/> | Detailed | | | | | | |

Please count: seven 2's and one 3? **Correct if necessary.**

HOBBIES

Indicate a maximum of six hobbies you are actively engaged in. **Enter a 3** next to your major hobby, a **2** next to each primary hobby, and a **1** next to each secondary hobby. **Enter only one 3.**

- | | | | | | | | | |
|----|--------------------------|------------------|----|--------------------------|-------------------|-------|--------------------------|------------------|
| 51 | <input type="checkbox"/> | Arts/Crafts | 59 | <input type="checkbox"/> | Gardening/Plants | 67 | <input type="checkbox"/> | Sewing |
| 52 | <input type="checkbox"/> | Boating | 60 | <input type="checkbox"/> | Golf | 68 | <input type="checkbox"/> | Spectator Sports |
| 53 | <input type="checkbox"/> | Camping/Hiking | 61 | <input type="checkbox"/> | Home Improvements | 69 | <input type="checkbox"/> | Swimming/Diving |
| 54 | <input type="checkbox"/> | Cards | 62 | <input type="checkbox"/> | Music Listening | 70 | <input type="checkbox"/> | Tennis |
| 55 | <input type="checkbox"/> | Collecting | 63 | <input type="checkbox"/> | Music Playing | 71 | <input type="checkbox"/> | Travel |
| 56 | <input type="checkbox"/> | Cooking | 64 | <input type="checkbox"/> | Photography | 72 | <input type="checkbox"/> | Woodworking |
| 57 | <input type="checkbox"/> | Creative Writing | 65 | <input type="checkbox"/> | Reading | Other | <input type="checkbox"/> | |
| 58 | <input type="checkbox"/> | Fishing | 66 | <input type="checkbox"/> | Sailing | Other | <input type="checkbox"/> | |

Please review: **Only one 3 and** no more than six hobbies. **Correct if necessary.**

ENERGY LEVEL

73. Thinking about your energy level or “drive,” select the one that best represents you. Mark box A, B, or C.

- A Day person B Day/night person equally C Night person

MOTION SICKNESS

74. Have you ever experienced motion sickness (nausea, vomiting) in response to vehicular motion (while in a car, boat, plane, bus, train, amusement ride)? Check boxes A, B, C, or D to indicate the number of times.

- A None B 1-2 C 3-10 D More than 10

75. Can you read while traveling in a car without stomach awareness, nausea, or vomiting?

- A Yes B No

ADJECTIVE PAIRS

For each paired item below, check the word or phrase, which is more descriptive of you. Mark box A or B for each pair, even if the choice is a difficult one. Do not omit any pairs.

76	Conservative	<input type="checkbox"/>	<input type="checkbox"/>	Empathetic	88	Imaginative	<input type="checkbox"/>	<input type="checkbox"/>	Sequential
77	Analyst	<input type="checkbox"/>	<input type="checkbox"/>	Synthesizer	89	Original	<input type="checkbox"/>	<input type="checkbox"/>	Reliable
78	Quantitative	<input type="checkbox"/>	<input type="checkbox"/>	Musical	90	Creative	<input type="checkbox"/>	<input type="checkbox"/>	Logical
79	Problem-solver	<input type="checkbox"/>	<input type="checkbox"/>	Planner	91	Controlled	<input type="checkbox"/>	<input type="checkbox"/>	Emotional
80	Controlled	<input type="checkbox"/>	<input type="checkbox"/>	Creative	92	Musical	<input type="checkbox"/>	<input type="checkbox"/>	Detailed
81	Original	<input type="checkbox"/>	<input type="checkbox"/>	Emotional	93	Simultaneous	<input type="checkbox"/>	<input type="checkbox"/>	Empathetic
82	Feeling	<input type="checkbox"/>	<input type="checkbox"/>	Thinking	94	Communicator	<input type="checkbox"/>	<input type="checkbox"/>	Conceptualise
83	Interpersonal	<input type="checkbox"/>	<input type="checkbox"/>	Organiser	95	Technical things	<input type="checkbox"/>	<input type="checkbox"/>	People-oriented
84	Spiritual	<input type="checkbox"/>	<input type="checkbox"/>	Creative	96	Well-organised	<input type="checkbox"/>	<input type="checkbox"/>	Logical
85	Detailed	<input type="checkbox"/>	<input type="checkbox"/>	Holistic	97	Rigorous Thinking	<input type="checkbox"/>	<input type="checkbox"/>	Metaphorical Thinking
86	Originate Ideas	<input type="checkbox"/>	<input type="checkbox"/>	Test and Prove Ideas	98	Like Things Planned	<input type="checkbox"/>	<input type="checkbox"/>	Like Things Mathematical
87	Warm, Friendly	<input type="checkbox"/>	<input type="checkbox"/>	Analytical	99	Technical	<input type="checkbox"/>	<input type="checkbox"/>	Dominant

Please review: **Did you mark one and only one of each pair? Correct if necessary.**

INTROVERSION / EXTROVERSION									
100. Mark one box to place yourself on this scale from introvert to extrovert:									
Introvert									Extrovert

TWENTY QUESTIONS					
Respond to each statement by marking the box in the appropriate column	Strongly agree ▼	Agree ▼	In between ▼	Disagree ▼	Strongly disagree ▼
101 I feel that a step-by-step method is best for solving problems.					
102 Daydreaming has provided the impetus for the solution of many of my more important problems.					
103 I like people who are most sure of their conclusions.					
104 I would rather be known as a reliable than an imaginative person.					
105 I often get my best ideas when doing nothing in particular.					
106 I rely on hunches and the feeling of “rightness” or “wrongness” when moving toward the solution to a problem					
107 I sometimes get a kick out of breaking the rules and doing things I’m not supposed to do.					
108 Much of what is most important in life cannot be expressed in words.					
109 I’m basically more competitive with others than self competitive					
110 I would enjoy spending an entire day “alone with my thoughts.”					
111 I dislike things being uncertain and unpredictable.					
112 I prefer to work with others in a team effort rather than solo.					
113 It is important for me to have a place for everything and everything in its place.					
114 Unusual ideas and daring concepts interest and intrigue me.					
115 I prefer specific instructions to those which leave many details optional					
116 Know-why is more important than know-how.					
117 Thorough planning and organisation of time are mandatory for solving difficult problems.					
118 I can frequently anticipate the solutions to my problems.					
119 I tend to rely more on my first impressions and feelings when making judgments than on a careful analysis of the situation.					
120 I feel that laws should be strictly enforced.					
Please review to make sure you have answered all 120 questions.					

FORM

You must provide an address and indicate the method of payment in order to receive your HBDI results. Please print.

Name	_____	Date	_____
Company	_____		
Division	_____		
Company address	_____		
Daytime phone	_____	Evening phone	_____
Home address	_____		
E-mail address	_____		

Note: There is a fee for processing this survey form. Please consult your HBDI practitioner.

R700 to be paid into cost centre AG 327/03545 of the University of Pretoria

CONFIDENTIAL RESEARCH

The following questions are not used in scoring the HBDI. However, the answers to these questions are valuable in our continuing brain dominance research. Skip any questions you wish, but please answer as many as you feel you can.

Indicate the birth order of your brothers, sisters, and self by marking the appropriate symbols. Then circle the symbol representing you.

MALE Brothers	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td style="text-align: center;">Oldest</td> <td style="text-align: center;">2nd</td> <td style="text-align: center;">3rd</td> <td style="text-align: center;">4th</td> <td style="text-align: center;">5th</td> <td style="text-align: center;">6th</td> <td style="text-align: center;">7th</td> <td style="text-align: center;">8th</td> <td style="text-align: center;">9th</td> <td style="text-align: center;">10th</td> <td style="text-align: center;">11th</td> <td style="text-align: center;">12th</td> <td></td> </tr> </table>														Oldest	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th		MALE
Oldest	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th																	
SELF FEMALE Sisters	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> </table>														FEMALE													

Ethnicity: Black White Asian Other _____

If you are a parent, please indicate:
 number of children Age of oldest Age of youngest

Couple status Married Separated Divorced Living together Widow/widower Single

To what extent were you formally educated for the field you are now working in?

