

1. INTRODUCTION

Many young people who have completed their schooling and who are supposed to be ready to enter the workplace on a full-time and “permanent” basis are not prepared for this enduring commitment (Edison 1994). Sarason (1977) notes that questions regarding the enjoyment of work frequently trigger different and sometimes ambivalent feelings. Society places expectations on us to enjoy the chosen profession and to experience satisfaction and fulfilment in the workplace (Edison 1994). The question can therefore be asked, “how can these positive expectations be achieved?” Ideally, personality and the choice of occupation should be congruent (Edison 1994) and therefore a profession should be chosen in the area of strongest preference (Herrmann 1995). Herrmann (1995) suggests that the nature of any type of work is largely dependent on mental processes and this implies that highest productivity will be achieved when there is a positive correlation between the chosen profession and the preferred mental modes. Self-knowledge about one’s mental processes is therefore essential not only to choose the right career, but the right job within that career (Herrmann 1995).

In order to obtain knowledge about the individual’s mental processes and mental selves, many theories have been developed in personality psychology to provide insight into the total human being with consideration of individual differences (Möller 1987). The practical application of personality theories lies in the development of methods and processes for the evaluation of human functioning (Van Der Westhuysen 1987). Depending on the theory being followed, different instruments have been developed to determine a person’s preferred thinking and learning styles, for example: the Myers-Briggs Type Indicator, Kolb’s Learning Style Model, the Felder-Silverman Learning Style Model and the Whole Brain Thinking Style Preference Model of Herrmann (Felder 1996).

The ***Myers-Briggs Type Indicator (MBTI)*** is a forced-choice, self-report inventory that attempts to classify persons according to an adaptation of Carl Jung’s theory of personality and the instrument is available in a 166-item (Form F) and a 126-item

version (Gregory 1996). Jung (1875 – 1961) observed that human behaviour is not random, but instead, follows identifiable patterns that develop from the structure of the human mind (<http://www.gsu.edu/~dschjb/wwwmbti.html>).

MBTI results indicate the respondent's likely preferences on four dimensions: extraversion (E) / introversion (I), sensing (S) / intuition (N), thinking (T) / feeling (F) and judging (J) / perceiving (P) (Felder 1996). There are 16 possible ways to combine the preferences, resulting in 16 psychological archetypes, e.g. ISTJ, ESTP, ESJF and INTJ. Although many factors combine to influence an individual's behaviour, values and attitudes, the four-letter type descriptions summarise underlying patterns and behaviours common to most people of that type (<http://www.gsu.edu/~dschjb/wwwmbti.html>).

The MBTI has several disadvantages and according to Möller (1987), one of the main disadvantages lies in Jung's controversial theory, which forms the basis of the MBTI. Interpretations of the above archetypes are too slick and simple, possessing an almost horoscope-like quality (Gregory 1996), while other researchers feel that the resulting four-letter description of the MBTI is too complex and the use of exclusive language inhibits the accessibility of this powerful tool (<http://www.apptcentral.org/appttype.html>). The reliability and validity of the MBTI are also dubious since the establishment of reliability and validity is difficult for this test (Kline 1993).

In the early 1980s Mezirow, Freire, Kolb and Gregorc stressed that the heart of all learning lies in the way experiences are processed, and in particular, the critical reflection of experience (<http://www.aitech.ac.jp/~itesl/Articles/Kelly-Experiental/>). Learning was considered to be a cycle that begins with experience, continues with reflection and later leads to action, which in itself becomes a concrete experience for reflection. Kolb further refined the concept of reflection by dividing it into separate learning activities, perceiving and processing (<http://www.aitech.ac.jp/~itesl/Articles/Kelly-Experiental/>).

Kolb went on to develop the ***Kolb's Learning Style Model*** to help individuals understand their strengths and weaknesses. This inventory measures the learner's mental preferences in the four stages of learning and can be seen on a continuum, running from:

- Concrete experience: being involved in a new experience;
- Abstract conceptualisation: creating theories to explain observations;
- Active experimentation: using theories to solve problems and make decisions and
- Reflective observation: watching others or developing observations about own experiences (<http://www.cyg.net/~jblackmo/diglib/styl-d.html#Kolb's Theory of Learning Styles>).

According to Felder (1996), using this instrument can identify four types of people:

Type 1: concrete and reflective;

Type 2: abstract and reflective;

Type 3: abstract and active and

Type 4: concrete and active.

