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EXPANDING MUSIC TEACHERS' PERCEPTIONS OF LEARNING STRATEGIES IN THE 21ST CENTURY

by

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Abstract

This study was prompted by the need the author experienced for the rethinking of many practices in music teaching and her interest in achieving transformation in individual music teaching and learning.

An eclectic approach was adopted for the research. Despite much existing ‘fuzzy’ terminology, ‘broader’ or ‘less fixed’ meanings were sought of terms including Holism, intelligence, learning, Modernism, perception, personality, Postmodernism, teaching, temperament and whole-brain learning. The reader is presented with a palette of ideas, open for further exploration, in order to stimulate creativity and different viewpoints in music teaching and learning. The study has a student-centred approach, taking into account different types of learners and how to adapt teaching styles to connect with students in their learning environment.

Challenges teachers may encounter are how the meanings of many terms relate with music teaching practice, themselves and their pupils. The research explores the interaction and relation of terms with one another in order to reconsider and expand teaching methods. Inter, intra and multidisciplinary aspects of teaching are touched upon as being valuable in cutting across several traditional fields of study and also referring to knowledge seen as a coherent whole within one subject area. Experiences of ‘flow’ and transformative learning are explored in order to challenge students’ and teachers’ ‘fixed’ thinking methods.

The whole-brain model is considered where the brain is seen in four quadrants, each quadrant displaying distinctive strengths of value in music teaching. The importance of Emotional Intelligence in developing other intelligences is investigated and its link with Inter and Intrapersonal Intelligences in order to equip teachers to connect effectively with pupils in a learning context.



There is no “one size fits all” teaching strategy, learning style or framework that can apply to the myriad needs of individual music teachers and pupils. The research, however, demonstrates the importance for music teachers to be receptive in enlarging their thinking patterns. In so doing a path can be set for shifting focus in teaching strategies to a ‘moving forward’ ideal in perception and understanding of teaching and learning in the 21st century.

Key words

Brain Profiles

Learning Strategies

Postmodernism

Eclectic

Multiple Intelligences

Whole-Brain learning

Holism

Perception

Individual Music Teaching

Personality Types

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If you were a student, would you want *yourself* as a teacher?

Marshall (2003)



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Chapter 1

INTRODUCTION

1.1 Justification for the study

Many scholars have noted that education and specifically individual music teaching have expressed a need for new trends and development because of both the current world teachers and students live in and their worldviews (Burke 2005; Garcia 2002; Miller 2007; Usher and Edwards 1994:1-2, 7-8; Watson-Gegeo 2005:43-44; Williams 2001:115 and Zimmer et al 2004).

Coil (2000:8-9) explains that teachers so often take the ‘rear view mirror’ approach in that the educational process is treated in the same way as when one has been picked up on a radar going too fast. Teachers in general look backwards to their role models and try to do the things that have worked in the past. The author sides with Coil in that the same behaviour patterns in my teaching started to occur before this study was launched. My current thinking is not based on formal data obtained by questionnaires, but by observations in my own teaching and that of other music teachers in private music practices as well. This urged me to select and research the thesis topic chosen. It is very important to adapt to the attitude that “excellent teachers will be lifelong learners” (Coil 2005:9). Change has always been part of the human condition and it will continue occurring at an evermore rapid pace throughout the 21st century.

Current life forces teachers, at least to a certain extent, to keep up with technology, new methods of teaching and learning, using creative teaching materials and a holistic approach to students. If these demands are not kept up with, both teachers and their students will become more and more under- and

unemployed because of a lack of relevant skills (Coil 2000:9; Gaunt 2010:202; Odam 1992:161 and Rigg 2008:112). However, most private/studio music teachers who come to such awareness will not have access to the material in and services of an academic library, and this motivated the writer to condense what she was privileged to have access to.

Coil (2005:12) defines the four essential keys for successful teaching and learning in the 21st century as Flexibility, Resources, Choices and Planning. Each of these key ideas moves away from the 19th and 20th century 'fixed idea' mode of everyone learning and doing much at the same time to the information age model of individualized lifelong learning. Teachers having openness and vision in their teaching approach will foster higher-level thinking abilities in their students (provided a connection is first made). If teachers are to structure their teaching in ways that enhance critical and creative thought this should achieve increasing success amongst students.

- Flexibility: Flexible teachers are risk takers who are willing to make changes and try new ideas. "A 'one size fits all' lesson usually fits no one" (Coil 2005:12). Flexibility allows for differences in learning styles and/or modalities, strengths/weaknesses in Multiple Intelligences, ability levels, pace of learning and student interests (Coil 2005:13).
- Resources: Resources include the use of technology which was not necessarily accessible ten years back (internet, computers, i-pods and information on CD Rom, for example, both for teachers and students to use).
- Choices: Coil (2005:14) expresses here that choice affects education as it does all other aspects of life. Teachers should structure many choices into each student's music lesson and students should have choices in their learning as well. Of course it is necessary for the teacher to give the student choices with which he/she is comfortable.

- Planning: Planning should include balanced lessons with activities stimulating creativity, motivation and whole-brain learning. This includes a basic holistic approach to the student.

Growing awareness of the above aspects of teaching stimulated the writer in searching for an appropriate theoretical framework from which to function. Postmodernism embraces many approaches and insights without putting any limitations on where things begin and end (Beck 1993). I believe I have been something of a postmodernist most of my life, even before my exposure to postmodernist writings. As research continued, I increasingly realized that aspects I was addressing in this study were connected to a postmodern orientation/worldview.

Beck (1993) depicts all experiences as influenced by concepts that are seen through individual cultural lenses. That is where the aspect of perception made an impression on the researcher, especially how to expand teacher perception so that awareness in this regard is not limited. Corsini (2002:705) ascribes two meanings to the term perception.

- In vision, the ability to see in three dimensions, objects in the distance, and also to be aware of the extent of the distance from the self.
- The awareness of having the senses being stimulated by external objects, qualities, relations; immediate experiences, as opposed to memory; ability to select, organize and interpret various sensory experiences into recognizable patterns; the interpretation placed upon a stimulus or experience, determined by general organizational principles.

Aspects in the thesis relating to perception draw more on the second meaning of the term as well as its philosophical explanation as set out in chapter 3.

The aim of this thesis was not to arrive at a specific teaching philosophy, but to research and consider the application of various aspects relating to teaching, thus creating an awareness for music teachers that students should not be labelled as first perceived before all aspects relating to the child as a whole have not been taken into account. Engaging in this endeavour, open-ended possibilities may exist that certain teaching aspects (like having goals for lessons and working with a lesson plan in mind) may be more fixed, but other aspects (as to how and through which means this could be achieved) can be less calculated as they depend on the student-teacher interaction.

1.2 Research questions

The study is based on the following main research question:

How can the understanding of aspects related to learning strategies in music expand teachers' perceptions?

The following three sub-questions arose from the main research question:

- In selecting appropriate learning strategies for individual music pupils, how important are trends in thought, frameworks and concepts relevant to teaching music?
- How relevant is the study of brain profiles, personality types and Multiple Intelligences in influencing teaching and learning styles in music?
- How can intrinsic motivation be expanded in music teaching?

1.3 Aims of the study

The main aim of the study is to explore the expanding of music teachers' perceptions of learning strategies in the 21st century. Although much 'fuzzy'

terminology exists within this investigation, the author has sought to describe the ‘more¹’ meanings of terms like Holism, intelligence, learning, Modernism, perception, personality Postmodernism, teaching, temperament and whole-brain learning. The notion exists that the expansion of perception of learning styles can only be achieved if the interrelatedness of all the qualities of these terms is taken into account when teaching. Rader and Rader (1998) highlight the above ideas in the following quotation:

As we study how the brain learns, we increasingly recognize the interactive – as opposed to the transmissive – nature of the educational process.

The interaction of learner-initiated learning, narrative comprehension, and metaphoric perception, is what constitutes the best education. Learning that is passive, that is without meaningful context, that is fragmented and disconnected, is, in many ways, not only wasted but harmful effort.

To take this process further, the researcher investigated how Modernism influenced music teaching and what the limitations are that this ‘modernistic’ style of teaching brought. How to address the limitations and overcome the problems Modernism created was viewed through a postmodern lens. The author by no means denies the good that Modernism brought, but has attempted to move beyond its fixed parameters. Williams (2001:122) portrays this idea as follows: “postmodernism is in many ways a reawakening of strands already present in modernism ... thus a rereading of modernism rather than a rejection of it”.

As does the author, Usher and Edwards (1994:9) support the above quotation, noting that although an excellent author, Williams (2001:122) claims to be a postmodernist but cannot specify exactly what the term means or how and where Postmodernism breaks with Modernism. This illustrates to the reader how

¹ ‘more’ in this context refers to the author attempting to describe the meaning of these words from a multidisciplinary perspective (philosophical, psychological and musical).

complex these terminologies are and that applying them to a musical context is not an easy task.

1.4 **Research methods**

This study will focus mainly on qualitative and descriptive research methods in that the “aim of qualitative analysis is a complete, detailed description” (Neill:2004).

1.5 **Methods for data collection**

The researcher collected as extensive as possible an amount of data and organized it into a coherent whole to portray the topic being studied.

Data was collected using the following methods:

1.5.1 **Literature review**

In the literature review the researcher provides an overview of what other scholars’ theoretical perspectives and previous research findings entailed, regarding views on learning and teaching styles in music; teachers’ perceptions regarding this; brain profiles; personality types; motivation and Multiple Intelligences. Thereafter revisioning of ideas, perspectives and approaches of value in the 21st century is offered.

1.5.2 **Developmental research**

The researcher sought to find any developmental trends within a particular research area of each chapter. If such trends could be observed to exist she further sought to build on these findings in order to arrive at rethinking current

frameworks and teaching methods that could be beneficial to teachers, pupils and other scholars interested in the various aspects of the study.

1.5.3 **Grounded theory research**

As part of this methodology, the researcher aimed to arrive at a framework developed from the data gathered during the literature review.

A theory in the form of a visual model, or series of hypotheses, is offered to explain the phenomena in question. The theory depicts the evolving nature of the phenomena and describes how certain conditions lead to certain actions or interactions and how those actions or interactions lead to other actions with a typical sequence of events being laid out. The form the theory or framework takes is based entirely on the data collected (Leedy and Ormrod 2005:141).

1.5.4 **Auto-ethnographic research**

Auto-ethnographic research is a form of an autobiographical, personal narrative that explores the author's experience of life (Auto-ethnography 2010; Feuer 2007:122). It is descriptive, presenting personal philosophical orientations and ideas. This research investigates a holistic view pertaining to students, individual personality and brain profiles as well as teaching and learning behaviour in a total context, not in small entities (Friedman 2004:376).

Pilegaard et al (2010:46) describes the auto-ethnographic approach as meaningful where a music studio teacher 'is living the teaching experience' and a group of co-teachers can conceptualize a framework, and analyze the data. It can create a challenge to keep up with observations and experiences encountered (Friedman 2004:380). This description links up with a narrative approach as mentioned above.

1.6 Theoretical orientation of the study

As a theoretical orientation for the thesis the author found it difficult to assign one specific approach to the study, chiefly because of the interdisciplinary nature of the research. Although various aspects of the methods for data collection as discussed previously were drawn upon, none of the particular methods can be singled out as serving as the theoretical approach. Critical theories (Hofstee 2006:125-126) and systems theory were also examined during the course of the study and the author did not find any of these theories entirely appropriate for the thesis, due to limitations in construction and design. For instance, the terms interdisciplinary and multidisciplinary were applied within education and training pedagogies to describe studies that cut across several established disciplines or traditional fields of study (Interdisciplinary 2009). Intradisciplinary refers to areas of knowledge and skills seen as a coherent whole within one subject area (Elements of Integration in the Classroom 2009). These three terms (inter, multi and intradisciplinary) are related to eclecticism as seen in the paragraph below.

The limitations within systems theory are that the current study does not draw on one aspect fitting into another aspect to make up a bigger whole, but rather a connectedness between fields of study which are in relation to one another. In arriving at a theoretical framework, choice is exercised as to what is useful from various fields (Systems theory 2009). The author adopted the term “eclectic² approach” as used by Esping (2000:44), complemented and influenced by a ‘beyond Modernism’ philosophical approach in linking and explaining concepts and terminologies relating to the flexible, fluid nature of the study. Eclecticism is a conceptual approach that does not hold rigidly onto a single set of assumptions or ideas, but instead draws upon multiple theories, styles or ideas to gain complementary insights into a subject (Eclecticism 2009).

² Consisting of parts selected from various sources (Eclectic 2009).