Not at all Somewhat To a great degree Fully

Have you filled out the HBDI survey previously? If so, and your name or address has changed since then, please specify the previous name or address

How do you see yourself? Please distribute 100 points between these four descriptions:

Rational Organised Interpersonal Imaginative

Please check the best descriptor indicating your mood or the way you felt at the time you were completing this survey:

<input type="checkbox"/> Happy	<input type="checkbox"/> Enthusiastic	<input type="checkbox"/> Interested	<input type="checkbox"/> OK	<input type="checkbox"/> Relaxed	<input type="checkbox"/> Indifferent
<input type="checkbox"/> Distracted	<input type="checkbox"/> Tired	<input type="checkbox"/> Unhappy	<input type="checkbox"/>		



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APPENDIX B

1 Julie 2011

Beste Me ~~Elize Maridobert~~

UITNODIGING OM DEEL TE NEEM AAN 'N NAVORSINGSTUDIE AS VRYWILLIGER

Ek is tans 'n geregistreerde student in M.Ed. Kurrikulum en Instruksionele Ontwerp en Ontwikkeling aan die Universiteit van Pretoria. My navorsing, getiteld "A whole brain approach to mentoring in a Higher Education Tourism Department" (onder leiding van Dr PH du Toit), behels heelbreinleer (met betrekking tot Ned Herrmann se studie) wat spesifiek fokus op Rekeningkunde as vak vir Toerismestudente. As 'n dosent van Centurion Akademie is dit noodsaaklik en verpligtend om gementor te word. My versoek aan u is egter ook om vrywillig as "mentee" vir die studie op te tree (waar ek as jou mentor sal optree). Die volgende sal van u verwag word:

- U dominante leerstyl sal na aanleiding van die *Herrmann Brain Dominance Instrument* (HBDI) bepaal word. Die koste van die toets word deur die navorser gedra. Dit duur ongeveer 35 minute om die toets te voltooi, en die toets kan aanlyn voltooi word.
- U studente se dominante leerstyl sal ook volgens die HBDI getoets word. U klasaanbiedinge en assesserings moet gevolglik heelbreinleer nastreef – as mentor sal ek u gedurende die tydperk adviseer.
- U moet in 'n reflektiewe joernaal na elke klasaanbieding en assessering reflekteer ten opsigte van u groei as fasiliteerder (dosent) en die vordering van die studente. Die reflektering sal hoofsaaklik fokus op die implementering van heelbreinleer in u klasomgewing.
- Ten tye van die navorsing sal ek twee van u klasaanbiedinge bywoon. Die klasaanbiedinge sal ook vir navorsingsdoeleindes opgeneem word, indien dit u goedkeuring wegdra (~~Elize Maridobert~~ sal die opname maak). Na afloop van die klasaanbiedinge sal ek 'n onderhoud met u voer (dit sal ongeveer 45 minute duur). Die bywoningssessies sal vroegtydig gereël en bevestig word. Ek sal die

voorgestelde vrae 'n week voor die onderhoud vir u deurstuur. Die datum en tyd sal later bevestig word en sal alle partye betrokke akkommodeer.


Dit is egter noodsaaklik om u in kennis te stel dat u vrywillig aan die studie meedoen. U mag enige tyd van die studie onttrek sou u verkies om dit te doen. U anonimiteit word verseker deurdat u naam nie gepubliseer word nie – daar sal slegs na u verwys word as die “mentee” (slegs die bestuur en Toerismepersoneel van Centurion Akademie sal u kan identifiseer). U sal nie vergoed word vir u bydrae tot die studie nie, maar ek sal wel enige koste met betrekking tot die studie dra. Sou u verkies om toegang tot die data te verkry, is u welkom om my of my studieleier te kontak.

Indien u enige verdere navrae het rakende die navorsingsproses, kontak my gerus by (012) 683 9978 of by 082 331 [REDACTED]. Alternatiewelik kan u vir my 'n epos stuur na HScheepers@ca2000.co.za. My studieleier, Dr PH du Toit se kontaknommer is (012) 420 2817 ([epos pieter.dutoit@up.ac.za](mailto:epos.pieter.dutoit@up.ac.za))

Vriendelike groete




Hannelie Scheepers

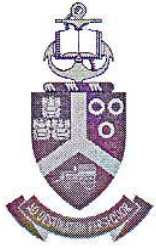


Dr PH du Toit

Hiermee gee ek, [REDACTED], toestemming om deel te neem aan die navorsingstudie. Ek verklaar dat ek vertrouwd is met die inhoud van dié brief en verstaan wat daar van my verwag word. Ek verleen hiermee toestemming tot die video-opname en verklaar dat ek bewus is van die feit dat ek ter enige tyd van die studie kan onttrek.



Handtekening



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Faculty of Education

1 Julie 2011

Beste Toerismestudent

UITNODIGING OM DEEL TE NEEM AAN 'N NAVORSINGSTUDIE AS VRYWILLIGER

Ek, die Departementshoof van Toerismebeheer van Centurion Akademie (hoofkampus), is tans 'n geregistreerde student in M.Ed. Kurrikulum en Instruksionele Ontwerp en Ontwikkeling aan die Universiteit van Pretoria. My navorsing, getiteld "A whole brain approach to mentoring in a Higher Education Tourism Department" (onder leiding van Dr PH du Toit), behels navorsing in die vak Toerismebeheer (TMT206), spesifiek gerig op die Rekeningkundemodule. My versoek aan u, as geregistreerde student vir die vak, is die volgende:


- Voltooiing van 'n kort vraelys na afloop van elke Rekeningkundetema (waar die dosent, me ██████████, geëvalueer word)
- Deelname aan twee klasaanbiedinge van me ██████████ waarvan video-opnames gemaak sal word. Me ██████████ sal verantwoordelik wees vir die opname van die video. Die video-opname word slegs vir navorsingsdoeleindes gebruik. Ek sal ook die klasaanbiedinge bywoon. Die datum en tyd sal later bevestig word en sal deurgegee word deur me ██████████.
- 'n Kort onderhoud (dit sal ongeveer 30 minute duur) na afloop van die klasaanbiedinge met my.
- Die voltooiing van die *Herrmann Brain Dominance Instrument*. Dit is 'n vraelys wat ongeveer 35 minute duur wat aanlyn voltooi word (in julle rekenaarlokaal). Hierdie vraelys analiseer die manier hoe jy dink en leer – en die doel van die navorsing is juis om studente met alle leerstyle te akkommodeer. 'n Verduideliking van u leerstyl sal ook vir u gegee word.

Dit is egter noodsaaklik om u in kennis te stel dat u vrywillig aan die studie meedoën. U mag enige tyd van die studie (gedeeltelik of as geheel) onttrek sou u verkies om dit te doen. U anonimiteit word verseker deurdat u naam nie gepubliseer word nie – daar sal


slegs na studente verwys word as “student 1, student 2, ens”. U sal nie vergoed word vir u bydrae tot die studie nie, maar ek sal wel enige koste met betrekking tot die studie dra.

Indien u enige verdere navrae het rakende die navorsingsproses, kontak my gerus by (012) 683 9978 of by 082 331 0044. Alternatiewelik kan u vir my 'n epos stuur na HScheepers@ca2000.co.za. My studieleier, Dr PH du Toit se kontaknommer is (012) 420 2817 (epos pieter.dutoit@up.ac.za)

Vriendelike groete



Hannelie Scheepers



Dr PH du Toit

Hiermee gee ek, _____, toestemming om deel te neem aan die navorsingstudie. Ek verklaar dat ek vertrouwd is met die inhoud van dié brief en verstaan wat daar van my verwag word. Ek verleen hiermee toestemming tot die video-opname en verklaar dat ek bewus is van die feit dat ek ter enige tyd van die studie kan onttrek.