Kolb's Theory and Inventory do have certain limitations. The results obtained are based solely on the way learners rate themselves, learning style preferences are not rated through standards or behaviours, and relative strengths are only given for the individual learner, not in relation to others (<http://www.cyg.net/~jblackmo/diglib/styl-d.html#Kolb's Theory of Learning Styles>).

The ***Felder-Silverman Learning Style Model*** was formulated by Richard M. Felder and Linda K. Silverman and classifies people according to preferences on four dimensions of a learning style model (Felder 1996). The Index of Learning Styles (developed by Barbara A. Solomon and Richard M. Felder) is an instrument based on the above model and is used to assess preferences on the following dimensions:

- *Sensing learners and intuitive learners:*
Sensing learners are concrete, practical and orientated towards facts and procedures.
Intuitive learners are conceptual, innovative and orientated towards theories and meanings.
- *Visual learners and verbal learners:*
Visual learners prefer visual representations of presented material – pictures, diagrams and flow charts.
Verbal learners prefer written and spoken explanations.
- *Inductive learners and deductive learners:*
Inductive learners prefer presentations that proceed from the specific to the general.
Deductive learners prefer presentations that go from the general to the specific.
- *Active learners and reflective learners:*
Active learners learn by trying things out and working with others.
Reflective learners learn by thinking things through and working alone.
- *Sequential learners and global learners:*
Sequential learners prefer learning in linear, orderly and small increments.
Global learners are holistic and learn in large leaps (<http://www2.ncsu.edu/unity/lockers/users/f/felder/public/ILSpage.html>).

The following limitations of the Index of Learning Style (ILS) should be noted. The ILS has not been validated and the results only provide an indication of the individual's learning preferences. This learning style provides an indication of probable strengths and possible tendencies or habits that might lead to difficulty in the academic setting, but it does not reflect the student's suitability or unsuitability for a particular subject, discipline or profession (<http://www2.ncsu.edu/unity/lockers/users/f/felder/public/ILSpage.html>).

Although the above models are very valuable, the Herrmann Brain Dominance Instrument based on the **Whole Brain Model**, developed by Herrmann (1995) is acknowledged in literature to be of the most valuable when discussing the

correlation between brain dominance, learning styles and adjustment in the profession, since results are quantifiable (Herrmann 1995).

The Four Quadrant Whole Brain Model developed by Ned Herrmann based on the research of Nobel Prize-winning Roger Sperry's Left Brain/Right Brain theory and the work done by Paul McLean on the Triune Brain theory (Lumsdaine & Lumsdaine 1995; Herrmann 1996).

According to Sperry and his team of neurosurgeons, many specific mental abilities are laterised, that is, carried out, supported and co-ordinated predominantly in one hemisphere or the other of our dual brain. In order to understand this theory, knowledge about the right and left halves of the neocortex, right and left halves of the limbic system and the structures that provide the pathway along which different parts of the brain send signals to one another, is essential. These structures, as well as situational and interactive functioning, comprise key aspects of the Left Brain/Right Brain theory (Herrmann 1996).

Dr Paul McLean, Head of the Laboratory of Brain Evolution and Behaviour at the National Institute for Mental Health in the United States of America, proposed the Triune Brain Theory, according to which the human brain is in reality three brains, each superimposed over the earlier pattern of "brains-within-brains". The first proposed brain is an ancient, primitive, reptilian brain, which comprises the brain stem, the mid-brain, the basal ganglia and the reticular activating system. The second brain, the limbic, or mammalian brain registers reward and punishment, is the seat of the emotions and controls the body's autonomic nervous system. Finally, over the limbic brain lies the neocortex, the convoluted mass of gray matter that has evolved over the last million years. It is the neocortex that enables us to think, perceive, speak and act as civilised human beings (Herrmann 1996). By incorporating these theories, a model of the human brain can be built with two paired structures, the two halves of the cerebral system and the two halves of the limbic system (Figure 1).