The concept of Holism (Holism 2009) also served as a valuable approach linked with the study. The opposite of Reductionism (Reductionism 2009), it determines in a particular system as a whole how the various parts behave in relation to one another. Therefore the whole is more than the sum of its parts. Holism is more fully discussed in chapter 3.

Esping (2000:44) describes teachers teaching the way they prefer to learn. Therefore it is important to be aware of one's own learning style as well as the intelligences that are favoured. Some students will excel with the teacher's preferred teaching method but others will only respond if the teacher changes his/her method. There are certain foundations applied in teaching but not a universal 'right way' to teach.

Referring to a 'beyond Modernism' approach draws upon elements and orientations related to Postmodernism. Defining the term Postmodernism, viewing its historical and philosophical context, the author aimed to extract those elements most relevant to the context of the study. This was by no means a simple task, since scholars find defining and describing with clarity certain terminologies and viewpoints difficult (Adams 1997; Beck 1993; Burke 2005; Klages 2003; Postmodernism 2006; Senft 2005 and Williams 2001:122).

Klages (2003) describes Postmodernism as a complicated term or set of ideas. It is hard to define because it is a concept that appears in a wide variety of disciplines, including architecture, art, communications, fashion, film, literature, music, sociology and technology. Both Adams (1997) and Burke (2005) are of the opinion that the process of arriving at a definition is further confused by the frequent interchange of the terms Postmodernity and Postmodernism. They continue that social scientists tend to use Postmodernity, while those in the arts and humanities prefer the term Postmodernism. Adams (1997) concludes:

Postmodernity refers more to a cultural condition or state of being while postmodernism focuses more on a cultural movement or a plurality of movements within culture.

... postmodernity is the condition in which late twentieth-century culture finds itself; postmodernism is a reflection upon that condition and a response to it.

In order to explore an eclectic approach further, it is important to portray the various philosophical ideas supporting the understanding of Postmodernism. Many scholars regard the term as a constantly moving object, almost like a liquid substance, that cannot be pinpointed or fixed (Adams 1997; Cahoon 2003:1 & 9; Craft 1997:85-86; Grenz 1996:11 and Postmodernism 2006). Senft (2005) wrote: "Postmodernism is a Condition, not a Thing or Movement." According to the wikipedia.org website, the entry Postmodernism (2006) describes the term as "a type of intellectual thought that is often considered a reaction to modernism." The summit.org website with the Worldview-Postmodernism Fact Sheet (2001:1) entry views Postmodernism as:

... a broad and somewhat ambiguous term used to describe a philosophical and cultural reaction to the convictions of Modernism (which is sometimes equated with Humanism). Postmodernism is the philosophical proposal that reality is ultimately inaccessible by human investigation, that knowledge is a social construction, that truth-claims are political power plays, and that the meaning of words is to be determined by readers not authors. In brief, reality is what individuals or social groups make it to be.

Although Postmodernism is seen as controversial by scholars, most agree that postmodern ideas have had a major impact on philosophy, art, music, critical theory, literature and interpretation of history since the late 20th century. Craft

(1997:83) describes the effects of this impact in the following way:

... our society is transforming. Children, young people and adults are faced with increasing chaos of choice and social identity in all spheres of life. The implications for education are far-reaching. There is an increasing

need for teachers to support pupils in making sense of and surviving in unstable and unpredictable surroundings.

The concepts in this thesis regarding perception, learning, understanding the brain and intelligences, teaching and motivation are presented in relation to the teacher and pupil from a postmodern orientation. The author has chosen this orientation mainly because current life is constantly changing and challenging teachers' value systems and educational viewpoints. It has also been found through teaching experience that it is almost impossible to conclude with any right or wrong answers with regard to teaching methods or learning styles. Indeed, as Woods & Jeffrey (1996:6-7) formulate it, teaching is a creative act, because "every situation is different ... Only so much is predictable. There is a need for teachers to be flexible."

In the theoretical orientation, the author deems flexibility in music teaching necessary in putting forth open-ended ideas and in formulating expanded teaching strategies and viewpoints concerning interactions between teachers and pupils during the learning process. This eclectic approach further presents the reader with ideas, open for exploration, in order to stimulate creativity in teaching and learning (Tarnas 1996:395-396).

1.7 Layout of the study

The thesis consists of seven chapters of which chapter 1 is the introduction and 7 the conclusions & recommendations.

Chapter 2, the literature survey, explores an overview of the main research trends on which the thesis is based. It aims to provide the reader with a comprehensive understanding of various research methods, theories and viewpoints of notable scholars throughout the subsequent chapters.

Chapter 3 inquires into trends in thought, frameworks and concepts relevant to music teachers in the 21st century. Traditional and progressive approaches regarding trends of thought are investigated and influences from disciplines such as philosophy and psychology considered. The aim here is to provoke awareness amongst music teachers that aspects such as perception, own musical background, openness to new ways of thinking and Holism are all interrelated in some way or another. The chapter explores the idea that there is not 'the' best way or 'one' way of teaching, but a 'more', open-ended way of teaching with ample possibilities.

Chapters 4, 5 and 6 function together as an extension of ideas, expressions and thoughts rooted in chapter 3. Chapter 4 deals with various learning and teaching styles which are respectively teacher- and pupil-related. It addresses types of learners, learning style models and the aspect of motivation amongst pupils.

Chapter 5 investigates an overview of the human brain, focussing on the areas involved in learning. Whole-brain learning is discussed and some focus drawn to the interaction of personality types and temperament of students and teachers in learning and teaching.

Chapter 6 considers the possibility of not one intelligence, but Multiple Intelligences present amongst students and teachers. Music teachers are encouraged to be more open minded and aware of the differences amongst their students and themselves. The chapter creates space for and acceptance of students being 'smart' in different ways without being classified or labelled as having a certain limited intelligence as determined by traditional IQ tests.

1.8 Delimitations of the study

In this study, age of pupils is non-specific. Music teaching in the context of this thesis refers broadly to individual teaching (any instrument, not just piano),

although at times smaller groups apply. Teaching big groups and/or adults is excluded from specific consideration.

1.9 Notes to the reader

- During the course of the thesis, learners will be referred to as children, pupils and students interchangeably.
- Teachers are referred to as such throughout, and not as lecturers or facilitators.
- The terms individual music teaching and studio teaching are used interchangeably. Other terms that are also used occasionally are one-to-one instrumental teaching and private music teaching.
- The thesis describes a very broad survey of educational psychology as it pertains to individual music teaching. Because of the wide scope of fields addressed, an attempt was made to mindmap the most useful terms. Choice had to be exercised as to which aspects to include and exclude.
- Where internet sources are cited with only an author/term as entry and a date, the assurance is given, regarding the question of no page numbers, that the author has searched the particular site to make sure that the article or entry does not have assigned page numbers.
- Although issues related to Modernism and Postmodernism are mainly of background significance to this thesis, it was found during the research process that more time was involved in exploring this field than with any other topic. The reason for this is no doubt the fuzzy and complicated nature of especially Postmodernism.

- The author is aware that some references are made to sources as far back as the mid-1930s. This could indicate that research is outdated, except where investigation conducted during these years laid an important foundation for future research, and theories could then be further expanded in the area of music teaching and learning.
- Wherever Wikipedia is given as a reference for a statement/definition in this thesis, the researcher made certain to check the information against other sources, because of somewhat negative perceptions which do exist concerning the website. The author chose to use some references from this site because of the simplicity with which complicated concepts are often explained; a useful reference list with books and websites is given at the end of each article and this site is a good starting point to gain further information on a wide variety of topics.
- U.K. spelling will be followed throughout the thesis except when direct quotations from American sources are used.

Chapter 2

LITERATURE SURVEY

Research is the process of going up alleys to see if they are blind - Marston Bates (Academic Research: Quotes and Jokes 2009).

2.1 Introduction

The literature survey originated in a general interest regarding music teachers' perceptions of learning and teaching styles. This led to further investigation into areas such as studies related to brain profiles and Multiple Intelligences.

The author viewed the above through the theoretical lens of an eclectic approach and a postmodern orientation. The interrelatedness of these and other terms underlying the theoretical framework are discussed under 1.6. The above approach and orientation was chosen, rather than any other framework, because it provided ample freedom in ideas regarding teaching and learning as well as taking the best qualities from various disciplines and theories. Parameters in Postmodernism are not fixed relating to expanding teacher perception of the teaching and learning process. The theoretical framework also influences the way in which the teacher views the pupil and his/her abilities. Sources such as Cahoone (2003), Coil (2000 & 2005), Erickson (2001), Grenz (1996), Jordaan and Jordaan (1998), Reimer (2003) and Tarnas (1996) proved to be enlightening in this regard.

Since I am interested in various aspects of music pedagogy, and its development in the 21st century, I started internet searches and was able to locate a number of music teacher forums, article search engines (www.findarticles.com; www.musicresearch.org) and other informative online articles available from

www.musicteachermag.com and www.pianoeducation.org. Research further developed in reading specific piano pedagogy literature (Bastien 2003, Dubal 2004, Gordon 1995, Harris and Crozier 2000, Neumann 1982 and Uszler et al 1991) to review teaching tools currently in use.

2.2 Shifts in thought relevant to music teachers in the 21st century

Deciding on a theoretical orientation for the study was not an easy task, since there is such a vast number of different orientations and because of the inter-, multi- and intradisciplinary nature of the research (Elements of Integration in the Classroom 2009). Some of these orientations include an eclectic approach (Eclecticism 2009; Esping 2000) combined with a 'beyond Modernism' philosophical approach, Holism (Holism 2009) and Postmodernism (Adams 1997; Beck 1993; Burke 2005; Klages 2003; Postmodernism 2006; Senft 2005 and Williams 2001). See section 1.6 for a detailed description of the above orientations.

Reading about different theories and orientations the author came to the following realizations:

- Each theory/orientation has its own 'language', history and pioneers
- One particular theory/orientation can have a great number of sub-terms relating to its full understanding
- There is often confusion regarding the definition of terminology within one theory/orientation
- Philosophical viewpoints are not always consistent throughout a theory/orientation.

When interpreting learning strategies for piano music, for example, the 'rules' as to how they should be approached are not always specific. Choices are left to the teacher. Teaching the same concept to different pupils results in a myriad of ways it can be done, since no two pupils are alike in personality and ability

(Woods & Jeffrey 1996). Therefore I decided to use an eclectic orientation for the study, because eclecticism is a conceptual approach that does not hold rigidly onto a single set of assumptions or ideas, but instead draws upon multiple theories, styles or ideas to gain complementary insights into a subject (Eclecticism 2009).

2.2.1 Shifts in humanistic trends

Applied to music teaching, a humanistic trend denotes a point of view that students are essentially good and constructive, that the tendency to self-actualize is inherent and that, given proper environment, students will develop to their maximum potential (Corsini 2002). This approach links with Holism in that it emphasizes spontaneity and the development of human potential through experiential means rather than analysis of the unconscious or behaviour modification (Corsini 2002; Jordaan and Jordaan 1998).

The meaning of holism is dependent upon the discipline it refers to and is thus difficult to define (Collins et al 2006; Crystal 2006a, 2006b and Kavanagh 2002). In teaching and learning, Holism is seen as a type of personal therapy in which the therapist is viewed as a teacher and the patient a student. The teacher's task is to create conditions within which the student may choose to learn. Responsibility for learning is up to the student. For optimum growth, all aspects of a person should be developed to the fullest in harmony with each other (Corsini 2002).

2.2.2 Shifts in cognitive trends

In cognitively oriented trends, the objective is typically to identify and monitor thoughts, assumptions, beliefs and behaviours that are related and to identify those which are dysfunctional, inaccurate or simply unhelpful. This is done in an

effort to replace or transcend them with more realistic and useful ones (Cognitive behavioural therapy 2009).

Baron et al (2006) and Sternberg (2006) observe that cognitive processes in learning interact with each other and with non-cognitive processes. Applied to a musical context, teachers and students will in part remember what they perceive. Similarly, thinking processes depend in part on memory processes. Research shows (Gardner 1993, 1999, 2003; Herrmann Brain Dominance Instrument 2007 and Jensen 1996b, 1998, 2000, 2007) that learning causes change in the brain. Therefore cognitive processes can affect biological structures and vice versa (Sternberg 2006).

2.2.3 Philosophical trends that influence teachers' current world views and teaching

Current life in a postmodern world is constantly changing and challenging teachers' value systems, perceptions and educational viewpoints. This orientation creates the possibility of open-ended ideas and creativity in teaching.