Handtekening

CENTURION

Banklaan 1023 Bank Ave
CENTURION 0157
Posbus / PO Box 10200
CENTURION 0046
Tel: 012 663-6333
Faks / Fax: 012 663-6404
Web: www.ca.ac.za
E-pos/mail: info@ca2000.co.za

**APPENDIX C****KLERKSDORP**

Chris Hani Weg 37 Chris Hani Rd
Posbus / PO Box 5638
KLERKSDORP 2576
Tel: 018 464 4222
Faks / Fax: 018 464 4200
Web: www.ca.ac.za
E-pos/mail:
caontvangs@koshcom.co.za

16 March 2011

For attention: Ethical Clearance Committee

Faculty of Education
University of Pretoria

Ms Hannelie Scheepers, Head, Department of Tourism, endeavours to undertake research directly related to her profession as Head of Department and lecturer at Centurion Academy. The theme of the research to be undertaken is: *A whole brain approach to mentoring in a Higher Education Tourism Department.*

The institute regards this research as very important and appropriate and supports it fully. The institution shall assist the researcher by providing support and access to any information necessary to successfully undertake the research.

Sincerely

Dr P.J.N. Steyn
Chair: Research Committee



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YUNIBESITHI YA PRETORIA
Faculty of Education

1 Julie 2011

Beste **[REDACTED]**

VIDEO-OPNAME VIR NAVORSINGSDOELEINDES

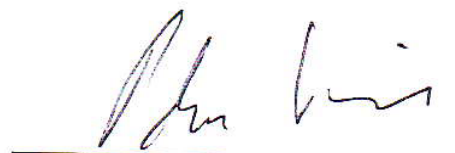
Ek is tans 'n geregistreerde student in M.Ed. Kurrikulum en Instruksionele Ontwerp en Ontwikkeling aan die Universiteit van Pretoria. My navorsing, getiteld "*A whole brain approach to mentoring in a Higher Education Tourism Department*" (onder leiding van Dr PH du Toit), behels heelbreinleer (met betrekking tot Ned Herrmann se studie) wat spesifiek fokus op Rekeningkunde as vak vir Toerismestudente. Die studie betrek hoofsaaklik die dosent en studente geregistreer vir Toerismebestuur II (TMT206) by die Klerksdorp kampus. Die navorsingskomitee van Centurion Akademie het reeds toestemming en ondersteuning tot die navorsingstudie gegee.

Ek versoek hiermee u skriftelike toestemming dat u verantwoordelik sal wees vir twee video-opnames van die betrokke klas. Die tydsduur is ongeveer 'n uur (per opname) en die datum en tyd sal later bevestig word (en sal beide u en die studente en dosente van TMT206 akkommodeer). Alle toerusting sal aan u verskaf word, en indien nodig sal ek ook vir u wys hoe die toerusting werk. Dit is egter noodsaaklik om aan u te beklemtoon dat anonimiteit aan die deelnemers verseker is, en ek versoek dus dat u dit in ag sal neem en sal respekteer.


Indien u enige verdere navrae het rakende die navorsingsproses, kontak my gerus by (012) 683 9978 of by 082 331 **[REDACTED]**. Alternatiewelik kan u vir my 'n epos stuur na HScheepers@ca2000.co.za. My studieleier, Dr PH du Toit se kontaknommer is (012) 420 2817 (epos pieter.dutoit@up.ac.za).

Vriendelike groete


Hannelie Scheepers


Dr PH du Toit

Hiermee gee ek, [redacted], toestemming dat ek twee klasse (soos later met my bevestig) deur middel van 'n videomasjien af te neem. Ek verklaar dat ek vertrouwd is met die inhoud van dié brief en onderneem om die deelnemers se anonimiteit te respekteer.


[redacted]
Handtekening



OOPEINDE VRAELYS VIR “MENTEE” – 1

Beantwoord die volgende vrae asseblief so eerlik en bondig as moontlik.

1. Hoe interpreteer jy jou en jou studente se leerstylprofiel volgens die HBDI?
2. Hoe gaan jy heelbreinleer toepas sodoende te verseker dat jy alle leerstyle akkommodeer?
3. Wat verwag jy van my (as mentor) in ons mentorskapverhouding?
4. Watter beperkinge / struikelblokke verwag jy op hierdie stadium?
5. Wat sal hierdie navorsingsprojek vir jou persoonlike ontwikkeling beteken?
6. Is daar enige verdere vrae / onduidelikhede / kommentaar wat jy op hierdie stadium het / of wil byvoeg?



OOPEINDE VRAELYS VIR “MENTEE” – 2

Beantwoord die volgende vrae asseblief so eerlik en bondig as moontlik.

1. Wat is jou opinie rakende heelbreinleer (na aanleiding van dit wat jy oor die afgelope tyd ervaar het)?
2. Hoe het jy heelbreinleer toegepas sodoende alle leerstyle te akkommodeer?
3. Watter positiewe aspekte kan jy uitlig na aanleiding van heelbreinleer in jou klasomgewing?
4. Watter negatiewe aspekte kan jy uitlig na aanleiding van heelbreinleer in jou klasomgewing?
5. As jy terugkyk op die leerervaring, is daar enige iets wat jy anders sal doen?
6. As jy die leerervaring in ag neem, watter aspek in jou eie praktyk sal jy graag verder wil navors? (deur middel van aksienavorsing?)
7. Hoe het jy die mentorskapverhouding ervaar? Noem positiewe en negatiewe aspekte.
8. Het ek (as mentor) ‘n heelbreinbenadering gevolg tot mentorskap? Reflekteer en motiveer asseblief.
9. Tydens ons eerste onderhoud het jy (a), (b) en (c) (sal ingevoeg word na afloop van eerste onderhoud) identifiseer as struikelblokke / beperkinge. Hoe het jy hierdie struikelblokke en beperkinge hanteer?
10. Het die navorsing bygedra tot jou professionele ontwikkeling? Hoekom / hoekom nie?
11. Is daar enige verdere kommentaar wat jy wil byvoeg?



OOPEINDE VRAELYS VIR STUDENTE - 1

Beantwoord die volgende vrae asseblief so eerlik en bondig as moontlik.

1. Wat is jou leerprofiel volgens die HBDI? Verduidelik aan my hoe jy dit verstaan en interpreteer.
2. Wat is jou gevoel oor Rekeningkunde en hoekom voel jy so daaroor?
3. Waarom dink jy is dit noodsaaklik dat Toerismestudente Rekeningkunde moet doen?
4. Dink jy die vak kan aangebied word dat alle studente daarvan sal hou? Hoekom / hoekom nie?
5. Hoe wil jy hê moet die dosent die vak aanbied?
6. Watter klasse geniet jy die meeste (oor die algemeen). Hoekom?
7. Watter klasse geniet jy die minste (oor die algemeen). Hoekom?



STUDENTE VRAELYS

Voltooi asseblief die volgende vraelys deur die volgende skaal te gebruik:

1 altyd 2 gereeld 3 nie so gereeld nie 4 nooit nie

Trek slegs 'n kruisie op die gepaste nommer by elke vraag. Neem kennis dat die vraelys anoniem voltooi word. Wees asseblief so eerlik as moontlik.

TEMA BEHANDEL: _____

LEERSTYL PROFIEL VOLGENS DIE HBDI: _____ (Bv 2212)

1.	Tydens die tema het die dosent gebruik gemaak van die handboek.	1	2	3	4
2.	Tydens die tema het die dosent praktiese scenarios gebruik om die tema te verduidelik.				
3.	Tydens die tema het die dosent geleentheid gegee vir groepsbesprekings.				
4.	Die dosent het die tema spontaan en prettig aangebied.				
5.	Die leergeleenthede tydens elke klasaanbieding in hierdie tema het bygedra om elke leerstyl te akkommodeer				
6.	Hoe gereeld woon jy klas by?				
7.	Die leerervaring en -geleenthede help my om die werk beter te verstaan.				

8. Tydens die aanbieding van die tema, watter deel het jy die meeste geniet? _____

9. Tydens die aanbieding van die tema, watter deel het jy die minste geniet? _____

1. INTRODUCTION

I would briefly wish to communicate my research questions and the “plan of action” (action research) that you should adopt in your practice. This research study focuses on improving both our practices by means of following a whole brain approach.