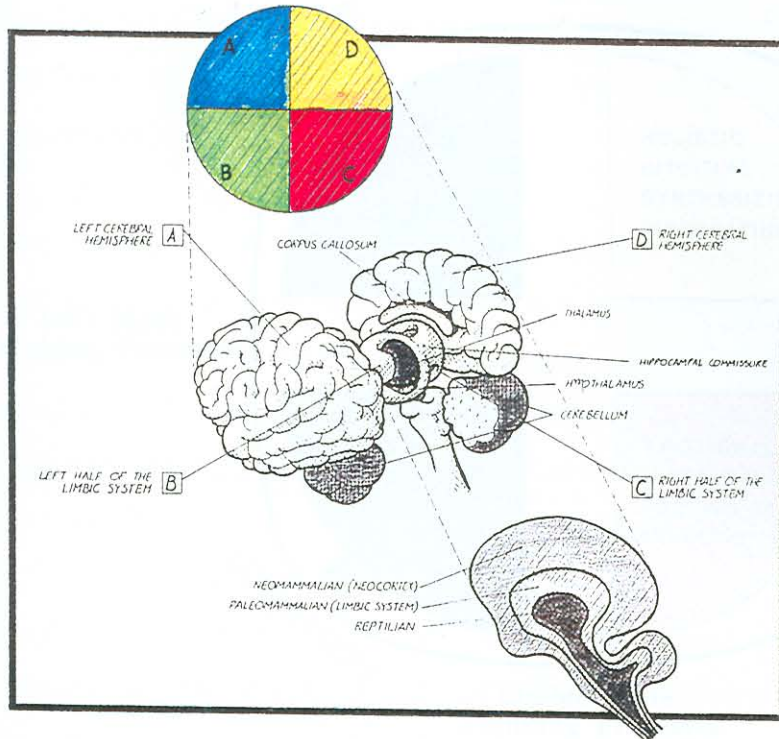


Figure 1: The relationship of the Four Quadrant Whole Brain Model with the theories of Sperry and McLean (Herrmann 1996:64).

This model allows one to differentiate between the notion of a left brain/right brain, and also between the more sophisticated notions of cognition or intellect, which describe the cerebral preference, and the visceral, structured and emotional preference, which describes the limbic preference.

The Four Quadrant Whole Brain Model (Figure 2), although originally thought of as a physiological map, is today an entirely metaphorical model and serves as an organising principle of how the brain works. The circular display represents the whole thinking brain, which then divides into four metaphorical conscious modes of knowing, the two halves of the cerebral cortex (Sperry) and the two halves of the limbic system (McLean), each with its own behaviours demonstrably associated with it (Herrmann 1996).