The difficulty underlying use of the term Postmodernism is that as orientation it is controversial and finding a specific fixed definition is not really possible (Adams 1997, Klages 2003, Morris 2005, Postmodernism 2006 and Senft 2005), apart from definitions being vague and often inconsistent (Craft 1997). Among all the sources consulted the author has found Postmodernism (2006), Postmodern philosophy (2006), Realism (2007), Relativity (2006), Postmodern_music (2006) and Postmodernism_Manifestations (2006) useful in clarifying the term to a certain extent as well as Erickson (2001), Senft (2005) and the Worldview-Postmodernism Fact Sheet (2001). In focusing on the relationship between the terms Modernism and Postmodernism the writings of Burke (2005), Chagani (1998) and Morris (2005) describe the subdivisions of Modernism effectively so that a comparison can be drawn between the two terms. Smethurst (1996) and

Weiss & Wesley (2000) are of the opinion that each and every person's definition of the terms will be different. This opinion is supported by Tarnas (1996) and Postmodernism (2006) in that modern themes like honesty and progress become invalid in a postmodern world on the grounds that every person's definition of the terms will be different. Thus from a postmodern perspective words do not have intrinsic meaning. The meaning they have is the meaning the researcher/teacher/pupil gives to them. Words are pointers/signs towards understanding. The meaning that is attached to words is influenced by the teachers' own pre-suppositions and pre-understandings.

2.2.4 Relevant views on perception

As is evident from the list of references, much study has been done in the general area of human perception, but less research has been done relating specifically to music teacher perception focusing on individual teaching situations. There are some writers, however, who have been exploring this area (Gaunt 2010:180; Odam 1992:160 and Rigg 2008:109). Being interested in expanding music teachers' perceptions of learning strategies, I undertook an extensive overview of how I would regard the term 'perception' in relation to the study. At first, to gain a broad understanding of the term, I consulted different viewpoints from notable scholars in various disciplines such as education, philosophy and psychology as well as some dictionary entries.

In psychology and the cognitive sciences, perception "is the process of acquiring, interpreting, selecting, and organizing sensory information" (Perception 2007a). Defining the term in general is difficult, because like Holism it depends on the context to which it is applied. The following authors clarify the use of the term to a certain degree from a psychological and philosophical perspective (Collins et al 2006; Corsini 2002; Covey 2004; Grobler et al 2003; Johnson 2005a; Jordaan and Jordaan 1998; McLaughlin 1998 and Martin 2005). For further expansion on perception see chapter 3 section 3.4.

Perception involves both the sense organs (e.g. seeing) and the brain (thinking) (Benson 1998). This is useful in that perceiving and reasoning are two important aspects in music teaching. Thinking and reasoning involve an “out-of-the-box” teaching approach, because students are stimulated to think for themselves. Concepts about learning are not merely dictated and the student becomes actively involved in the process of learning instead of doing exactly as told (Magrath 2007:47).

2.2.5 Biological and aesthetic concepts

Biological concepts referring to a psychological point of view normally denote the study of the nerve cell in order to grasp the structure and operation of the nervous system within the human body. In the context of this thesis the approach is, however, more aesthetic than biological.

An aesthetic approach in music applies to aspects such as creativity (Azzam 2009; Corsini 2002; Creativity 2009; Gardner 2006; Henson and Eller 1999 and Jordaan and Jordaan 1998), preference (Fung 1996; Johnson 2005a; LeBlanc 1982; LeBlanc and Cote 1983; Wapnick 1980 and Shehan 1986), emotion (Butler and McManus 2000; Chen 2001; Corsini 2002:324; Mood and Emotion 2009; Plutchik 2009 and Sternberg 2006) and self image (Self image 2009). The above terms can be seen as being interrelated within psychology and music.

2.3 Examining learning and teaching styles

In discussing the trends and development of literature concerning learning and teaching styles, the two concepts are separated in individual sub-sections, since learning styles refer more to the student and teaching styles more to the teacher. Although the two concepts are discussed separately, however, they do not function on their own and therefore the last part of this section focuses on the integration of the interconnectedness of the two styles.

2.3.1 Learning styles

While researching learning styles it was found that much confusion exists as to exactly what the term means and how it functions in relation to other terms. In order to clarify these misunderstandings it is helpful to stipulate what a learning style is not:

- A personality type
- Temperament
- Multiple Intelligences
- Preference
- Emotional Intelligence
- A brain profile
- An individual's senses
- A thinking style
- Brain dominance
- Intrinsic and extrinsic motivation.

When teachers engage with students in working with their preferred learning style, some of the above aspects may interact, but as individual terms they do not constitute the equivalent of learning styles. Sensory channels (described by Garcia 2002 as learning styles) are visual, auditory and kinesthetic and students have a dominant modality/learning style (Bruckner 2005 and Garcia 2002). Effective learning is also “whole-brained” (Gross 2008 and Leonard 2006).

As referred to in different sections of chapter 4, pupils have different learning styles, characteristic strengths and preferences in the ways they take in and process information (Felder 1996, Gross 2008, Learning Styles Masterclass Notes 2006, Leonard 2006, McKeachie 2006 and Power et al 1999).

2.3.2 Teaching styles

Keeping abreast in the 21st century can be a challenge for most teachers who were brought up with 'low tech' materials. Music teaching has moved on since the 1960s and yet many teachers use tutors devised before then, when there are attractive, relevant methods available in abundance at present. The author is by no means denying the usefulness of older method books, especially the reprinted versions, but it is advised that teachers who still use these books do so in conjunction with newer attractive materials and consider transferring to more recent books over time. Examples of some of the older method books are:

- Edna-Mae Burnam – *A dozen a day: Technical exercises for the piano* (1950)
- John Curwen – *Mrs Curwen's pianoforte method – A guide to the piano* (1913) (see References, First editions 2009c)
- Leila Fletcher – *Music lessons have begun* (1947) (see References, First editions 2009a)
- John Schaum – *Piano course* (1945)
- John Schaum – *The boogie book: Solo piano albums for the young student* (1955) (see References, First editions 2009b)
- John Thompson – *Easiest piano course* (1955) (see References, First editions 2009b).

The author has found both in personal experience and literature study that teachers and authors of piano method books, in the past, were unaware of developing terms in music teaching such as whole-brain (Gross 2008, Leonard 2006 and Power et al 1999), four brain quadrants (Bruckner 2005, Gross 2008, Herrmann Brain Dominance Instrument 2007, Leonard 2006, McKeachie 2006 and Power et al 1999), intrinsic motivation (Dahlstrom 2001, Dev 1997, Heffner 2004b, Madsen 2003, Robertson et al 2008 and Steele 2008a), Multiple Intelligences (Gardner 1983, 1993, 1999, Willingham 2000 and Wise 2001), different types of learning styles (Bruckner 2005, Garcia 2002, Hannaford 1995

and Persellin 1992) as well as perception in relation to teaching styles (Bruckner 2005 and Hannaford 1995).

In teaching situations teachers did not 'identify' these concepts as part of the holistic teaching process. As teachers and authors of piano method books have been compelled to move away from old fashioned teaching styles, opportunities have arisen for more creativity, empathy, well informed teachers with regard to up to date teaching methods as well as new materials (Fraser 2005, Lau 2007 and Marlais 1997), transformation in thinking and better understanding of the students being taught.

Motivation forms an important part of music teaching since it determines whether the pupil's musical experience will be positive or not. Robertson et al (2008) regard motivation as one of the biggest challenges teachers face, since it has an impact on lessons, discipline, stress levels and on pupil results. Success in motivation does not just depend on the student's personality or learning style, but also on how teachers view themselves and their profession. In the process of trying to be motivating, teachers will find all kinds of students that they need to deal with.

2.3.3 The integration of learning and teaching styles

In understanding aspects influencing effective learning and teaching styles, it is important to focus on the interaction between pupil and teacher in relation to the material being taught. The level of interaction between pupil and teacher is determined by a number of factors, as discussed in detail in chapter 4. The teacher, for instance, has his or her own particular teaching style, way of communicating and motivational strategies. During the teaching process, aspects to be considered would be the pupils' brain profiles and personality types. This determines the type of learners they are. Their dominant intelligences and

particular character strengths play an important role in learning (Bruckner 2005, Felder 1996, Gordon and Bull 2004, Hannaford 1995 and Persellin 1992).

2.4 Exploring brain profiles and personality types

Reviewing literature, it was observed that since the beginning of time the human brain and its functions have been studied by various prominent researchers in various disciplines (Altenmüller et al 2000 and Brain Atlas 2006). Research has been motivated by the complexity of the brain and its interaction with other areas of the body.

Distinctions in literature were made in viewing the brain in a purely scientific way (Brain Atlas 2006; Cerebral cortex 2007; Pearson Education 2000 and Telencephalon 2007), for example by neurologists and neurosurgeons, and a more social science-based approach (psychologists, educators and counsellors) (Jensen 1996b, 2000, 2007 and Looi 2008). The latter approach was used as conceptual basis for the thesis.

The old-fashioned way of viewing brain functions influencing learning, personality and ability was that most people have a dominant hemisphere and mostly operate in one of the two (left or right) hemispheres (Altenmüller et al 2000; Holistic Teaching and Learning 2006 and Outlook School Division 2001). In Ned Herrmann's whole-brain model, the brain is seen in four quadrants, where each quadrant displays distinctive strengths. These four quadrants are not a literal map of the anatomy of the brain, but do reflect the ways in which different physical locations inside the skull specialize in different ways of processing information (Bruckner 2005, Gross 2008, Herrmann Brain Dominance Instrument 2007, Leonard 2006, McKeachie 2006 and Power et al 1999).

Brain-based learning is not a magic term that can solve all of education's problems. There is not yet a "one size fits all" brain-based programme, model or

package for schools or individual teachers (Jensen 2007). On the other hand, whole-brain learning uses techniques that integrate the synthetic and imaginative brain skills with the analytical and language skills. Simple strategies can make better use of the whole-brain and can dramatically improve learning (Coil 2000; Gross 2008 and Holistic Teaching and Learning 2006).

Being aware of pupils' brain profiles and approaching them holistically, literature viewed (Big_Five_personality_traits 2009; Boeree 2006; Briggs Myer 2007a; Eysenck 2008; Personality 2007; Personality psychology 2009 and Temperament 2007) deemed it necessary to be aware of different personality types amongst pupils. As a basis, two main personality types were found (introverts and extraverts) (Analytical_psychology 2007; Personality_type 2007 and Roper 2007) which progressed with further research to various combinations that influence and constitute personality.

The idea of psychological types originated in the theoretical work of Carl Jung (Personality_type 2007). When attitudes and functions are combined, eight personality types can be distinguished (Myers-Briggs_Type_Indicator 2007 and Meyer et al 2003) on the basis of the dominant attitude and function. In developing the Myers-Briggs Type Indicator (MBTI) personality inventory, during the 1940s, the aim of Isabel Briggs Myer and her mother, Katharine Briggs, was to make the theory of psychological types, introduced by Carl Jung in the 1920s, accessible to individuals and groups. An important goal of knowing about personality types is to understand and appreciate differences between teachers and pupils.

There is a basic focus on how different individuals prefer and use their perception and judgement (Briggs Myer 2007b and Saadé et al 2006). All the types are equal; there is no best type. The MBTI instrument distinguishes between preferences and does not measure trait, ability or character.

2.5 Perspectives relevant to Multiple Intelligences

Traditional teaching focussed on only two avenues of intelligence: verbal and mathematical skills (Beliavsky 2006; Brualdi 1999; Chambers 2008 and Howell 2004). Currently more and more researchers believe that a multitude of intelligences does exist, quite independently of each other, with each intelligence having its own strengths and constraints (Chambers 2008 and Gardner 1983, 1993).

Howard Gardner's Multiple Intelligence Theory was first published in his book *Frames of Mind* (1983), and became established as a framework from which to understand and teach many aspects of human intelligence. Originally aimed as a contribution to psychology, Gardner's work was soon embraced by education³, teaching and training communities (Chapman 2006 and Giles et al 2007).

Gardner's 1983 publication proposed the following intelligences: Verbal-linguistic, Logical-mathematical, Visual-spatial, Body-kinesthetic, Musical-rhythmic, Interpersonal and Intrapersonal. Naturalistic, Spiritual/Moral/Existential, Mental searchlight and Mental laser intelligence were added by Gardner in later publications (Armstrong 2000; Brualdi 1999; Chambers 2008; Coil 2005; Gardner 1993, 1999, 2004, 2006; Kaser 2008 and Multiple_Intelligences 2008). Recently two more intelligences have been added by Sherman (2006): Olfactory/Gustatory and Touch- intelligence.