2. RESEARCH QUESTIONS

My research questions are formulated as follows:

2.1 Primary research question:

- How can a whole brain approach assist in the effectiveness of mentoring and can it improve both the mentee’s and my own practices? (This research question partly applies to you)

2.2 Procedural research questions:

- What is my thinking style preference?
- What is the thinking style preference of the mentee? (Applicable to you)
- What are the thinking style preferences of the mentee’s students? (Applicable to you)
- How can the mentee address thinking style preferences in order to improve her practice? (Applicable to you – very important – this is basically your research question for the study)
- How can the mentee, and I as mentor, use the principles of action research to monitor our professional development? (Applicable to you – very important – this is also a research question for your the action research study)
- What are the challenges of the mentoring relationship and how can it be dealt with? (Applicable to you)

3. MENTEE’S RESPONSIBILITY WITH REGARDS TO ACTION RESEARCH

A variety of action research models and cycles exist that can be followed [Lewin’s spiralling cycling process; Kemmis’ representation of the action research spiral; Calhoun’s Action Research Cycle; Wells’ Idealized Model of the Action Research Cycle; Stringer’s Action Research Interacting Spiral;

Sagor's seven-step process; Stringer's Action Research Sequence (Mills 2003; Stringer 2004)]. Action research is basically a process of planning, acting, observing and reflection (Zuber-Skerritt 1992:11; Hodgkinson & Maree 1998:52). This cyclical process can be seen in Figure 1.

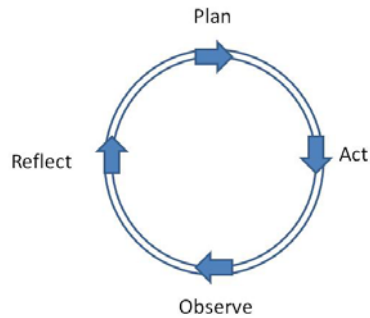


Figure 1: Action Research Model (Zuber-Skerritt, 1992:13)

Now that you are aware of your own and your students' thinking style preferences (Herrmann Whole Brain model) you are required to conduct action research according to the following:

3.1 Planning to improve

You will improve your practice through applying creative thinking in your class environment (teaching and assessment methods). Whole brain thinking and learning should therefore be enhanced. You have to plan with regards to the various Accounting themes how you will enhance whole brain thinking and learning.

3.2 Acting to improve

You will be required to adapt your teaching and assessment methods to enhance whole brain thinking and learning.

3.3 Observing the effects of new actions

Observe students' attitudes continuously, record their marks (even if it is for assignments that do not form part of their final continuous assessment mark), video record some of your classes to analyse yourself. Obtain as many data as possible.

3.4 Reflecting on the change process and improvements

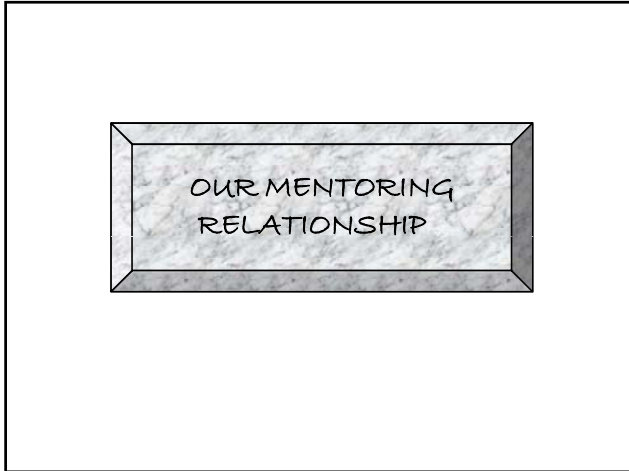
Reflection is an on-going process and a lecturer should reflect continuously during the study (Mills 2003:103). Self-reflection during the study will help you continuously to think about what you are doing and to become critical about what you are doing (and why you are doing it) (McNiff & Whitehead 2005:70) in order to find ideas that can be applied as possible solutions for the initial problem (Stringer 2004:97). Continuous self-reflection may also identify aspects that you might be leaving out (Mills 2003:103) and will therefore help you to develop the correct techniques for your research (Anderson 1994:156).

You will be required to reflect on your learning experience and your implementation of whole brain learning and teaching (in terms of class lectures, assessment opportunities, and observations made in your class). You should also reflect on student feedback questionnaires.

The spiral effect of the action research process implies that, during reflection, you might identify additional innovative ideas to explore or aspects which you wish to improve for the next Accounting themes.

4. OUR MENTORSHIP RELATIONSHIP

I have used a metaphor to explain the way I see our mentorship relationship. Click [HERE](#).



Our mentoring relationship ...

- ... may sometimes expect us to rest for a while and reflect on our journey thus far ...



Our mentoring relationship ...

- ... has a wonderful, beautiful reward ... (but it is a challenging journey to get there) ...



Our mentoring relationship ...

- ... will emphasise the support we offer each other
- ... has one focus ... we will learn from each other (we will experience the same journey, but will encounter different experiences)



HERRMANN WHOLE BRAIN MODEL (ADAPTED FROM LUMSDAINE AND LUMSDAINE 1995)

QUADRANT A THINKING

Left cerebral hemisphere - theorists

Logical; factual; critical; technical; analytical; quantitative; dissecting, figuring out, solving problems logically, and getting facts

It deals with data analysis, risk assessment, statistics, financial budgets, and computation, as well as analytical problem solving and making decisions based on logic and reasoning.

A quadrant A culture is materialistic, academic, and authoritarian. It is achievement-oriented and performance-driven.

A-only is a master of logic and reason: At his best he is constantly processing new information, even if it assails the validity of a treasured formula. The definition of reality is of prime importance, and no fact should long lack explanation for its existence. A-only's output takes the form of principles, mathematical formulas, and conclusions about where to go next. His abilities to generalise from the specific and verbalise those generalisations make him an ideal technical problem solver (Herrmann 1995:79).

Preferred learning activities: If you are an A-quadrant thinker, you prefer to learn and behave in this way:

- Collecting data and information
- Organising information logically in a framework, not to the last detail
- Listening to informational lectures
- Reading textbooks (most textbooks are written for Quadrant A thinkers)
- Studying example problems and solutions
- Thinking through ideas
- Doing library searches
- Doing research using the scientific method
- Making up a hypothesis, then testing it to find out if it is true
- Judging ideas based on facts, criteria, and logical reasoning
- Doing technical case studies
- Doing financial case studies
- Dealing with hardware and things, rather than people
- Dealing with reality and the present, rather than with future possibilities
- Travelling to other cultures to study technological artifacts

Activities for practicing quadrant A Thinking

- Collect data and information about a particular subject or problem
- Organise the collected information logically into categories
- Develop graphs, flowcharts, and outlines from data and information
- Do a library search or patent search on a special topic of interest
- Find out how a frequently used machine actually works by reading about it

- Take a broken small appliance apart: find out about the function of each part
- Take a current problem situation and analyse it into its main parts
- Review a recent impulse decision and identify its rational, logical aspects
- Analyse some politicians running for office – where do they stand on the issues?
- Join an investment club
- Do logic puzzles or games
- Play chess
- Learn how to use an analytical software package or programme on your computer
- Play “devil’s advocate” in a group decision process
- Write a critical review based on logical reasoning of your favourite TV programme, movie, essay, poem, book, or work of art

DISTINGUISH BETWEEN A AND B: B-only differs from A-only in several significant ways. Where A-only focuses on facts, logic, and the here-and-now, B-only wants to know what has worked in the past (“if it worked before, it will work again”). A-only devises formulas, B-only tests them down to the last jot and tittle. B-only is basically action-oriented and may therefore have little patience or respect for the intellectual complexities that A-only finds so compelling (Herrmann 1995:80).

QUADRANT B THINKING

Left limbic system – organisers

Conservative; structured; sequential; organised; detailed; planned; action-oriented

Quadrant B thinking is organised, sequential, controlled, planned, conservative, structured, detailed, disciplined, and persistent. It deals with administration, tactical planning, organisational form, safekeeping, solution implementation, maintaining the status quo, and the “tried-and-true”.