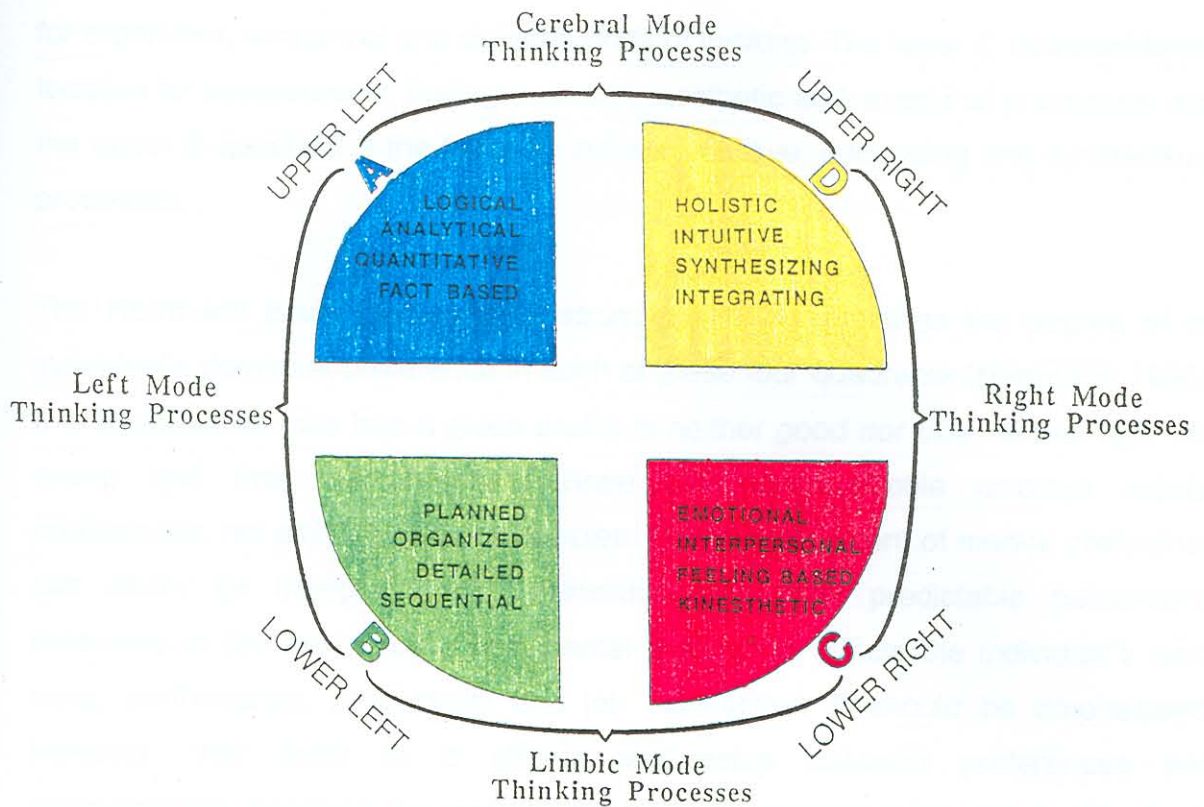


Figure 2: The Whole Brain Model (Herrmann 1995: 411).

According to Herrmann (1996) the term *dominance* provides the basis for the measurement of individual differences. It is a biological fact that dominance exists between all paired structures throughout the body system; hands, feet and eyes are seemingly the same, but actually different. Nature has provided a physical characteristic, called dominance, as a selection process for these different body parts, and the same concept can be applied to the structures of the brain that are measured by the Herrmann Brain Dominance Instrument.

According to Figure 2, the four quadrants of the **Four Quadrant Whole Brain Model** represent the four thinking structures of the brain. The upper left and right hemispheres represent the cerebral processes (cognitive and intellectual ways of thinking) and the lower left and right halves, the limbic system, which represents the more visceral processes (structural and instinctive ways of thinking) (Herrmann 1995). Herrmann (1995) explains that the upper A quadrant is the focus of logical, analytical, fact-based and quantitative thinking. The lower B quadrant is the location

for organised, sequential and detailed kinds of thinking. The lower C quadrant is the location for interpersonal, feeling-based, kinaesthetic and emotional processes, and the upper D quadrant is the focus for holistic, intuitive, integrating and synthesising processes.

The Herrmann Brain Dominance Instrument (HBDI) quantifies the degree of an individual's dominant preference in each of these four quadrants (Herrmann 1996). It is important to note that a given profile is neither *good nor bad*, neither *right nor wrong* and that the Herrmann Brain Dominance Profile displays *mental preferences*, not *abilities or competencies*. This measurement of mental preference can easily be interpreted and translated into quite predictable behavioural outcomes in the workplace, since mental preference affects the individual's work style, performance, productivity and job satisfaction. It should be emphasised, however, that there is a strong relationship between preferences and competencies, because the motivational aspects involved imply that one typically leads to another. Research indicates that, while various types of individuals may be drawn to a profession, not all types tend to succeed in all areas of that profession (Myers & Myers 1980). The question is, "how does the Four Quadrant Whole Brain Model relate to the professional competencies and work satisfaction factors of the professional person?"

According to Sarason (1977) the professional person is faced with specific problems in the workplace. For most professionals, their occupations provide intrinsic rewards but this frequently leads to lack of control over their work schedules. As the person becomes more proficient and more recognised as an expert, more opportunities beckon and the workload increases. Although the professional person longs for a more manageable schedule, his/her nature makes this unattainable. A second source of dissatisfaction for professional persons is the discrepancy between the level of esteem accorded to them by their clients or society, and their own self-concepts. The last problem according to Sarason (1977) lies in the lack of challenge in activities that were previously challenging but because of experience are no longer so.

The present-day communication pathologist¹ is not only faced with these problems but also with greater demands and changes in the profession of communication pathology (Ashby 1995). According to Campbell and Taylor (1992) the demands of an expanding and increasingly technical and specialised profession require advanced knowledge in a number of areas. It is clear that the practising communication pathologist of today is required to acquire more information and apply more skills than at any other point in the history of the profession. The career success and effectiveness of the communication pathologist is attributable to a combination of technical expertise and desirable personal attributes (Oratio 1977). According to Ashby (1995) communication pathologists of today need to be renaissance people, masters of all knowledge and manipulators of all the tricks of the trade.