All humans are intelligent in different ways and the types of intelligence that a person possesses (Gardner suggests that most individuals are strong in three types) indicate not only their capabilities, but also the manner or method in which they prefer to learn and develop their strengths and weaknesses (Chapman

³ Although Gardner's MI theory is widely accepted by educators, it is rejected by some psychologists and psychometricians on strong scientific grounds (Barnett et al 2006; Gilman 2007 and Smith 2008).

2006). The author views Gardner's work as creating a paradigmatic shift in thinking, because he challenged and challenges traditional, narrower views of intelligence. If teachers teach only one way, only one kind of student will be reached. Students should be taught flexibility and provided with multiple views for understanding the physical, social, the human and the artistic worlds (Beliavsky 2006; Gardner 2004, 2006; Giles et al 2007; Hunter 2006 and Smith 2002).

Selecting the intelligences, applicable in a musical and teaching context, will depend on which of the intelligences is more teacher or pupil related. Some intelligences focus more on the interaction between teacher and pupils.

Apart from the expectation that teachers should show strengths in Gardner's initial proposed intelligences with specific reference to Musical Intelligence and the Person-related intelligences, Emotional and Social intelligences are regarded as important in the music teaching process. These intelligences were added to Gardner's list by Goleman (1996 and 2006). Both these intelligences are relevant to the study in that they link with Gardner's Interpersonal and Intrapersonal Intelligences.

The term Emotional Intelligence (EI) has not only been used by Goleman. Other authors have researched the subject of EI extensively (Beasley 1987; Gibbs 1995; Mayer 2005; Mayer et al 1999; Mayer et al 2004), but it was popularized by Goleman. Goleman called attention to the fact that emotions play a crucial role in everyday life and that emotions always exist (Emotional intelligence 2006a). In order to connect successfully with pupils in a teaching/learning situation it is necessary for teachers to have developed emotional skills within themselves in such a manner that their own self does not overly interfere with the individual being taught (Emotional Intelligence 2006a, 2006b; Goleman 1996, 2006 and Zimmer et al 2004).

2.6 Transformative learning

Mezirow (1991 and 1997) developed his theory of transformative learning through a careful integration of theories, models and ideas from a wide variety of sources. The theory continues to evolve through the inclusion of new perspectives on learning and development. It also includes the kind of learning that helps students make meaning of their lives.

Transformative learning involves experiencing a deep, structural shift in the basic premises of thought, feelings and actions. It is a shift of consciousness that dramatically alters the way of being in the world. Such a shift involves the understanding of self and relationships with others. It also includes an awareness of alternative approaches to living and a sense of possibilities for social justice, peace and personal joy (McWhinney and Markos 2003:20 and O'Sullivan 2003).

Mezirow's three domains of learning are described as:

- Instrumental – gaining of technical knowledge
- Communicative – gaining of practical knowledge, and
- Liberating – gaining of freedom in knowledge (Cranton 1994 and Mentkowski 2000).

Transformation is often triggered by a problem and most of the time transformative experiences are painful to go through. During the thinking phase, it is found that people regard their old ways of thinking and being as no longer adequate and thus change is compelled to happen. Finally, there is an action phase. This could mean moving away from certain belief systems re older methods of teaching: even a complete change in teaching philosophy can result. The process itself may take a long time. It is possible to reflect on something for years before there is a readiness to accept new beliefs and act on them (McGonigal 2005; McWhinney and Markos 2003:24 and Mezirow 1997). Mezirow states that learning "can consist of a change in one of our beliefs or attitudes" but

it is only when the entire perspective on a particular viewpoint or belief is changed that real transformation takes place (McWhinney and Markos 2003:21 and Mezirow 1997).

Within a music teaching perspective, critical reflection is important when teachers need to consider their teaching practices. Often critical reflection arises when the following questions are considered: why do I teach the way I do? What goals do I have for my students and myself as a professional? Once these questions have been seriously contemplated, teachers will be closer to formulating their opinions on transformative learning and how it fits into their music practice (Merriam and Caffarella 1991).

McGonigal (2005) expresses the challenge that transformative learning poses. She explains that presenting new information is not enough to guarantee optimal learning. It is necessary for students to be aware of the limitations of their current knowledge and perspectives. Therefore teachers cannot impress their knowledge on students. A true transformation of students' existing knowledge is required. This is achieved when students are challenged to express an original interpretation of what they have learned and not to seek 'the one correct answer'. This new approach should replace the idea that students previously have learned, practised and been duly rewarded. It will help students to have an opinion of their own and foster intellectual openness when their assumptions are challenged (McGonigal 2005).

2.7 Flow

An interesting aspect pertaining to teaching and learning is the concept of flow. Since it is not a major aspect within this study, the literature referred to will only be within the context of the thesis.

Csikszentmihalyi's theoretical model on flow⁴ explores the kind of optimal experience that people seem to derive from a wide variety of activities (Csikszentmihalyi 1990; Gelb 2009). Diamond (2009) views flow as allowing utopian thought. Human creativity functions at its peak as a flow between attention, concentration and peacefulness.

Human beings have an inherent drive to know their capacities, to bring order to consciousness and to gain self-knowledge (Davis et al 2000; Elliott 1995; Gardner 1983 and Meyer et al 2003). Through music and other arts people discover a sense of meaning, self-understanding and inner development which results in better self-knowledge (Reimer 2003).

⁴The state in which people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it (Csikszentmihalyi 1990:4).

Chapter 3

TRENDS IN THOUGHT, FRAMEWORKS AND CONCEPTS RELEVANT TO MUSIC TEACHERS IN THE 21ST CENTURY

(Students) are like salt, sugar, flour and chalk, which all look pretty much alike and which have vastly different natures and uses. Having discovered the different capacities of his pupils, the teacher will – as far as possible within the plan, adapt his teaching to their differences (Hight 1989:197).

3.1 Introduction

Individual private music teaching is important in the current era of education, being one of the last of the great oral traditions with student and teacher often working together for many years in a close one-to-one partnership. The dynamics of each of these partnerships are different. Therefore the challenges that individual private music teachers face carry a lot of responsibility (Esping 2000:vii). This responsibility demands flexibility in meeting demands of students and calls for continuing professional development on the side of the teacher in order to keep up with trends in thought, frameworks and concepts relevant to the teaching environment (Thickstun 2009:60).

A trend can be seen as an inclination in a particular direction (Trend:2009), whereas a tendency is a likelihood of behaving in a particular way or going in a particular direction; a tendency to move towards, forward from or past a particular trend in thought or belief system (Tendency:2008). A framework is a basic conceptual structure used to solve or address complex issues (Framework:2009). This might refer to the various disciplines in this study coexisting with one another. The term concept is a cognitive unit of meaning – an abstract idea or a mental symbol sometimes defined as a ‘unit of knowledge’,

built from other units which act as a concept's characteristics. A concept is typically associated with a corresponding representation in a language or symbology such as a word. Its meaning is explored in mainstream cognitive science and philosophy of mind (Concept:2009).

Challenges teachers may encounter are how the meaning of these terms relate with music teaching, themselves and their pupils. These terms are present in many different contexts, disciplines and in each have similar or different meanings. The aim of this chapter will be to explore how these terms interact with or are in relation to one another in order to re-think current teaching methods.

As stated earlier, music teachers should be proficient in all the aspects of music they are responsible for teaching. A philosophy is necessary for overall effectiveness and serves as a sort of "collective conscience" for music teachers as a body (Reimer 2003:2). Knowledge about psychology, philosophy as well as music will guide teachers in moving towards challenging fixed pedagogical ideas, not necessarily arriving at specific answers, but broadening thinking processes in areas of concern. Because of the importance of brain profiles, personality types and Multiple Intelligences, these will be discussed in greater detail in chapters 5 and 6.

3.2 Relevant psychological developments

Relevant psychological developments relating to aspects of the thesis are discussed here. This contributes to the eclectic nature of the theoretical framework as briefly discussed in chapter 1.

3.2.1 Humanistic trends

Humanism within a psychological context refers to any mode of thought or action in which human interests and dignity are valued and which takes an individualistic, critical and secular perspective (Corsini 2002:454). Applied to teaching, a humanistic trend denotes a point of view that students are essentially positive and productive, that to be self absorbent is inherent, and that, given proper surroundings, students can reach their ultimate potential (Corsini 2002:455).

If teachers should apply humanistic psychology in teaching their students it will refer to an outgrowth of existentialism⁵ and phenomenology⁶ that focuses on the individuals' capacity to make their own choices and create their own style of life. This approach is holistic and it highlights spontaneity and the development of human ability through innovative means rather than the evaluation of unconscious or behavioural change (Corsini 2002:455 and Jordaan and Jordaan 1998:29). Corsini (2002:455) explains humanistic theory as a general approach to human behaviour and human life that emphasizes the uniqueness, worth and dignity of each individual, and the development of personal values and goals that reflect the interplay of physical, psychological and sociocultural factors. This is practically illustrated by Esping (2000:8) where she describes sympathetic⁷ teachers as not merely reflecting what they hear, but instead responding to what excites each pupil and then reacting in a way that reinforces each student's

⁵ A term associated with philosophers such as Kierkegaard and Nietzsche where they portrayed the viewpoint that one gives one's life meaning through action; life has no value unless one gives it value (Existentialism 2009). Therefore the individual is the centre of all thought. It is a reaction to philosophical and scientific systems that treat humans as members of a genus or instances of universal laws (Guignon 2005:252).

⁶ Phenomenology refers here in a psychological context to the individuals' subjective experiences. In philosophy, experience refers to 'in-relation-to' phenomena, and is defined by qualities of directedness and worldliness which are evoked by the term 'Being-in-the-World' (Phenomenology 2009).

⁷ Sympathetic here denotes a teacher with empathy for his/her students.

natural gifts. This is done by adjusting presentation, expectations, syllabus and even personality to suit each student's learning style.

3.2.1.1 The concept of Holism in teaching and learning

The term Holism is problematic to define since its meaning is based upon the discipline it refers to. Since this thesis deals with the interaction of a variety of disciplines it is important to look at extensive definitions of the term.

Kavanagh (2002:551) in *The South African Concise Oxford Dictionary* defines the noun Holism chiefly in philosophy as “the theory that certain wholes are greater than the sum of their parts.” In medicine, the same dictionary regards the term as “the treating of the whole person, rather than just the symptoms of a disease.” The author has found the definitions by Crystal (2006a:636) in the *Penguin Encyclopedia* of Holism and holistic medicine to be very extensive. Holism is there defined as:

A thesis which maintains that some wholes are more than the sum of their parts; the wholes could be biological organisms, societies, art works; or networks of scientific theories. Methodological holism claims that there are large-scale laws of societal behaviour which do not reduce to laws of individual behaviour.

Holistic medicine on the other hand can be seen as:

An approach to medical treatment based on the theory that living creatures and the non-living environment function together as a single integrated whole (holism); first propounded by Jan Christian Smuts in *Holism and Evolution* (1926). Implicit in this view is that, when individual components of a system are put together to produce a larger functional unit, qualities develop which are not predictable from the behaviour of the individual components (Crystal 2006b:636).

Collins et al (2006:365) add to the above definition. The adjective holistic is referred to as “considering the complete person, physically and mentally.”

Within a holistic approach the teacher's task is to create situations within which students may decide to learn. Accountability for learning is up to the student. For ultimate development, all areas of a person should be developed to the utmost in order to function in harmony with each other (Corsini 2002:447).

Philosophical shifts that have taken place during the period of the enlightenment, leading towards postmodern thinking, can also be implemented within a music teaching context. These shifts include ideas outlined by Capra (1995), as discussed in the following few sections.

3.2.1.2 **The shift from the parts to the whole**

Essential properties arise from the interaction and relationships between the parts within a living system. These properties are destroyed when the system is taken apart, either physically or theoretically, into isolated elements. The ecosystem is a good example where energy and matter are moving in constant cycles. These cycles function within networks. All the properties can only be understood if the whole ecosystem is observed. Applied to a teaching framework, this shift would refer to the teacher being sensitive to the students' personality, intelligence, learning style and brain functioning while teaching (Capra 1995).

3.2.1.3 **The shift from analysis to context**

The shift from the parts to the whole is not easy. Many teachers have been conditioned by their modernist upbringing and education to think in terms of parts. Western philosophical thought has largely been mechanistic and reductionistic, concentrating on the parts.

Twentieth century science and education alike have had to come to the conclusion that living systems or pupils cannot be understood solely by a method of analysis. It can still be used, but analysis has limitations in that the general

trend in thought is to consider the student as a whole. Therefore, as stated previously, the properties of the parts can only be understood from the organisation of the whole. Thus in order to understand something, you do not take it apart, you put it into a larger context. This might lead teachers to better understand their pupils, because the pupils are viewed in relation to their background, ability, environmental influences and personality (Armstrong 2000:18-19; Capra 1995; Coil 2000:106-107 and Jensen 1996a:92).