B-only’s world is where there is a rule and a place for everything: it is a neat, dependable world, where decisions are made according to long-established procedures. B-only’s efficiency has to do with making sure things are done on time and correctly to the last detail the first time around. They also have the ability to focus on one thing at a time – perfection in detail (Herrmann 1995:81).

Preferred learning activities:

- Following directions instead of trying to do something in a different way
- Doing repetitive, detailed homework problems
- Testing theories and procedures to find out what is wrong with them
- Doing lab work, step by step
- Writing a sequential report on the results of experiments
- Using a programmed learning and tutoring
- Finding practical uses for knowledge learned – theory is not enough
- Planning projects; doing schedules, then executing according to plan
- Listening to detailed lectures
- Taking detailed notes
- Making time management schedules – the schedule is important, not people
- Making up a detailed budget

- Practicing new skills through frequent repetition
- Taking a field trip to learn about organisations and procedures
- Writing a “how-to” manual about a project

Activities for practicing quadrant B thinking

- Learn a new habit through planning and self-discipline
- Cook a new dish by following the instructions in a complicated recipe
- Use a “programmed learning” software package to learn something new
- Plan a project by writing down each step in detail; then do it
- Assemble a model kit by instruction (or a piece of modular furniture)
- Develop a personal budget, then keep it for two weeks
- Prepare a personal property list; then put it into a safe-deposit box
- Set up a filing system for your paperwork and correspondence
- Organise your desk drawer or clothes closet
- Organise your records, disks, books, photographs, or collection
- Prepare a family tree, or play Scrabble
- Find a mistake in your bank statement or monthly bills
- Be exactly on time all day
- Visit a hands-on museum; follow the directions for all the activities
- Learn time management skills – read a self-help book and then do what it says

QUADRANT C THINKING

Right limbic system – humanitarians

Interpersonal; kinaesthetic; emotional; spiritual; sensory; feeling; sensitive; receptive

Quadrant C thinking is sensory, kinaesthetic, emotional, interpersonal (people-oriented), and symbolic. It deals with awareness of feelings, body sensations, values, music, and communications; it is needed for teaching and training.

C-only sops up experience like a sponge – about mood, atmospheres, attitudes, and energy levels. A C-only is concerned with reality of emotional currents. When the mood of an individual or group changes, C-only is immediately aware of the change and is ready to respond to it (Herrmann 1995:82).

Preferred learning activities:

- Listening to and sharing ideas
- Motivating yourself by asking “why” – looking for personal meaning
- Experiencing sensory input – moving, feeling, touching, smelling, tasting
- Using group-study opportunities and group discussions
- Keeping a journal to record feelings and spiritual values, not details
- Doing dramatics – the physical acting out is important, not imagination
- Taking people-oriented field trips
- Travelling to other cultures to meet people; hosting a foreign student

- Studying with classical background music' making up rap songs
- Using people-oriented case studies
- Respecting others' rights and views; people are important, not things
- Learning by teaching others
- Learning by touching, feeling, and using a tool, object, or machinery
- Reading the preface of a book to get clues on the author's purpose
- Preferring video to audio to make use of body language clues

Activities for practicing quadrant C thinking

- Get together with a friend, share your feelings about a topic or issue
- When in a conversation, spend most of the time listening to the other person
- Study in a group, or do a group project
- Get involved in a play or musical, or do charades at a party
- Compose a song, then get someone to sing it
- Get involved in a new sport or exercise activity
- Play with a small child the way he / she wants to play
- Adopt a pet from the local animal shelter
- Allow tears to come to your eyes without feeling shame or guilt
- Think about what other people have done for you and find a way to thank them
- Become a volunteer in your community on an environmental issue
- Get involved in a programme that teaches adults to read
- Get involved in a Big Brother / Big Sister programme or in scouting
- "Adopt" an elderly person, or help with "Meals on Wheels"
- Become a tutor or mentor to a disadvantaged child or a fellow student
- Get to know your neighbours – get together and have a block party
- Explore your spirituality. Read the religious documents of the major faiths
- Join a church choir, a barbershop quartet, a square dancing club
- Savour a vegetable or fruit that you have never tasted before; grow and use herbs
- Grow flowers; make artistic bouquets and cheer up someone who is lonely
- Enjoy a walk in nature; pay attention to sounds, smells, and other sensory input
- Use artwork, colours, and accessories to create a specific "mood" in a room
- Take a seminar on how to communicate or express your feelings better
- Find a pen pal from another country or a different culture
- Make time for family meals – think up a reason to have a special celebration
- Play a musical instrument "playfully"; learn to enjoy a different style of music

QUADRANT D THINKING

Right cerebral hemisphere – innovators

Visual; holistic; intuitive; innovative; conceptual; imaginative

Quadrant D thinking is visual, holistic, innovative, metaphorical, creative, imaginative, conceptual, special, flexible, and intuitive. It deals with futures, possibilities, synthesis, play, dreams, vision, strategic planning, the broader context, entrepreneurship, change and innovation.

D-only thrives on the excitement of new ideas, possibilities, variety, oddities, incongruities, and questions that sound obvious but actually go to the heart of the matter. D-only doesn't have many words, they have pictures. They do not usually understand anything (not even themselves) – but experience is more valuable than understanding (Herrmann 1995:85).

Preferred learning activities:

- Looking for the big picture and context, not the details, of a new topic
- Taking the initiative – getting actively involved
- Doing simulations – asking what-if questions
- Making use of the visual aids in lectures
- Doing problems with many possible answers
- Appreciating the beauty in the problem (and in the solution)
- Leading a brainstorming session – wild ideas, not the team, are important
- Experimenting; playing with ideas
- Thinking about trends
- Thinking about the future
- Relying on intuition, not facts or logic
- Synthesizing ideas and information to come up with something new
- Using future-oriented case discussions
- Trying a different way of doing something just for the fun of it

Activities for practicing quadrant D thinking:

- Look at the big picture, not the details, of a problem or issue
- Make a study of a trend; then predict at least three different future developments
- Ask what-if questions and come up with a lot of different answers
- Allow yourself to daydream
- Make sketches to help you memorise material that you are learning. Create a logo
- When solving problems, find two or three different ways to do them
- Do problems that require brainstorming; find at least ten possible answers
- Appreciate the “beauty” of a design: building, appliance, object
- Play with Tinkertoys, Skill Sticks, Lego
- Learn to paint, sketch, draw: play with modelling clay. Take an art class
- Attend a “story-telling” session; read a book of folktales or myths; participate in role-playing games
- Design and build a kite. Fly the kite the way it is meant to be flown
- Invent a gourmet dish and then prepare it
- What time of day are you the most creative? Use this time to think up and jot down ideas, then take the next afternoon off to further explore one of these creative ideas
- Take a drive (or walk) to nowhere in particular without feeling guilty
- Take 200 photographs without worrying about cost; try unusual shots
- Imagine yourself in the year 2000, 2020, 2040
- Investigate how a particular subject can be connected to other things you know
- Use analogies and metaphors in writing or when explaining a concept or idea

OTHER INTERESTING FACTS:

- Only 7% of the population has a single dominant profile (one primary preference); whereas 60% has double dominant primary preferences and 30% has triple dominant preferences. Less than 3% of the population has a quadruple dominant profile (1-1-1-1) (Herrmann 1995:86).
- Lumsdaine and Lumsdaine (1995) identify the following four modes of students' learning:
 - External learning is related to teaching from authority through lectures and text books. It is predominantly A-quadrant learning.
 - Internal learning can be described as an insight, a visualisation, the synthesis of data or through the understanding of concepts holistically or intuitively. This is predominantly D-quadrant learning.
 - Interactive learning is brought about by discussion, hands-on activities and sensory-based experiments where a student can try, fail, retry with an opportunity for verbal feedback and encouragement. Interactive learning is predominantly C-quadrant learning.
 - Procedural learning is characterised by a methodical step-by-step testing of what is being taught, as well as practice and repetition to improve skills and competence. It is predominantly B-quadrant learning.
- Certain combinations of preferences are more harmonious than others, especially the 'left-brain' combination of A and B quadrants and the 'right-brain' combination of D and C quadrants. Conflict is more likely to arise between 'diagonal' quadrants (D/B and A/C) (Coffield, Moseley, Hall & Ecclestone 2004).