This rather dramatic statement contains much truth and according to ASHA (<http://www.asha.org/students/changing.htm>), prosperity for the communication pathologist depends on the provision of measurable and cost-effective services. The communication pathologist needs to be able to navigate reimbursement systems, understand the complexities of the healthcare system, understand recent legislation and advocate for services using efficacy and outcomes data. In addition, the increasingly technical, yet people-oriented practise (Craig & Sleight 1989) demands that communication pathologists need to be independent life-long learners with an entrepreneurial attitude and managerial skills (<http://www.asha.org/students/changing.htm>). Ashby (1995) also indicates that the communication pathologist needs to develop greater skills in team work, marketing and cost containment.

This is also true in the South African context where challenges and the changing needs that face the communication pathologist are on the increase (Tuomi 1994). According to Hugo (1998) the real challenge for the communication pathologist in

¹ From this point onward the term communication pathologist will be used for the professions speech-language pathologist & audiologist, since this term encompasses both the mentioned professions (Hugo, 1998).

the South African context is “africanisation”. It is important to realise that not all of the existing Western influences should be ignored, but that the African and Western influences should be integrated to accommodate the diverse population of South Africa. Changes to the existing traditional tertiary education programmes are therefore indicated (Hugo 1998).

To accommodate the changes and demands in the profession of communication pathology, tertiary training of the student should acknowledge the fact that diverse thinking styles exist, therefore different people will have different preferred learning styles (Herrmann 1996). In this context, the term “learning style” refers to an individual’s characteristic and consistent approach to organising and processing information (Tennant 1988). Herrmann (1995) identified Whole Brain Learning and Design Considerations for each of the four quadrants (Figure 3).

A-UPPER LEFT		D-UPPER RIGHT	
Learns by: <ul style="list-style-type: none"> - Acquiring and quantifying - Applying analysis and logic - Thinking through ideas - Building cases - Forming theories 	Learners respond to: <ul style="list-style-type: none"> - Formalised lectures - Data based content - Financial/technical case discussions - Text books and bibliographies - Program learning - Behaviour modification 	Learns by: <ul style="list-style-type: none"> - Taking initiative - Exploring hidden possibilities - Relying on intuition - Self discovery - Constructing concepts - Synthesising content 	Learners respond to: <ul style="list-style-type: none"> - Spontaneity - Free flow - Experiential opportunities - Playfulness - Future orientated case discussions - Visual displays - Individuality - Aesthetics - Being involved
B-LOWER LEFT		C-LOWER RIGHT	
Learns by: <ul style="list-style-type: none"> - Organising and structuring content - Sequencing content - Evaluating and testing theories - Acquiring skills through practise - Implementing course content 	Learners respond to: <ul style="list-style-type: none"> - Thorough planning - Sequential order - Organisational and administrative case discussions - Text books - Behaviour modification - Program learning - Structure - Lectures 	Learns by: <ul style="list-style-type: none"> - Listening and sharing ideas - Integrating experiences with self - Moving and feeling - Harmonising with content - Emotional involvement 	Learners respond to: <ul style="list-style-type: none"> - Experiential opportunities - Sensory movement - Music - People oriented cases - Discussions - Group interaction

Figure 3: Whole Brain Learning and Design Considerations (Herrmann 1995: 419).

Looking at the characteristics of the different quadrants of the Four Quadrant Whole Brain Model (Figure 2), Herrmann (1995) developed Whole Brain Learning and Design Considerations (Figure 3). By taking into account the diverse methods by which the student learns, certain teaching strategies can be identified, and when using a combination of these teaching strategies, the student's learning can be optimised. It is essential that students develop skills in their least preferred quadrant in order to develop their full potential. Emphasis should be placed on the fact that an individual is the product of both nature (30%) and nurture (70%) (Herrmann 1996). The nurture aspect determines who and what the individual becomes – nurturing provides the opportunity to develop into a unique person. These aspects of nature versus nurture have specific implications for tertiary education.

According to Collins (1990) in Collins and Green (1992), the educator and student have to assume four roles in the classroom setting: the generator of knowledge (educator and student), the monitor of knowledge (educator), the aligner of knowledge (educator) and the facilitator of knowledge (educator). This pattern of interaction between the educator and the student will enhance learning, since the student will also be actively involved in the teaching and learning process.