3.2.1.4 **The shift from objects to relationships**

The shift from objects to relationships developed when physicists in the 1920s discovered that there are no parts at all. What was called a 'part' was merely a pattern in an inseparable web of relationships. Therefore, the shift from the parts to the whole can be seen as a shift from objects to relationships. In the mechanistic, modernistic view, the world is seen as a collection of objects and the relationships between them are secondary. In the systems view, as well as from a postmodern and holistic perspective, it is realized that the objects themselves – the organisms in an ecosystem or the people in a community – are networks of relationships, embedded in larger networks. From a teaching perspective, relationships are primary to the teacher and objects are secondary (Capra 1995 and Coil 2000:102-104).

3.2.1.5 **The shift from hierarchies to networks**

Since around the time of Descartes, multileveled arrangements have been called hierarchies, which can be seen as fairly rigid structures in all areas of life including domination and control. This is unlike the multileveled order found in nature. In view of the fact that living systems at all levels are networks, it is important to visualise the web of life as living networks interacting with other networks (Capra 1995 and Grenz 1996:18).

3.2.1.6 Understanding Holism in relation to Postmodernism

Understanding holistic thought in relation to Postmodernism is a complicated quest. This is so since the question arises as to how the concept fits in with chaos and systems theories as well as their relationship to Postmodernism.

Chaos and systems theory as well as Holism are all approaches that have challenged limitations within modernist thinking and endeavoured to move beyond these limitations (Grenz 1996:7). It is difficult to situate such trends within philosophy, but using postmodern, eclectic and holistic approaches one does not have to place them in any particular position; they are all intertwined with each other.

These approaches are both 'episodical moments' and 'pointers' rather than positions. All these movements are in an 'agonistic networking' (Grenz 1996:18,39). They are agreeing and disagreeing all the time; in constant motion; dynamic and complex. One of the limitations of Modernism within this context is that all networks or systems are reduced to simplistic or reductionistic concepts like a machine with its individual parts.

3.2.2 Cognitive trends

Until the late 1950s psychology as a field of study was heavily influenced by behaviourist⁸ approaches. Structuralism⁹ was the first major school of thought in psychology. Functionalism¹⁰ emerged as an alternative to Structuralism (Sternberg 2006:5-6). In the early 1960s psychologists became aware of the

⁸ A person accepting the theoretical position of behaviourism - a model posing that a scientific psychology must be based on objective, observable facts rather than subjective processes such as thoughts and feelings (Corsini 2002:103).

⁹ Structuralism seeks to understand the structure (configuration of elements) of the mind and its perceptions by analyzing those perceptions in their constituent components (Sternberg 2006:5).

¹⁰ Functionalism seeks to understand what people do and why they do it (Sternberg 2006:6).

limitations of these approaches, because of the narrow spectrum of human nature studied (Jordaan and Jordaan 1998:25 and Smith 1999). Sternberg (2006:7) refers to Associationism¹¹ as a less rigid school of thought than Structuralism. In reaction to these schools of thought, cognitive trends emerged. The terms cognitive and cognition derive from the Latin *cognoscere*, meaning to 'know' or 'to be conscious of' (Jordaan and Jordaan 1998:25).

3.2.2.1 Cognitive behavioural trends

Cognitive behavioural trends include the study of how students perceive and learn things that must be remembered (Jordaan and Jordaan 1998:25 and Sternberg 2006:2). In cognitive oriented therapies, the aim is to identify and record thoughts, presumptions, beliefs and conduct that are related and to recognize those which are dysfunctional. This is done in an attempt to replace them with more practical ones (Cognitive behavioural therapy 2009).

3.2.2.2 Cognitive orientation to learning

Cognitive processes in learning interact with each other and with non-cognitive processes (Baron et al 2006:15-16 and Sternberg 2006:22-23). Applied to relevance in a musical framework, teachers and students will mostly remember what they perceive. Similarly, thinking processes depend in part on memory processes.

Sternberg (2006:22) is of the opinion that people cannot reflect on what is not remembered. On the other hand, non-cognitive processes are in relation to cognitive processes in that students for example will learn better when they are motivated to learn. However, learning will likely be reduced if the student is upset about something and cannot concentrate on the learning task at hand (Sternberg 2006:22).

¹¹ Associationism examines how events or ideas can become associated with one another in the mind to result in a form of learning (Sternberg 2006:7).

Taking the above aspects into account, observations showed (Gardner 1993, 1999, 2003; Herrmann Brain Dominance Instrument 2007 and Jensen 1998, 2000, 2007) that learning causes altered states in the human brain. Cognitive processes can influence biological structures and vice versa (Sternberg 2006:22-23). The author has found the summary of the following three learning orientations useful in order to understand the interaction with cognitive learning processes.

Figure 1: Three orientations to learning (Merriam and Caffarella 1991:138).

<i>Aspect</i>	<i>Behaviourist</i>	<i>Cognitive</i>	<i>Humanist</i>
Learning theorists	Thorndike, Pavlov, Watson, Hull and Skinner.	Koffka, Kohler, Lewin, Piaget, Ausubel, Burner and Gagne.	Maslov and Rogers.
View of the learning process	Change in behaviour.	Internal mental processes (including insight, information processing, memory and perception).	A personal act to fulfil potential.
Locus of learning	Stimuli in external environment.	Internal cognitive structuring.	Affective and cognitive needs.
Purpose in education	Produce behavioural change in desired direction.	Develop capacity and skills to learn better.	Become self actualized, autonomous.
Educator's role	Arranges environment to elicit desired response.	Structures content of learning activity.	Facilitates development of the whole person.
Manifestations in student learning	Behavioural objectives – competency based education. Skill development and training.	Cognitive development – intelligence, learning and memory. Learning how to learn.	Andragogy – self-directed learning.

The approaches, as seen from the above table, involve contrasting ideas as to the purpose and process of learning – as well as the role that educators may take.

It further underlines the idea that cognitive learning does not operate in isolation. It interacts with other systems (Sternberg 2006:22-23). These influences are more fully discussed in chapter 5.

3.2.2.3 Gestalt¹² psychology

Gestalt psychology was developed in the early 1900s by German psychologists Max Wertheimer, Wolfgang Köhler and Kurt Koffka (Corsini 2002:414). This approach focuses on the dynamic organization of experience into patterns or configurations. It came into prominence as a reaction against structuralism and behaviourism. In Gestalt psychology it is held that the whole is greater than the sum of its parts and is applied to such fields as learning, insight, memory, social psychology and art (Corsini 2002:414). Gestalt psychology could be linked to the concept of Holism in that aspects of its meaning coincide with Holism.

Two thinking patterns are found in Gestalt psychology:

- Productive thinking: is solving a problem with insight
- Reproductive thinking: is solving a problem with previous experiences and what is already known (Gestalt psychology:2009).

Reproductive thinking is a very common thinking pattern. For example, when a person is given several segments of information, he/she deliberately examines the relationships among its parts, analyzes their purpose, concept and totality and reaches the "aha!" moment, using what is already known. Understanding in this case happens intentionally (Gestalt psychology:2009).

¹² A German word for 'good form'. Gestalt refers to an integrated system whose parts are in dynamic interrelation with each other and with the whole. Max Wertheimer adopted the term for application to his concepts (Corsini 2002:413). Benson (1998:93) explains that there is no accurate translation for the word Gestalt (hence the original German word) but, loosely, Gestalt means "form", "shape", "pattern" ... with the emphasis being on "the whole".

3.3 Relevant philosophical developments

As with music and psychology, the field of philosophy has seen a vast number of developments from the Ancient world until the present. For the purpose of the study the author will focus on developments in modern thinking, stretching into postmodern thinking.

For the past approximately two hundred years, views about music have been interpreted through categories of science, philosophy, history, architecture, art and communication theory. Today these views, under the umbrella term modernity, are dying because of the current revolutions in those same fields of studies (Webber 1999:7). In the light of these changes, the question can be asked: What will teachers' perceptions of music and more specifically learning styles look like in the future? Webber (1999:7) suggests that in reflecting on such a question it is important to observe that "the road to the future runs through the past". The challenge is to observe the various contexts from which trends are shaped.

The author acknowledges when thinking about teaching and learning styles that an immediate reaction could be to do so from the perceptions imprinted by past education, current place of work, teaching experiences and the surrounding teaching community. Interacting with Postmodernism as a movement is challenging, because when applying the ideas to a musical context it introduces a whole new set of questions that teachers should interact or network with (Grenz 1996:18).

Postmodernism asserts that experience is personal (cannot be generalized) and that meaning is only for the individual to experience, not for anyone to dictate. Therefore, modern themes like honesty and progress become invalid in a postmodern world on the grounds that every person's definition of the terms will be different (Postmodernism 2006; Tarnas 1996:397 and Weiss and Wesley

2000). From a postmodern perspective, words do not have inherent significance. The value they have is the interpretation that the researcher/teacher gives to them. Words are 'pointers' towards knowledge. Description linked to words is affected by teachers' and pupils' own pre-suppositions.

Dualism is a term that needs clarification within the postmodern context. Dualism is where things stand in opposition to each other. Dualisms are therefore things like right and wrong, good and bad, up and down, black and white – something stands in opposition to something else. Dualism has to do with binary oppositions. This is what postmodern thinking challenges. Things in this context are not right or wrong, good or bad: they are different from each other and they stand in relationship to other things (Tarnas 1996:395-396). Pluralism, on the other hand, has to do with the idea that there is not only one way of doing, teaching or viewing things (Tarnas 1996:402). This is a valuable postmodern concept, especially with regard to perceptions of learning strategies in music.

3.3.1 The modern world view

In both the following historical periods, music has wrestled with unique sets of philosophical, scientific, political and cultural factors. The Pre-Historic/Ancient period (100-600) was dominated by Platonic thought. Plato is still considered the dominant philosopher of the period (Webber 1999:14). The medieval world (600-1500) shifted towards an Aristotelian outlook. Aristotle, in contrast to Plato, insisted the universal was within the created order (Philosophy Timeline 2007).

Shifts in current world views are also experienced (Grenz 1996:2; Webber 1999:14). Toulmin (1992:31-34) describes the changes that initiated the shift towards the modern world view:

- A transition from the oral to the written. This also means a transition from rhetoric to logic. The research programme of modern philosophy thus set aside all questions about argumentation (among particular people in

specific situations, dealing with concrete cases, where varied things were at stake) in favour of proofs that could be set down in writing, and judged as written.

- There was also a shift from the particular to the universal. Previously philosophers followed Aristotle's approach¹³, but now assume that the Good and the Just can be reduced to universal and timeless principles.
- A third shift has to do with the transition from the local to the general. According to modern philosophers, disciplines like geography and history can broaden the mind, but not deepen it. Toulmin states that for Modernism, the demands of rationality impose on philosophy a need to seek out abstract, general ideas and principles, by which particulars can be connected together.
- A transition from timely to timeless occurred. The humanist concentrated on timely issues: issues in specific moments of time dealing with the now rather than the past.

Toulmin (1992:43) came to the conclusion that the outcome of these four shifts - "from oral to written, particular to universal, local to general, timely to timeless" - led away from a practical philosophy to a theoretical conception of philosophy. Toulmin believes there is a revival of the previous 'practical philosophy' in the current worldview and that this revival of practical philosophy can be seen as the arrival of Postmodernism which is also characterized by a loss of unity and a recovery of the rhetorical, the particular, local diversity and the timely.

Morris (2005) divides history in four main sections in order to understand the Modernism that preceded Postmodernism:

¹³ The Good has no universal form, regardless of the subject matter or situation: sound moral judgment always respects the detailed circumstances of specific cases (Toulmin 1992:31-32).

- The Ancient World ended with the fall of the Roman Empire
- The Middle Ages lasted until the Renaissance, and
- The Modern World developed through the Reformation and the
- Enlightenment.

One of the essential elements in the development of modern society, within the Enlightenment section mentioned above, has been the search for a set of eternal or absolute values. These can stand outside any particular time or society and could provide a basis for rational and consistent judgments.

Burke (2005) describes modernity or Modernism as being characterized by three major features:

- Intellectually, there was the power of reason over ignorance
- There was the power of order over disorder, and
- There was the power of science over superstition.