APPENDIX I

Example of Mentees Action Research - Accounting theme 4

BANKREKONSILIASIE

STAP 1: BEPLANNING

1. Algemene Les Beplanning	-Werk rofweg uit watter metodes gebruik moet word om al 4 kwadrante in die les te akkommodeer
2. Beplanning vir Kwadrant A	-Berei raamwerk voor uit handboek wat studente kan gebruik om die werk vir hul makliker te maak -Rol formaat van die bankrekonsiliasie vir studente af -Handboek sal gebruik word vir die eerste klasoefening -Stel verskeie (4) gevallestudies op wat gebruik gaan word vir individuele klasoefeninge en huiswerk.
3. Beplanning vir Kwadrant B	-Stel genoeg klasoefeninge op wat sal dien as herhaling van die tema -Konsepte sal verbaal herhaal word en kort-kort aan studente gevra word -Indien studente sukkel met sekere transaksie sal daardie transaksies uitgewys word en herhaldelik geoefen word -Kry A4 koeverte waarin studente al hul notas rakende bankrekonsiliasie bymekaar kan hou en kan bere.
4. Beplanning vir Kwadrant C	-Maak gebruik van kleur in die powerpoint bv. Bankrekening blou te maak en Bankstaat rooi te maak sodat student onderskeid kan tref -Berei inleiding so voor dat dit die vraag Hoekom bankrekonsiliasies gedoen word sal beantwoord -Met eerste klasoefening waar handboek gebruik gaan word sal studente in twee groep verdeel word, waar die een groep sal dien as ABSA en die ander groep as die BESIGHEID =groepswerk.
5. Beplanning vir Kwadrant D	-Terugvoer op klasoefening en huiswerk sal geskeid deur studente individueel in die klas vir die antwoord te vra = deelname -Powerpoint voorlegging sal gebruik word om tema, terme en formaat te verduidelik. -Prentjies sal in powerpoint gebruik word om BANK en BESIGHEID te onderskei

STAP 2: UITVOERING

1. Stap 1	Powerpoint (kleur) met inleiding hoekom rekonsiliasies gedoen word, konsepte en raamwerk te verduidelik. Maak gebruik van prentjies.
2. Stap 2	Gebruik handboek vir raamwerk en deel formaat van bankrekonsiliasie uit
3. Stap 3	Vra individue die verskeie konsepte om te sien of hul verstaan
4. Stap 4	Deel studente in twee groep (Bank/Besigheid) – gebruik Oef.4.1 in die handboek. “Bank” laat weet “Besigheid” wat hul kort of watter foute hul gemaak het en vica versa.
5. Stap 5	Individuele klasoefening 1 word uitgedeel en in klas gedoen. Terugvoer word gegee in klas deur studente antwoorde te vra.
6. Stap 6	Individuele klasoefening 2 word uitgedeel vir huiswerk. Studente handig oefening in voor volgende kontakssessie. Merk en gee vir hul terugvoer.
7. Stap 6	Individuele klasoefening 3 word in klas voltooi. Terugvoer word in klas gegee deur studente antwoorde te vra en reg te help waar nodig.
8. Stap 7	Individuele oefening 4 word uitgedeel vir huiswerk. Studente handig oefening in voor volgende kontakssessie. Merk en gee vir hul terugvoer.

STAP 3: OBSERVERING

- Studente het powerpoint afgeskryf en het gesnap waarom bankrekonsiliasies gedoen word.
- Toe studente in groepe (ABSA / GOLD REEF CITY) verdeel word was daar eers verwarring en het studente meer op hul eie gewerk as in `n groep.
- Om konsepte herhaaldelik in die klas te vra het gehelp om hul op hul tone te hou, wel gesien dat hul nie die formaat van bankrekonsiliasie goed ken nie. Dus besluit om elke periode klein toetsie te skryf oor formaat totdat hele klas dit reg het.
- Terugvoer op klasoefening was goeie aanduiding om te sien of studente dit werklik verstaan.
- Klasoefening 3 het plaasgevind in groepsverband, omdat studente nie eerste oefening so goed in groep saam gewerk het nie. Elke student het `n transaksie gekry om aan die

groep te verduidelik terwyl een student die antwoorde neerskryf soos wat hul op die finale antwoord besluit. Toe hul dit voltooi het ek elke transaksie weer saam met hul deur gegaan en persoon wat neergeskryf het moes dan hul antwoord merk.

- Twee van die studente het siek geword en kon nie al die kontakssessies bywoon nie. Sessie is met hul gereel om die werk aan hul te verduidelik voorda hul die klasopdrag doen wa hul gemis het.
- Punte vir klasopdrag:

Burger , Tiaan	20108002	90
Fritz , Gunther	20098005	96
Niemand , Charne	20108003	90
Potlusea , Sharon	20108008	80
Smit , Johannes	20108006	A
Van Aawegen , Jeanne	20108001	A
Van den Berg , Heide-Marie	20108007	58

- Na klasopdrag is daar aan studente gevra of hul seker is oor al die werk en van die studente het voorgestel dat ons voor die semestertoets nog een hersieningsklas oor die tema moet hê.

STAP 4: REFLEKTEER

- Groepsbesprekings of opdragte sal anders benader word : sal dat studente eers `n oefening op hul eie doen en dan met volgende oefening dit in groepsverband laat doen. Sodat studente meer bekend is met die tema en nie mekaar verwar en benoud maak nie.
- Die klein-toetsies het verseker gehelp om studente te forseer om die formaat te leer. Sal in toekoms weer gebruik maak van informele toetse om leerwerk onder die knie te kry.
- Besef dat herhaling baie belangrik is om studente meer sekerheid te gee rondom tema.

BANKREKONSILIASIE



Wat is bankrekonsiliasie??

- Bankrekening (**Besigheid**) en Bankstaat (**Bank**) moet ooreenstem met mekaar
- Dit wat uitstaande is of foutief is moet by beide reggemaak word
 - Bankrekening= bankrekening
 - Bankstaat = Bankversoening/rekonsiliasie**



BANK vs BESIGHEID

Bankrekening = Besigheid

KOI = DT
KBJ = KT

Bankstaat = Bank

Bank skuld besigheid = KT
Besigheid skuld bank = DT



Bankrekening

- Wat op bankstaat verskyn maar nie in bankrekening
- Foute wat besigheid gemaak het (wie se skuld?)
- Hanteer soos gewone T-rekening

Bankversoening

- Wat op bankrekening verskyn maar nie op bankstaat
- Foute wat bank gemaak het (wie se skuld?)
- Sekere formaat

	Debiet Debit	Krediet Credit
Balans per bank-staat Balance per bank statement		xxx
Debiteer uitstaande teke Debit outstanding cheques:		
Tjek ### Cheque ###	xxx	
Tjek ### Cheque ###	xxx	
Krediteer uitstaande deposito Credit outstanding deposit		xxx
Debiteer foutewelike deposito Debit faulty deposit		
Krediteer foutewelike tjek Credit faulty cheque		xxx
Balans van bankrekening Balance of bank account	xxx	
	xxx	xxx

NB!!!

- Moet 1ste bankrekening uitwerk voordat Bankrekonsiliasie kan doen.