The lecturer also plays an important role in the enhancement of the student's motivation since motivation forms an integral part of successful study (Blumenfield, Puro & Mergendoller 1992). The students' interest in the material being presented and their motivation are enhanced when: emphasis is placed on intrinsic reasons for learning, material is related to the students' lives and experiences, choices are given regarding what, where, with whom or how work is done, varied tasks are assigned, realistic and challenging problems are given, and work is assigned that involves creating a product or providing some sort of closure (Lepper 1988 in Collins & Greene 1992). Felder and Silverman (1988) confirm the above, with the statement that when a mismatch exists between the prevailing teaching style and the learning style of the student it could have serious consequences, such as lower

grades and a loss of interest in the course material and ultimately the chosen profession.

The dimension of a person's learning style may be defined by considering the following:

- What type of information does the person preferentially perceive?
- Through which modality is sensory information most effectively perceived?
- With which organisation of information is the person comfortable?
- How does the person prefer to process information?
- How does the person progress towards understanding?

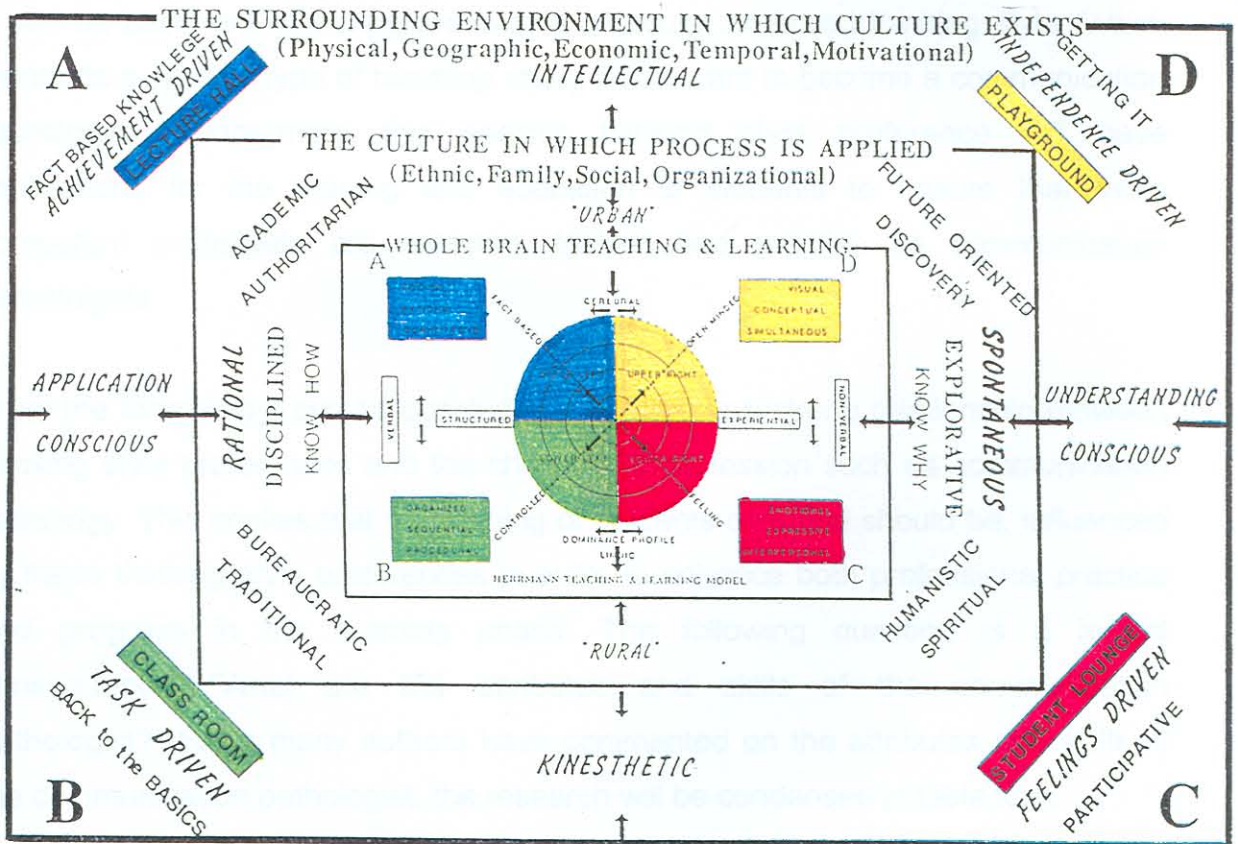


Figure 4: The Whole Brain Teaching and Learning Model (Herrmann, 1995: 417).