The above could provide a basis for rational and consistent judgments or could be regarded as universal values (Burke 2005). Mitchell (1997) discusses the possibility that “the main characteristic of Modernism would be an attempt to take command of humanity’s destiny and this world in the interest of moving towards an utopia of some sort”. Applied to the context of this thesis, the author does not believe that it is possible to take total control of the destiny of a pupil’s learning style(s) or the teachers’ teaching strategies and their perceptions thereof.

Modernism includes such terminologies as Enlightenment¹⁴ and Realism¹⁵. It describes a relatively fixed period of history where certain types of ideas and themes were extremely influential and prevalent in society.

¹⁴ Understanding, Awareness, Knowledge and Wisdom (Collins et al 2006:255).

¹⁵ The belief that reality exists independently of observers (Realism 2007).

Research on the origins of Postmodernism revealed confusing elements. Morris (2005) regards Hegel as the first postmodernist, but he is of the opinion that it would take many years for the social changes implicit in his philosophy to be worked out in the real world. The features of postmodern culture began to arise in the 1920s with the emergence of the Dada art movement. A further movement away from Modernism is seen in the rejection by Michel Foucault¹⁶ of the Enlightenment (Grenz 1996:127-134).

Both World Wars contributed to Postmodernism and after the Second World War postmodern ideas culminated in writings of the French philosophers¹⁷ in the 1970s and early 1980s (Postmodernism 2006). Postmodernism is a set of ideas and themes subsequent to Modernism. It can be seen as a movement in intellectual thought and philosophy that stood in reaction to the rationalism, scientism and objectivity of Modernism (Chagani 1998). A term such as globalization¹⁸ also formed an important part of the postmodern movement.

Disenchantment with Modernism in Western history had its origins in the works of F.W. Nietzsche (Tarnas 1996:395). Postmodern views culminated in the writings of some of the following French philosophers: J. Baudrillard, J. Derrida, M. Foucault, J-F. Lyotard, and R. Rorty. Derrida's writings are virtually indecipherable, and meant to be so. This is because his aim is to deconstruct¹⁹ words and demonstrate the dynamic and endless play of meaning in language (Chagani 1998). Chagani notes that the radical anti-essentialism of postmodernists leads

¹⁶ M. Foucault was a postmodern French philosopher and historian of thought (Gutting 2005:280).

¹⁷ Notably J. Baudrillard, J. Derrida, M. Foucault, J-F. Lyotard and R. Rorty (Postmodernism 2006).

¹⁸ Described as referring to a culturally pluralistic and profoundly interconnected global society lacking any single dominant centre of political power, communication, or intellectual production. Instead, the world is moving towards decentralization in all types of global processes (Postmodernism 2006).

¹⁹ Deconstruction is a term used to denote the application of postmodern ideas of criticism, or theory to a "text" or "artifact". A deconstruction is meant to undermine the frame of reference and assumptions that underpin the text or the artifact. In its original use, a "deconstruction" is an important textual "occurrence" described and analyzed by many postmodern authors and philosophers (Postmodernism 2006).

them to criticize concepts and erase distinctions with which modernists are comfortable. He further states that postmodernists are suspicious of essences and natures and that is what makes their enterprise distinctive. Postmodernists tend to remove the necessity of foundations and of choosing one position over another, allowing the freedom to construct own positions or teaching methods/strategies for that matter. Chagani's ideas are supported by Morris (2005).

Scholars further make distinctions between two kinds of Modernism and two kinds of Postmodernism. Each mindset has a hard version and a soft version (Gnu 2006).

3.3.2 Modernism and its influence on methods of music teaching

The Worldview-Postmodernism Fact Sheet (2001:1) describes Modernism "as a broad and somewhat ambiguous term used to embrace a diverse range of arts, attitudes, philosophies and cultural moods which emerged following the 18th century Enlightenment" (Collins et al 2006:255). Epistemologically it is characterized by a "strong belief in rationalism and science as well as a strong scepticism in both the supernatural and the authority of religion" (Tarnas 1996:276).

Taken to the extreme, Modernism leads to scepticism and reductionism (Gnu 2006). In hard Modernism, knowledge and understanding are important. Things must be scientifically proven or explained. There are absolute norms and values. There are few or no interactions between anything (Benson 2002). This type of mindset is unlikely to instil within students a freedom or creativity to learn and therefore the author prefer a more relational approach in teaching. This is a concept associated with Postmodernism where things are more in a relational status to something else. Benson (2002), to give but one example, supports this viewpoint.

Soft Modernism regards an account of the way the world is as being possible, even if it would be difficult to conceive of one. Gnu (2006) states: “It considers philosophical reasoning as a legitimate venture that can lead to truth about the world, but it acknowledges that absolute certainty is impossible”. He writes further that science can be considered a legitimate method of learning, but does not hold science as the only or most important source of knowledge.

In soft Modernism there is a set of ideas that are valuable, good, praiseworthy and admirable and a concomitant set that are the opposite. All these ideas are truly independent of any specific background (Gnu 2006).

3.3.3 Postmodernism and its influence on methods of music teaching

Postmodern music is both a musical style and a musical condition. As a musical condition, postmodern music is simply the state of music in Postmodernism, music after Modernism. In this sense, postmodern music does not have any style or characteristic. It is also seen as an outgrowth of Minimalism (Postmodernism_ Manifestations 2006).

In Modernism the basic subject of music includes the elements of musical technique (e.g. specific intervals, motivic fragments or rhythms). In Postmodernism, music can be seen within an avant-garde context as the use of non-specific intervals, addition of manufactured objects and unconventional performance practices (Post- modern_music 2006).

The language of Postmodernism does not speak of dualisms or opposites, but would rather state that for functional reasons focus will be on either a conservative orientation or a liberal orientation. For teaching purposes reference will preferably be made to the word ‘framework’ instead of ‘model’. Ideas are open-ended and on a continuum. Nothing has a specific meaning and because things are in relation to one another they are relative (Grenz 1996:15). Therefore

Postmodernism would seldom use words like 'core', 'essence', 'origin', 'analysis' or 'amazing facts' to describe the mindset.

Soft Postmodernism rejects those extremes of Modernism found in hard Modernism: the reductionistic view of reason, which reduces psychology to biology, biology to chemistry, and chemistry to physics. It rejects the restriction of the understanding of human personality as a set of stimulus-response reactions and it rejects objectivity which denies the effect of historical and cultural situations (Erickson 2001:105-109).

Hard Postmodernism, best represented by the philosopher Jacques Derrida and the term deconstruction²⁰, goes even further to reject the idea of any sort of objectivity and rationality. It maintains that all theories are simply worked out to justify and empower those who hold them, rather than being based on facts. It also rejects the idea that language has any sort of objective or extralinguistic reference. The danger of this mindset is that it can lead to nihilism (nothing has any meaning at all). It moves from relativism to pluralism in truth and all knowing and speaking are done from a perspective that is equally as true or valuable as any other (Erickson 2001:114-115).

The author acknowledges the good that both Modernism and Postmodernism have brought to society and more specifically to teaching, but both mindsets have their limitations. The absolutes and structures of Modernism are regarded as valid. Something 'broader/more flexible' than Modernism has been discovered. Therefore she will operate from a soft postmodern or a past-modern mindset where concepts/words are not as deconstructed as with the mindsets of the hard Postmodernists. Hard Postmodernists (e.g. Derrida (1981), Foucault (1982) and Lyotard (1984)) are prone to deny any kind of truth. The author's listing in the previous sentence of specific hard Postmodernists is based on the

²⁰ See footnote 19 above.

frequency with which their names and ideas surfaced during the literature survey. However, it is acknowledged that there are many other hard Postmodernists.

3.3.4 Tendencies describing Modernism and Postmodernism

The features in the table below are only tendencies, not absolutes, in order to help the reader to see more clearly the shifts between the two philosophical movements. The tendency to see things in seemingly obvious, binary, contrasting categories is usually associated with modernism. The tendency to dissolve binary categories and expose their arbitrary cultural co-dependency is associated with postmodernism.

3.4 Relevant developments in perception

Perception is not just a matter of passively picking up information from the senses, but the product of an active construction process. The brain works on the information received and makes hypotheses about reality without conscious direction, so that the ultimate awareness is a combination of sensory stimulation and interpretation. As teachers one generally assumes that the world is as one sees it and that others (students) see it the same way – that senses reflect an objective and shared reality (Butler and McManus 2000:14-15). This is not really true when one thinks, for instance, of how students during a lesson find the ticking of a metronome either irritating or not. Some notice the light on the metronome, others do not. Students differ in the way they absorb new information and they respond differently to the same stimuli (Esping 2000:31).

Gathering information about the world is complex and active: the mind and the senses work together, helping teachers to construct a perception of reality. One does not just see patterns of light, dark and colour – what one sees becomes organized patterns so that the objects have meaning (Butler and McManus 2000:15-16).

3.4.1 Views on perception

Since this study is to a great extent eclectic, defining perception is problematic as the term in itself can convey various different meanings depending on the context in which it is used. The author will consequently aim to discuss a number of different viewpoints, regarding the term, that could possibly be applied to all the disciplines concerned. This may even result in no fixed definition as such, but offer certain 'pointers' that can expand teachers' thinking styles or belief systems.

3.4.2 What is perception?

In psychology and the cognitive sciences, perception "is the process of acquiring, interpreting, selecting, and organizing sensory information" (Perception 2007a). The word perception comes from the Latin 'perceptio', meaning "receiving, collecting, action of taking possession, apprehension with the mind or senses" (Perception 2007a). However, in order to further understand the term, it is necessary to consider more definitions.

Corsini (2002:705) depicts perception as:

The awareness of having the senses being stimulated by external objects, qualities, or relations. Immediate experiences, as opposed to memory; ability to select, organize, and interpret various sensory experiences into recognizable patterns. The interpretation placed upon a stimulus or experience, determined by general organization principles.

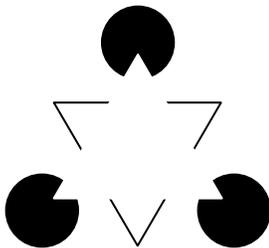
The Online-Medical-Dictionary (2007) describes perception as "the process by which the nature and meaning of sensory stimuli are recognized and interpreted" (also see Perception 2007b). Ely and Rashkin (2005:325), defines perception as "the process of becoming aware of objects, qualities, or relations through the senses. While sensory content is always present in perception, perceived information is influenced by training, education, and experience".

Musical perception as discussed by Davies (1978:99) focuses more on the organizational concept of music, specifically being aware of intervals, harmonic sequencing and the perception of tonal sequences. From these elements, tunes can be constructed and the listener is able to group and organize material in a particular way. Deutsch (1980:168) supports Davies's viewpoints. In the context of this thesis Davies's definition is not fully applicable, but for gaining an overall view regarding perception, it is worth referring to.

Collins et al (2006:559) explain perception with the words "understanding, awareness, conception, consciousness, feeling, grasp, idea, impression, notion, sensation and sense" whereas Hawker (2006:669) presents the following description: "become aware of something through starting to see, smell, or hear it ... to understand or interpret something in a particular way ... impression, idea, conception, notion, thought, belief ... insight".

Johnson (2006:421) characterizes perception as "the process of gathering sensory information and assigning meaning to it." Refer to the following figure.

Figure 2: Kanizsa²¹ figure (Corsini 2002:521; Jordaan and Jordaan 1998:304).



When looking at Figure 3 one perceives a white triangle, but when covering the three black circles, the white triangle is not there, only a semi-lined triangle. No one of these perceptions is either true or false, unless one believes that one's

²¹ The Kanizsa figure is an example of apparent perception; perceiving something that does not exist. Most people not only 'see' a triangle, but see the 'triangle' as being whiter than the surrounding background (Corsini 2002:521).

own perception is the only admissible one. A similar description of the above viewpoints is given by Grobler et al (2003:50) and supported by Covey (2004:193-197).

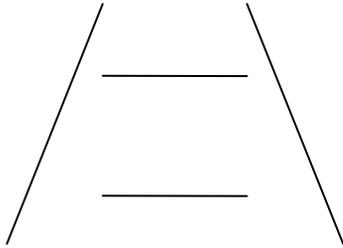
Within a philosophical framework the term ‘sense perception’ is used when describing perception (Martin 2005:775). This term is appropriate within the context of this thesis, since sense perception is described as:

... the use of our senses to acquire information about the world around us and to become acquainted with objects, events, and their features. Traditionally, there are taken to be five senses: sight, touch, hearing, smell and taste (Martin 2005:775).

Philosophical debate around perception has taken place since ancient times. Much debate focuses on the contrast between appearance and reality. Objects can be misperceived and an individual can be misled about their nature, as well as perceiving them to be the way that they are. Martin (2005:775) states: “it may seem to us as if we are perceiving when we do not perceive at all, but only suffer hallucinations.”