Klasoefening 1

- Bl 52 – 53 Oefening 4.1
- Deel in 2 groepe (**Bank & Besigheid**)
- Elk maak lys van dit wat nie by hul verskyn nie wat by ander verskyn
- Maak lys van foute wat “joune” was

Example of Feedback - Accounting theme 3

TERUGVOER: BRONDOKUMENTE EN JOERNALE

1. ALGEMEEN

1.1 HOE PAS JOU AKSIE-NAVORSING IN BY HEELBREINLEER

A-KWADRANT ONTWIKKELING: AKSIE NAVORSING IS GEBASEER OP NAVORSING

B-KWADRANT ONTWIKKELING: JY WORD VERPLIG OM DEEGLIK TE BEPLAN EN OM JOU AKSIE NAVORSINGSPROSES DEURLOPEND TE MONITOR

C-KWADRANT ONTWIKKELING: DIT FOKUS OP JOU PERSOONLIKE ONTWIKKELING

D-KWADRANT ONTWIKKELING: JY DINK HOLISTIEË EN EKSPERIMENTEER MET INNOVERENDE IDEES

2. TERUGVOER: AKSIENAVORSINGSTAPPE

2.1 STAP 1 – BEPLANNING

Die uiteensetting van beplanning word tipies gekenmerk aan Kwadrant B. Na vorige terugvoer het jy besluit om een van jou gevallestudies (“Quiz”) in groepsverband te doen, sodoende Kwadrant C te betrek. Die manier hoe jy jou beplanning gedoen het, werk goed.

2.2 STAP 2 – UITVOERING

Hier het ek die voorreg gehad om jou klas by te woon en addisionele aantekeninge te maak. Ek gee die volgende terugvoer na aanleiding van my waarneming in die klas en na aanleiding van jou notas by die “uitvoeringstap”:

- Jy het verwys na jou vorige klas waar jy ‘n praktiese voorbeeld gebruik het ter verduideliking en verwys het na “bier”. Dit verwys na kwadrant B.
- Die ses stappe wat jy gebruik het ter verduideliking (tipies kwadrant B) is ook logiese stappe wat gevolg word (kwadrant A). Jy kan egter die stappe op die *slides* aanbring, of selfs ‘n dokument aan studente uitdeel met die stappe (kwadrant A).
- ‘n Powerpoint-voorlegging is gebruik – dui op goeie beplanning (kwadrant B)
- Jou Powerpoint-voorlegging het goeie voorbeelde gebruik vir Kwadrant D-ontwikkeling. ‘n Prentjie is getoon waar jy ‘n situasie geskep het (verbal). Die student moes dus die scenario visualiseer (kwadrant D) en ‘n logiese afleiding (kwadrant A) maak. ‘n Goeie praktiese verduideliking ten opsigte van aankope op krediet (krediteure - K) en verkope op krediet (debiteure – D) is gemaak (kwadrant B)
- Jou aanvanklike idee om die een gevallestudie in groepsverband te doen, het toe opgeëindig in individuele antwoorde. ‘n Voorstel in die verband is dat studente saam die gevallestudie moet doen – sodoende dit aan mekaar te verduidelik en vir mekaar vrae te vra indien hulle nie iets verstaan nie (Kwadrant C-ontwikkeling). Een student het, nadat jy hulle gevra het of hulle eerder saam sou wou werk, genoem dat dit beter is dat hulle alleen wil werk, aangesien hulle dan sal kan bepaal waar hulle sukkel. Met my waarneming kon ek sien dat wanneer van die studente vashaak, hulle eerste reaksie was om vir ‘n ander student te vra om te help. Tydens my onderhoud met die studente het hulle ook erken dat hulle in sekere gevalle vir ‘n mede-student om hulp wil vra. ‘n Voorstel is dus om ‘n paar opdragte in

groepsverband uit te deel sodat studente dit eers saam uitstoei. Jy kan selfs 'n opdrag vir hulle in groepsverband gee waar hulle die transaksies moet saamstel (die opdrag saamstel).

- Vir kwadrant C-ontwikkeling kan jy die aandag van jou as dosent verskuif na die studente. Laat hulle toe om die klas aan te bied; opdragte uit te werk en terugvoer vir mekaar te gee. Jy tree dus slegs as fasiliteerder op.

2.3 STAP 3 – OBSERVERING (WAARNEMING)

Voorstelle vir addisionele waarneming:

- Bepaal watter studente se aandag nie ten volle by jou aanbieding* is nie. Neem in ag wat jy op daardie stadium bespreek het, watter *thinking style preference* (kwadrant ontwikkeling) jy op gefokus het, en vergelyk dit met die student se profiel. (Bv, 'n student wat nie 'n "1" *preference* vir kwadrant A het nie, kan makliker afdwaal wanneer jy na die handboek / geskrewe dokument verwys).
- Identifiseer aspekte in jou aanbieding* waar jy studente se volle aandag het (of identifiseer die studente wie se aandag by jou is). Vergelyk dit met die student se profiel.

* Aanbieding sluit assessering, opdragte en klasbesprekings in

- Dui die klasbywoningpersentasie van elke student aan – dit kan ook 'n effek op 'n student se punte hê.

2.4 STAP 4 – REFLEKTERING

Jou reflektoring behoort jou rigting te bied na jou beplanning vir die volgende tema. Jy kan ook reflekteer oor die waarde van die aksienavorsingsprojek tot dusver – vanaf die beplanningsfase, hoe en hoekom jy tussendeur besluit het om sekere aspekte te verander (indien van toepassing), hoe die kwadrant-ontwikkeling jou denkwysse verander het ens.

3. OPSOMMING: BRONDOKUMENTE EN JOERNALE

Goeie kwadrant-ontwikkeling en uiteensetting van aksienavorsingstappe. Vir my weerspieël dit reeds dat jy in terme van "heelbrein" begin dink. Vir jou beplanning vir Bankrekonsiliasie (die volgende tema) kan jy voortbou op jou eie reflektoring en die voorstelle wat aan jou gebied is.



Groepname: _____

Studentenommers: _____

PROJEK INLIGTING:

'n Eenmansaak word gestig en die volgende word vereis:

- 1) Stel enige VYFTIEN transaksies saam wat van toepassing is vir die eerste maand op jou besigheid. Transaksies wat egter gedek moet word is transaksies met betrekking tot:
 - a. Verkope aan 'n debiteur
 - b. Debiteure wat skuld vereffen (met afslag)
 - c. Oninbareskuld (kredietverlies)
 - d. Kontantverkope
 - e. Krediet aankope
 - f. Skuld vereffen aan 'n krediteur

Neem kennis dat daar slegs na EEN debiteur en EEN krediteur verwys mag word.

- 2) Stel 'n rekeningkundige vergelyking op vir die transaksies in tabelformaat. Die volgende kolomme moet voltooi word: Rekening debiteer, rekening krediteer, bates, eienaarsbelang, laste en brondokument. Dui aan of bates, eienaarsbelang en/of laste vermeerder of verminder.
- 3) Stel 'n proefbalans op vir die besigheid se eerstemaand.
- 4) Voltooi die joernaalinskrywings van die transaksies (KOJ, KBJ, DJ en KJ)
- 5) Voer die transaksies prakties uit deur middel van rolspel. Tydens die rolspel sal 'n ander groep toegewys word wat die T-rekening van die rolspel moet identifiseer.

ASSESSERINGSKRITERIA	PUNT	TERUGVOER
Saamstel van transaksies	15	
Rekeningkundige vergelyking	45	
Proefbalans	30	
Joernale	15	
Rolspel	15	
Identifisering van T-rekeninge	15	
Tegniese versorging	5	
Totaal	140	



OPEINDE VRAELYS VIR STUDENTE (GROEP) - 2

HBDI profiele: _____

Beantwoord die volgende vrae asseblief so eerlik en bondig as moontlik.

1. Het julle gevoel oor Rekeningkunde verander gedurende die jaar? Hoekom / hoekom nie?
2. Wat het julle die meeste geniet van die dosent se aanbieding? Hoekom?
3. Waarvan het julle die minste gehou tydens die dosent se aanbieding? Hoekom?
4. Wat kan die dosent doen om die vak nog meer interessant en lekkerder te maak?
5. Enige kommentaar wat julle wil byvoeg?