The Whole Brain Teaching and Learning Model of Herrmann (1995) is an attempt to summarise the different learning styles by quadrant and suggests forms of delivery for successful learning communication. The Learning-Style Model (Figure 4) promotes the deliverance of the key elements or learning points in three or four different ways, representing the four different learning styles. This might include an item of pre-work, a handout, an experimental exercise, a short video, a team activity, a metaphorical approach, a lecture and a case study. Learning material that is being presented should comply with all four, or most of the student's preferred methods of learning in order to accommodate learning preferences but should also develop skills in the student's least preferred mode of learning (Herrmann 1995).

It can be assumed that a person with a particular preferred thinking style (which demands a specific type of teaching style) would want to become a communication pathologist. Furthermore this specific thinking style preference will have implications for the training and education of students to ensure that more competent individuals are selected, trained and practise as communication pathologists.

From the foregoing it can be concluded that there is a strong relationship between thinking style preferences and the choice of a profession such as communication pathology. This implies that the training of students can, and should be, influenced by these thinking style preferences in order to enhance both professional practice and progress in the learning phase. The following question is a logical consequence: "What are the attributes and skills of the communication pathologist?" Since many authors have commented on the attributes and skills of the communication pathologist, the research will be condensed in table form.

Table 1: Attributes and skills of the communication pathologist.

Researcher:	Skills:	Attributes:
ASHA (2000):	<input type="checkbox"/> Planning and priority setting <input type="checkbox"/> Organising and time management	<input type="checkbox"/> Perspective

	<input type="checkbox"/> Managing diversity <input type="checkbox"/> Team building <input type="checkbox"/> Interpersonal and peer relationship <input type="checkbox"/> Organisational agility <input type="checkbox"/> Conflict management <input type="checkbox"/> Problem solving <input type="checkbox"/> Dealing with paradox <input type="checkbox"/> Creativity	
Scheurle (1992):	<input type="checkbox"/> Clinical training	<input type="checkbox"/> Personal philosophy <input type="checkbox"/> Education <input type="checkbox"/> Family support <input type="checkbox"/> Self-confidence <input type="checkbox"/> Professional association
Craig and Sleight (1989):	<input type="checkbox"/> Sensitivity <input type="checkbox"/> Creativity	<input type="checkbox"/> Passiveness <input type="checkbox"/> Unpretentiousness <input type="checkbox"/> Emotional stability
Sutherland, Cornett and Chabon (1988):	<input type="checkbox"/> A scientific attitude <input type="checkbox"/> A therapeutic attitude <input type="checkbox"/> Business acumen	<input type="checkbox"/> Friendliness <input type="checkbox"/> Expertise <input type="checkbox"/> Professional norms <input type="checkbox"/> Professional and legal identity <input type="checkbox"/> Honesty, patience and tolerance <input type="checkbox"/> Objectivity and modesty <input type="checkbox"/> Tactful and well groomed
McLauchlin (1986):	<input type="checkbox"/> Objectivity <input type="checkbox"/> Curious <input type="checkbox"/> Innovative <input type="checkbox"/> Risktaker	<input type="checkbox"/> Self-respect and self-worth <input type="checkbox"/> Self-disciplined and a hard worker <input type="checkbox"/> Positive and optimistic <input type="checkbox"/> Emphatic, patient, enthusiastic and proud <input type="checkbox"/> Determined <input type="checkbox"/> Balanced <input type="checkbox"/> Confident, respectful and flexible
Van Riper (1979):		<input type="checkbox"/> Hopeful <input type="checkbox"/> Understanding <input type="checkbox"/> Emphatic <input type="checkbox"/> Persistent <input type="checkbox"/> Accept failure

Although many researchers have reviewed the preferred and ideal attributes and skills of the communication pathologist, there is a definite deficiency in the method of data collection in these studies. These attributes and skills were primarily deduced from assumptions, and information was therefore not obtained by using a

scientifically valid method. Craig and Sleight (1989) used a structured personality assessment, the MBTI (Gregory 1996), to determine attributes and skills, but as mentioned above, problems exist in the reliability and validity of this instrument. The above-mentioned personality attributes and skills are convincing, but in the light of the growing emphasis on validity and reliability, the determination of these attributes and skills using scientifically valid methods is essential. By using the Herrmann Brain Dominance Instrument, the demerit in the data collection method regarding the attributes and skills of the communication pathologist can be remedied because the instrument was internally and externally validated in 1980, 1981 and 1982 and since 1983 the validation process has continued (Herrmann 1995).