Objects vary in their appearance and how something appears to the individual will be determined by the point of view from which it is viewed and the conditions under which the perception takes place. Misperception can occur in different ways; examples of illusion happen in normal conditions of perception. One common example is that of the Ponzio illusion (Martin (2005:776). See Figure 3.

Figure 3: The Ponzo illusion



The two horizontal lines are in fact the same length, even though the top one looks longer.

Martin (2005:776) outlines two distinct tasks relevant to the term perception, and what it needs to explain:

- What perceptual experience is, the state of mind when things sensorial appear a certain way, and
- What it is for such an experience to be a genuine perception of some object, as opposed to a mere illusion or hallucination.

McLaughlin (1998) comments on the above statements by Martin. When perceptions are based on how things appear, they form assumed real beliefs, which sometimes count as knowledge. However, the ever-present and logical possibility of illusion makes beliefs acquired by perception fallible: there is no absolute guarantee that they are true or real.

3.4.3 What influences perception?

Aspects that influence perception are:

- Expectations
- Wants and needs
- Beliefs and attitudes (Johnson 2006:156).

An interesting viewpoint is that of Rogers (1987:484), discussed further in Grobler et al (2003:45), where he regards perception as an experience comparable to needs, behaviour, emotions and values. These ‘experiences’ cannot be separated from each other. Perception as a concept of experience can be described as “how people perceive themselves and their world, and how this perception constitutes their reality.” If this definition is viewed within a teaching context, it is possible that every teacher will have his or her own experiences regarding learning strategies. That is acceptable because each teacher is unique and will experience and perceive the world/teaching in a changing way. The conflicting experiences associated with various different learning strategies are understandable, because that is the teachers’ realities (Grobler et al 2003:219). Thus observation, perception and experience of the world or reality are individual matters. People respond in terms of both experience and perception (Grobler et al 2003:49).

Johnson (2006:156) stresses that wants and needs will constantly affect what the individual perceives in interpersonal communication situations, especially when dealing with parents and when teaching pupils. This aspect could be viewed from a different angle – a teacher may fail to perceive information or messages conveyed by pupils that are not consistent with his or her opinions, beliefs and attitudes, or he/she may refuse to enlarge thinking strategies regarding teaching in this respect.

Roulston et al (2005:60) support Johnson’s ideas, but add that experiences also influence perceptions. Applied to a music teaching context, being perceptive regarding pupils’ self image and the nature of the learning to take place, teachers can shape their images and beliefs about teaching and their own music teacher identities (Roulston et al 2005:63). One can thus conclude that personality also plays an important role in perception (Roulston et al 2005:73-74).

3.4.4 Perception from a psychological and philosophical perspective, applied to music teaching

Visual perception, and that involving other senses, was carefully studied by Wertheimer.²² According to Wertheimer, perception involves both the sense organs (e.g. seeing) and the brain (thinking) (Benson 1998:99). This is useful in music teaching, especially in perceiving and reasoning. Reasoning involves an “out of the box” teaching approach, because students are encouraged to think for themselves. Aspects of learning are not dictated and the student becomes engaged in the process of learning instead of doing precisely as told. Regarding “out-of-the-box” teaching, Magrath (2007:47-48) expresses the following interesting ideas regarding “out of – and in the box” thinking:

At first thought, I believe it has to do with thinking and listening in more creative ways than those to which we are accustomed. It could mean doing something differently and in ways we might not immediately explore if we had continued on our normal path without stopping to listen to an inner voice and to act differently.

I wonder if functioning "outside the box" has to do fully with creativity? Might it deal with taking normal activities in teaching or daily life and re-shaping them to include something not predictable? It might have to do with listening to another and accepting his ideas, putting ourselves in his shoes to understand him better. It might have to do with more frequently asking the question: "What if ...?" It could mean that we listen to students carefully and differently so that we let them give us clues regarding how to teach them. And, it could include the re-ordering of our lives so that we are balanced and stimulated in body, mind and spirit ... in addition to being focused on our teaching livelihood.

Teaching inside the box means that we accept the status quo. It can easily become a formula for teacher boredom and, perhaps eventually, teacher burn out. When we're inside the box, we have reasons new ideas or activities will not work ... again and again.

²² A German psychologist (1880-1943) recognized as the founder of Gestalt psychology (Benson 1998:95).

Outside-the-box thinking and teaching can produce excited students and engaged teachers ... a formula for energy in the lesson and the entire studio. Look for a spark of an idea that intrigues you ... and then follow that spark, sublimating excuses to maintain the status quo.

3.5 The challenges of learning and teaching in the 21st century

Learning and teaching in the 21st century poses many challenges to music teachers in various teaching capacities. It is important to take into account Robinson's reference (in Azzam 2009:23) to the job of the teacher to be to help students to make sense of the world they are going to live in. Some challenges teachers face in the 21st century are outlined in the following sections.

3.5.1 How to keep students interested in music

Students are often exposed to numerous activities that they can take part in and pressurized either by parents or peers to do as many activities as possible. Some students are able to cope with this scenario, but normally this is not the best outcome for most students. Aspects relating to these statements are discussed more fully in chapter 4 under 4.7.4.3 and 4.7.5.

To keep students interested in music or to inspire them to even take up an instrument is a very real challenge for music teachers today. Generally teachers need to be aware of the pressures of society on students in order to develop more empathy and understanding towards them (Chen 2003:26 and Portner 2009). It is often the only way teachers can connect to students where they feel the teacher is on their level (Esping 2000:7). In order to achieve this, the teacher's role changes to facilitator instead of dictator (Portner 2009).

Motivation, combined with creativity, plays an important role in keeping students interested in music (Reynard 2008). Motivation is more fully dealt with in chapter

4 under 4.7.3, 4.7.4, 4.7.4.1 and 4.7.4.2. Creativity is referred to later in this chapter under 3.5.2.

There also needs to be a fine balance concerning repertoire between what the student would like to learn and what the curriculum may require. This aspect can have a significant influence on keeping students interested in music (Harris and Crozier 2000:31).

3.5.2 How to keep up, as teacher, with new developments in a high-paced society

Some of the issues relating to this section such as keeping ahead of technology, reading new literature, using the internet for research, belonging to discussion groups and networking with senior colleagues are of importance for teachers (Barnett 2009 and Robinson in Azzam 2009). The author would like to address another important aspect that is often disregarded by teachers themselves and society, confronted with different challenges than 30 and 40 years ago (Chen 2003:29).

Faber (1991:313) claimed that “teacher stress and burnout have affected and continue to affect the lives of teachers and their families, administrators, students and all of society”. The effectiveness of managing stress as a teacher is crucial to leading a normal and successful life. It is also impossible for teachers to function in optimized creativity and to radiate an energy and passion for their job when constantly tired and over-exerted. Chen (2003:29) suggests a few metaphors²³ that teachers can use in their views about teaching when constantly stressed. “Teaching is a journey”; “Teaching is taking a roller coaster ride”. Chen (2003:29) links this with life being a journey with a beginning and an end. Teaching is a journey within the journey of life. Teachers should take into account the bigger

²³ A metaphor is a way of thinking, an image that once captured by the mind can guide an action to its completion (Chen 2003:24).

picture when creating long term teaching goals. Those who do not do this are often the ones mired in the myriad details of day-to-day teaching. It is normal for music teachers to experience ups and downs in their profession, but being able to admit this fact brings peace of mind. Fighting it leads to frustrations and anxiety. The author agrees with Chen (2003) in this regard.

Another metaphor proposed by Chen (2003:29) is interesting: “Teaching is juggling”. At work the teacher is responsible for teaching students of different abilities, personality types and who respond to different ways of learning. In addition to instruction, there are the in-service training, grading and assignment preparations. Every child’s family also makes different demands on the teacher and at their own homes the teachers are also faced with their own family responsibilities and pressures. In order to manage all this there needs to be effective planning but also enough time for rest and restoration.

3.5.3 General considerations concerning the challenges of music teaching in the 21st century

Further addressing the above issues, the 21st century educator needs to possess characteristics that are student-centred and holistic; teaching about how to learn as much as teaching about the subject area. Knowledge about brain-based learning and Multiple Intelligences is also of importance (Chen 2003:26). Beeman (1998) explained that for teachers to be successful a need arises that less time should be spent on polishing skills as dispensers of knowledge and more time should be spent on thinking about the ways in which the teacher can facilitate students’ learning processes.

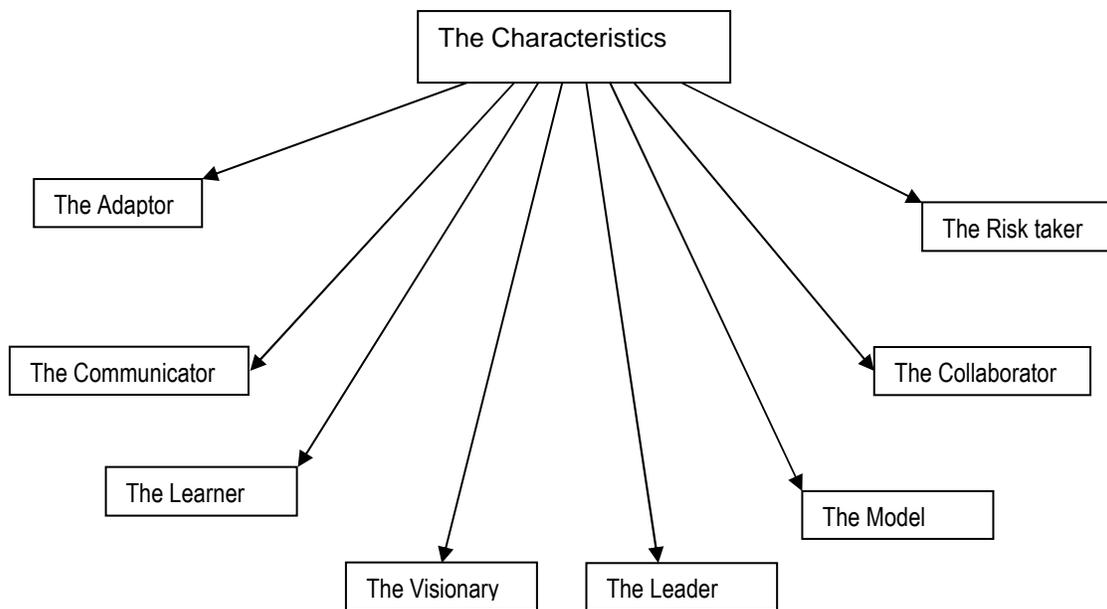
The author agrees with the latter half of the previous sentence, and with Barnett (2009) who suggests that teachers need to engage in and interact with the following skills in order to advance in their profession:

- Communication

- Connectivity
- Creativity
- Collaboration
- Digital technologies.

Furthermore the discussion of Nussbaum-Beach et al (2009) is regarded as providing valuable tools and characteristics that successful 21st century music teachers need to display in their personalities and teaching. The characteristics displayed in Figure 4 and then discussed below are in no specific priority order.

Figure 4: Characteristics of the 21st century music teacher



3.5.3.1 The Adaptor

The 21st century teacher who is an adaptor must be able to adjust the curriculum and the requirements to teach to the curriculum in imaginative ways. The

teaching experience should be dynamic and the teacher has to be able to apply different learning styles to include different modes of learning.

3.5.3.2 **The Communicator**

Beeman (1998) and Nussbaum-Beach et al (2009) suggest that the 21st century teacher should be fluent in using tools and technologies that enable communication and collaboration. Emphasis needs to be on facilitating, stimulating, controlling and managing the teaching situation effortlessly.

3.5.3.3 **The Learner**

As teachers expect students to be lifelong learners, so it is expected of teachers themselves to stay current and continue to absorb experiences and knowledge. There is no progress in learning when the teacher is still using lesson plans from five years ago.

3.5.3.4 **The Visionary**

The visionary teacher's key tools should be imagination, looking across disciplines and an ability to see and develop web technologies for music teaching.

3.5.3.5 **The Leader**

Teachers need to display characteristics of leadership when engaging with students. These characteristics include having vision, skills, resources and an action plan tied to incentives in order to be an effective teacher.

3.5.3.6 **The Model**

Nussbaum-Beach et al (2009) explain that teachers should aim to model the behaviours that they expect from their students. Apart from teaching music it is of importance still to teach sound values. This is a difficult task since students are exposed to a myriad of external factors that influence values.