APPENDIX M

HERSIENING

STAP 1: BEPLANNING

<p>1. Algemene Les Beplanning</p>	<ul style="list-style-type: none"> -Berei verbale inleiding voor oor hersiening wat gedoen gaan word volgens tema's. -Stel oefeninge op vir elke tema en werk memo uit en druk uit vir studente -Studente gaan in groepe van twee gedeel word, elke student kry die oefeninge soos per tema uitgewerk. -Elke groep kies watter tema hul vir die ander groepe wil verduidelik. -Elke groep werk al die oefeninge uit. -Dosent (Fasiliteerder) maak beurte om by elke groep te sit en te fasiliteer waar nodig. -Nadat almal oefeninge voltooi het en fasiliteerder seker gemaak het groepe verantwoordelik vir 'n tema se antwoorde is korrek – gaan groep verantwoordelik vir tema aan mede studente hul antwoorde verduidelik.
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STAP 2: UITVOERING

1. Stap 1	Skryf tema's op bord neer wat hersien gaan word
2. Stap 2	Verduidelik hoe groepe gaan werk en wat verwag word
3. Stap 3	Deel hersieningsoefeninge uit
4. Stap 4	Loop tussen studente deur en help hul soos wat hul vrae het
5. Stap 5	Soos groepe klaar maak gaan ek gou oefening deur om seker te maak hul antwoorde is reg voordat hul dit aan die ander studente verduidelik
6. Stap 6	Elke groep kry spreekbeurt om hul afdeling aan ander te verduidelik

STAP 3: OBSERVERING

- Studente in een groep het nie regtig saam gewerk nie.
- Studente het hul nota's gebruik soos wat dit in hul A4 sakkies geliaseer was.
- Hul het van die transaksies uit geredeneer en mekaar herhinner aan die vangplekke wat daar is.
- Hul het my groep wanneer hul vashaak en dan het ek dit aan verduidelik en hul dan weer gevra of hul verstaan hoekom dit so gedoen word.

STAP 4: REFLEKTEER

- Dit het studente op die ou einde van die dag meer selfvertroue gegee om die werk self deur te gaan, want nou weet hul hul is in staat om dit op hul eie te doen.
- Was goed om te sien waarmee hul nog sukkel sodat mens dit dadelik kan aanspreek en enige onduidelik uit die weg ruim.

BRONDOKUMENTE & JOERNALE-EKSAMEN HERSIENING

Wanneer word die volgende brondokumente gebruik?

Duplicate Receipt: _____

Cash Register Slip: _____

Duplicate Credit Sales Invoice: _____

Original Credit Purchase Invoice: _____

Cheque Counterfoil: _____

Skryf die 4 joernale se name neern soos wat hul bo-aan elke joernaal sal verskyn vir
bv. Kaptein Verspreiders se joernale vir April 2011 (eerste maand in besigheid).

TRANSAKSIES VIR APRIL 2011 / TRANSACTIONS FOR APRIL 2011

1. Die eienaar, Gideon Basson, begin 'n besigheid en deponeer R600000 kontant in die bankrekening van die besigheid. / *An owner, Gideon Basson, starts a business and deposits R600000 cash in the bank account of the business.*
2. Koop grond en geboue kontant van Binneland Eiendomme, R200000. / *Land and buildings are purchased cash from Binneland Properties, R200000.*
3. Ontvang R1 500 kontant van P.Venter vir die huur van 'n kantoor. / *Receive R1 500 cash from P. Venter for the rent of an office.*
4. Verkoop voorraad op krediet aan C. Beukes, R450 (50% kosprys). / *Sell inventory on credit to C. Beukes, R450 (50% cost price).*
5. C. Beukes betaal R300 van sy skuld aan die besigheid. / *C. Beukes pays R300 of his debt to the company.*
6. Verkry 'n langtermyn lening van Nedbank, R500 000. / *Obtain a long-term loan from Nedbank, R500 000.*
7. Betaal 5 % van die langtermyn lening aan Nedbank. / *Pay 5 % of the long-term loan to Nedbank.*
8. Verkoop 'n voertuig op krediet aan H. Van Zyl, R50 000. / *Sells a vehicle on credit to H. van Zyl, R50 000.*
9. Betaal die water- en elektrisiteitrekening aan die Tshwane Munisipaliteit met 'n tjek, R550. / *Pay the water and electricity bill to the Tshwane Municipality by cheque, R550.*
10. Betaal 'n krediteur, Oppiekoffie, R1 500 ter afbetaling van die rekening van R1 600. / *Pay a creditor, Oppiekoffie, R1 500 in full settlement of his account of R1 600.*

11. Betaal R1 000 rente op die lening aan Nedbank. / *Pay R1 000 interest on the loan to Nedbank.*
12. Die eienaar neem R500 kontant vir sy eie gebruik. / *The owner took cash with the value of R500 for his own use.*
13. Volgens die kasregisterrol is R800 se voorraad verkoop (50% kosprys). / *According to the cash register slip, inventory of R800 is sold (50% cost price).*
14. Koop voorraad op krediet van Malan Verspreiders, R3000. / *Purchase inventory on credit from Malan Distributors, R3000.*

	Brondokument	Joernaal
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		



TOURISM MANAGEMENT
ACTION RESEARCH STEPS
AND
WHOLE BRAIN STRATEGIES
CHECKLIST



SUBJECT: _____

DESCRIPTION: _____

NOTE: The checklist is only used as a guideline to ensure that whole brain thinking and learning strategies are adapted. Recordings of each step should be made on a separate document.

CHECKLIST	√
STEP 1: PLANNING (pertaining to whole brain strategies)	
Quadrant A (select at least two strategies)	
<ul style="list-style-type: none"> • Fact-based lectures • Analytical and critical thinking • Reference books, text books and additional readings • Case studies • Applied logic • Theories 	
Quadrant B (select at least two strategies)	
<ul style="list-style-type: none"> • Checklists, timelines • Worksheets • Summaries • Exercises with steps • Structured problem solving with steps • Clear examples 	
Quadrant C (select at least two strategies)	
<ul style="list-style-type: none"> • Group chats (e.g. WhatsApp) • Storytelling • Small group and team learning • Role playing • Sharing personal experiences • Listening and sharing ideas • Music • Physical/kinaesthetic activities • Cooperative learning 	
Quadrant D (select at least two strategies)	
<ul style="list-style-type: none"> • Brainstorming • Synthesis • Animation • Playing games • Visualisation, mental pictures, metaphors 	

TOURISM MANAGEMENT
ACTION RESEARCH STEPS
AND
WHOLE BRAIN STRATEGIES
CHECKLIST



<ul style="list-style-type: none"> • Active imagination, creativity • Illustrations, pictures, photos • Simulation 	
PLAN DATA COLLECTION METHODS (select a minimum of three)	
<ul style="list-style-type: none"> • Feedback from students (design questionnaire) • Video-recordings • Photographs • Reflective journal • Field notes for observations • Interviews with students (design questions) • Interviews / sharing ideas with peers (design questions) • Students' scores 	
STEP 2: ACTING	
<p>Implement the strategies that you have adapted with regard to whole brain thinking and learning. The selected strategies should be copied and ticked once it has been implemented.</p> <p>Quadrant A: (copy your selected strategies)</p> <p>Quadrant B: (copy your selected strategies)</p> <p>Quadrant C: (copy your selected strategies)</p> <p>Quadrant D: (copy your selected strategies)</p>	
STEP 3: OBSERVATION	
<p>Observe your actions (data collection methods were determined during the planning phase). Tick off once observations has been made according to:</p> <ul style="list-style-type: none"> • Feedback from students (questionnaire) • Video-recordings • Photographs • Reflective journal • Field notes • Interviews with students • Interviews with peers 	

TOURISM MANAGEMENT
ACTION RESEARCH STEPS
AND
WHOLE BRAIN STRATEGIES
CHECKLIST



<ul style="list-style-type: none"> • Students' scores 	
STEP 4: REFLECTING	
<p>Reflect on:</p> <ul style="list-style-type: none"> • Effectiveness of whole brain strategies • Observations • Innovative ideas that arise from the learning experience <p>Reflection methods:</p> <ul style="list-style-type: none"> • Individual reflection (reflective journal) • Peer reflection • Student reflection 	