If knowledge regarding the Four Quadrant Whole Brain Model and the personality attributes and skills of the communication pathologist is integrated, the following thinking style preferences for the communication pathologist can be proposed:

Table 2: Proposed thinking style preference for the communication pathologist.

Skills:				Attributes:
Quadrant A:	Quadrant B:	Quadrant C:	Quadrant D:	
<input type="checkbox"/> Problem solving <input type="checkbox"/> Business acumen <input type="checkbox"/> Scientific attitude <input type="checkbox"/> Professional norms <input type="checkbox"/> Education <input type="checkbox"/> Objectivity <input type="checkbox"/> Clinical training	<input type="checkbox"/> Planning <input type="checkbox"/> Professional identity <input type="checkbox"/> Priority setting <input type="checkbox"/> Organising <input type="checkbox"/> Time management <input type="checkbox"/> Legal identity	<input type="checkbox"/> Team building <input type="checkbox"/> Empathy <input type="checkbox"/> Family support <input type="checkbox"/> Personal philosophy <input type="checkbox"/> Acceptance <input type="checkbox"/> Conflict management <input type="checkbox"/> Perspective <input type="checkbox"/> Tactful <input type="checkbox"/> Understanding <input type="checkbox"/> Sensitivity <input type="checkbox"/> Peer relationships <input type="checkbox"/> Patience <input type="checkbox"/> Tolerance	<input type="checkbox"/> Creativity <input type="checkbox"/> Innovative <input type="checkbox"/> Curiosity <input type="checkbox"/> Flexibility <input type="checkbox"/> Risk-taker <input type="checkbox"/> Managing diversity	<input type="checkbox"/> Modesty <input type="checkbox"/> Optimistic <input type="checkbox"/> Self-discipline <input type="checkbox"/> Enthusiasm <input type="checkbox"/> Hopeful <input type="checkbox"/> Hard worker <input type="checkbox"/> Balanced <input type="checkbox"/> Passiveness <input type="checkbox"/> Expertise <input type="checkbox"/> Pride & respect <input type="checkbox"/> Honesty <input type="checkbox"/> Friendliness <input type="checkbox"/> Persistence <input type="checkbox"/> Confidence <input type="checkbox"/> Well groomed <input type="checkbox"/> Determination <input type="checkbox"/> Unpretentious

The proposed thinking style preferences for the communication pathologist was constructed using the personality attributes and skills presented in Table 1 and integrating this information with the Whole Brain Model (Herrmann 1995) (Figure 2). The different personality skills were categorised according to quadrant characteristics presented in the model by Herrmann (1995). The attributes that were not categorised into quadrants were considered personal characteristics that cannot necessarily be developed. The proposed profile indicates that the communication pathologist should ideally be “whole brained”, but there is definitely a stronger dominance in quadrant C where a cluster of skills are present.

Against the literature review it is obvious that research has already been done on the brain dominance of the communication pathologist, the preferred skills and attributes of people in these professions (ASHA 2000; Craig & Sleight 1989 and Scheurle 1992) and the influence of teaching styles on the individual (Herrmann 1996; Herrmann 1995 and Blumenfield *et al.* 1992). However none of these results were validated by the direct use of the HBDI. The necessity for further research on the thinking style preferences of the communication pathologist using the Herrmann Brain Dominance Instrument, specifically, is therefore apparent. The rationale of this study is therefore to describe the thinking style preferences of the communication pathologist. The participants in the study include a group of first-year communication pathology students who passed the selection criteria of the course ($N = 42$), a group of final-year communication pathology students ($N = 23$) and a group of communication pathology graduates who are considered competent professionals ($N = 26$). The results of this study will provide information regarding the pro-forma profile of the communication pathologist, as well as information regarding the development of the content of new curricula and valuable insights for lecturers regarding the important role of whole brain learning and teaching strategies.