3.5.3.7 **The Collaborator**

Teachers can collaborate with tools such as Bebo, Blogger, Ning, MSN, MySpace, Second life and Wikispace to enhance teaching and captivate learners. Apart from this it is also necessary to collaborate through sharing, contributing, adapting and inventing. Teachers should be prepared in guiding students to connect subject matter and there must be efficient pedagogical preparation to focus on the issues being taught. The right kind of working conditions should be created and there needs to be an element of 'serving' or 'collaboration' with diverse students in order to reach and have an impact on them (Barnett 2009). The role of the teacher is significant in the life of the student since teachers often see students for longer periods and more frequently than their parents (Nussbaum-Beach et al 2009). This does not necessarily constitute criticism of parents; it is a mere statement of fact.

3.5.3.8 **The Risk taker**

Frequently teachers must take risks and surrender themselves to their students' knowledge. Students often have a broad knowledge of digital technology which can play an important role in having a vision and goals to facilitate learning (Nussbaum-Beach et al 2009).

Robinson (in Azzam 2009:22) and Barnett (2009) agree that using technology is an important skill to possess as teachers in the 21st century because technology

is advancing at such speed. It is transforming how music teachers and students work, think, connect and change cultural values. Lancaster (2003:69) adds to the views of Robinson and Barnett. He suggests the embracing of technology as part of the future of keyboard education. Professional teachers cannot afford to turn their backs on new technology. Lancaster argues that music survived the decline of the harpsichord, and it will survive even if the acoustic piano suffers the same fate. The most important aspect of music tuition is that teachers and students grow as people and as musicians. He sums up his viewpoint with a remark by an eleven year old who made a comment on the difference between the piano and the synthesizer: “The piano is the more beautiful instrument, but the keyboard is the more interesting one.” One of the challenges of music teachers is to interest students so that they can appreciate beauty: technology can help with this.

Beeman (1998) and Rotherham and Willingham (2009:16) propose that critical thinking and problem-solving have been part of human progress throughout history, but it is a question of “how teachers and students think”. This is what brings reform and therefore teachers need to be in touch with their environment and student needs, understanding backgrounds and having a passion to educate themselves through available sources to be the best teachers they can be. Previously too many concepts, methods and ideas were possibly readily accepted by students and teachers as correct and true without much thinking. Music teaching was mainly teacher-centred. Such an approach has created problems for teachers in the 21st century when students struggle to think for themselves regarding understanding of and reasoning about concepts. In order for music teaching to be more student-centred, teaching has to change from so-called spoon feeding to critical thinking and questioning, even when definite answers are not reached.

3.6 **Biological concepts relevant to music teaching**

From a psychological point of view, biological concepts refer to the study of nerve cells in order to grasp the structure and operation of the nervous system within the human body. Human beings are living systems through the interconnectedness of cells and the relative contributions of hereditary and environmental factors to subsequent development (Jordaan and Jordaan 1998:79). In the context of this thesis the focus will rather be on an aesthetic approach that will be applied to music in focussing on aspects such as creativity, preference, emotion and self image. The above terms can be seen as being interrelated within psychology and music. The human nervous system, body cells, heredity and environment will be referred to when necessary.

3.6.1 **Creativity**

Using teaching methods to help students become better problem solvers is a primary goal of the educational process. The same is true of enhancing and fostering the creative talents of students. Although educational psychologists may disagree on how problem-solving skills and the creative talents of students can best be developed, there is little disagreement on the importance of these goals (Henson and Eller 1999:341).

There is no real consensus among psychologists on what constitutes creative thought or creativity (Henson and Eller 1999:353; Jordaan and Jordaan 1998:427) and unlike many phenomena in psychology, there is no standardized measurement technique (Creativity 2009). However, Robinson (in Azzam 2009:1) suggests that creativity involves critical thinking and therefore new creative ideas can be evaluated. Henson and Eller (1999:357) claim that teachers should be very cautious to assign specific grades/marks to creativity because these will not foster encouragement amongst students to be creative.

Aspects that are generally researched by psychologists when forming an opinion on creativity are the creative process, the creative product, circumstantial factors influencing creativity, attributes of creative people, measurement of creative ability and teachers' and students' capacity to learn to be creative (Jordaan and Jordaan 1998:428). Creativity has been associated with right or frontal lobe²⁴ brain activity or even specifically with lateral thinking²⁵. A possible definition of creativity is that it is an "assumptions-breaking process" (Corsini 2002:234). Creative ideas are often generated when the teacher discards preconceived assumptions and attempts a new approach or method, the development of new theories and techniques or devices that might seem unthinkable to others (Corsini 2002:234 and Creativity 2009). Creative thinking is then the mental processes leading to a new invention, solution or synthesis in any area. Corsini (2002:234) explains that a creative solution may use pre-existing objects or ideas but creates a new relationship between the elements it uses, such as mechanical inventions, social techniques and artistic creations.

Within a musical perspective the challenge is to apply creative ideas to teaching, using student-centred techniques. The author has found an explanation by Rubin (1985:32-33), taken up in Eggen and Kauchak (2001:20-21), of teaching sonata form to be interesting in the context of this section. Rubin (1985:32-33) describes a scenario where a teacher has used every possible established and researched method she could find to teach the various sections of sonata form to a small group of students. Nothing she used seemed to be effective and the group could not identify, hear or remember where either the development section or recapitulation started. In addressing this problem the teacher decided to observe student behaviour on the playground. She saw a group of students listening to a new rock hit. A boy with a tape recorder was standing in the middle of the group while some students were singing and others just swaying to the music. Upon

²⁴ The lobe that forms a part of the cerebral cortex in the brain (Creativity 2009). The areas of the brain are discussed in more detail in chapter 5.

²⁵ Term associated with Edward de Bono from 1960 to the present (Creativity 2009).

walking away the teacher got an idea to try out with her group of students. In the next session she asked the students who all had tape recorders. A number of students had one. She told them that they were going to conduct an experiment. While playing Beethoven's *Eroica* symphony one student had to be ready to record the opening theme and another one the second theme when it is first introduced. The teacher appointed another two students to be ready to record the development and the recapitulation. After this all of them had to play the sections of the symphony back in sequence as they had recorded it.

The students were first surprised at this new change in the lesson but then participated with commitment. Despite slight deviations in pitch and timing between the recordings, the teacher had reached her goal and the students had fun in the process and could identify the various sections with ease. The teacher capitalized on the demonstrated principles suggesting that actively involving students and relating abstract ideas to their personal lives increase learning and creativity (Eggen and Kauchak 2001:21).

Gardner (2006:43) mentions that, in some definitions, creativity and intelligence are viewed as related (also supported by Henson and Eller 1999:355), while other investigators have stressed the relative independence of the two. Yet from Gardner's point of view the measures of creativity growing out of the psychometric tradition are even more impoverished than the measures of intelligence.

When people in general are asked who they know who can be classified as creative, prominent names arise like Einstein, Mozart and Picasso. This does not mean that creativity is restricted to a handful of people: there are many music teachers and students who do creative work but never become famous. Highly creative people who excel at innovation tend to differ from other people in three ways: they have a high level of specialized knowledge, are capable of divergent thinking mediated by the frontal lobe and are able to modulate neurotransmitters

such as nor-epinephrine in their frontal lobe (Creativity 2009). However, these ideas are challenged by Robinson (in Azzam 2009:22-23) in that one of the misconceptions that exists about creativity is that it only relates to 'special people' whereas a policy for creativity in education needs to be about everybody, not just a few. Creativity is not about 'letting go' - it is a disciplined process that requires skill, knowledge and control as well as imagination and inspiration.

Gardner (2006:67) and Henson and Ellen (1999:353-355) describe the characteristics of creative students as:

- Willing to take risks
- Rejecting limitations and often trying the impossible
- Questioning social norms
- Being inquisitive and curious
- Being intelligent and creative
- Having substantial knowledge about their chosen field of study
- Being motivated and prepared.

Jensen (1996a:235) links the creative process with motivation. He is of the opinion that a reward system prevents the establishment of intrinsic motivation because there is rarely an incentive to be creative – only to demonstrate the asked-for behaviour. Jensen states that creativity is rarely part of any reward system and therefore he deems motivation and creativity as at the far ends of a scale. He explains this in the following quotation: “You get either intrinsically motivated creative thinking or extrinsically motivated repetitive, rote, predictable behaviours”.

Henson and Eller (1999:357) explain the methods that teachers can use to encourage creativity amongst students as:

- Model and demonstrate creativity yourself
- Provide opportunities for students to be creative
- When students are creative, be sure to reward their efforts.

Gardner (2006:67) adds a few teacher related comments to the above explanation by Henson and Eller. Gardner stresses that teachers cannot be creative unless they have mastered their domain.²⁶ Creativity also has more to do with personality than with intellectual power. “No matter how bright or hardworking an individual is, if opportunity to be creative is denied, there can be no creativity” (Henson and Eller 1999:354).

3.6.2 Preference

Various researchers have suggested that musical opportunities²⁷ are significant in contributing to one’s musical preference (Fung 1996; LeBlanc 1982 and Wapnick 1980). Very often, music educators subscribe to a long-term goal of broadening students’ musical preferences (LeBlanc and Cote 1983; Shehan 1986). In so doing, they lead students to engage in music away from their preferred styles, thereby expanding their horizons. Such a goal requires seeking out new and different music. (I have observed during the last 16 years of piano teaching that a great number of pianists can be led to prefer to play more jazz/contemporary/popular than traditional, classical styles of music).

Fung’s 1996 study showed that preference is an important mediating agent in the process of music teaching and a ‘springboard’ for further music learning. LeBlanc’s 1982 interactive theory of the sources of music preference formed a model that was constructed in such a way as to present the possible influences that could lead a listener to a single music preference decision, which could be either an acceptance or rejection of it.

Music preference decisions are based upon the interaction of input information and the characteristics of the listener, with input information

²⁶ Domain here refers to the creative domain in question – e.g. music teaching (Gardner 2006:67).

²⁷ Referring to features such as composers and repertoire being exposed to over a period of time, music listened to amongst peers and students’ learning styles.

consisting of the musical stimulus and the listener's cultural environment (LeBlanc 1982:29).

One of the most important goals in music teaching is to broaden students' understanding and appreciation of music.

Our students will live most of their lives in the twenty-first century. We need to facilitate this bridge to the future by re-evaluating traditional teaching methods and materials to determine their ability to help students embrace the diversity and complexity of contemporary music. By supplementing traditional materials with contemporary compositions and studies from the earliest lessons; we can expose our students to the ever-changing concepts of musical sound and expanded performance practice techniques that will accommodate the diverse range of challenges presented in this music (Johnson 2005:3). Personality characteristics can influence an individual to be more or less receptive to different musical styles and the influence of various aspects of the cultural environment (LeBlanc 1982:35).

Kirkpatrick's 2005 study on choosing motivational repertoire for young pianists (especially 20th century repertoire) showed that when students are playing repertoire they enjoy, understand and that is at the same time pleasant for them, they tend to be more motivated to practise. Magrath (1983:48) explains that students are intrigued by the new sounds and techniques that the avant-garde calls for, resulting in enthusiasm that will affect the students' total attitude and interest in piano study. LeBlanc (1982:40) concludes that a preference decision will be made when a listener feels that enough input information is available. Further exploration of the stimulus and/or environment may or may not be considered necessary. When the music stimulus is rejected, the processing of that stimulus information will end. A listener who decides in favour of acceptance is likely to listen to the favoured music repeatedly, with heightened attention.

3.6.3 Self image

A person's self image is the mental picture, generally of a kind that is quite resistant to change, that depicts not only details that are potentially available to

objective investigation by others (height, weight, hair colour, sex, IQ score), but also items that have been learned by that person about himself or herself, either from personal experiences or by internalizing the judgments of others.

A simple definition of a person's self image is his/her answer to the question "What do you believe people think about you?" A more technical term for self image that is commonly used by social and cognitive psychologists is self-schema. Like any schema, self-schemas store information and influence the way people think and remember. For example, information which refers to the self is preferentially encoded and recalled in memory tests (Self image 2009).

3.6.4 Emotion

Corsini (2002:324) describes emotion as any "mental state characterized by various degrees of feeling and usually accompanied by motor expressions, often quite intense". Butler and McManus (2000:62) explain that it is difficult for psychologists to provide an adequate definition of emotion, partly because measures of its components do not consistently correlate with each other. Five components regarding emotion are distinguished:

- Physiological: heart rate and blood pressure changes,
- Expressive: smiling, frowning, slumping in a chair,
- Behavioural: making a fist, running away,
- Cognitive: perceiving a threat, danger, loss or pleasure, and
- Experiential: the complex of feelings experienced.

Emotions normally organize our activities. Feelings, which may keep changing and which are not always understandable or logical, may influence and are influenced by processes such as perception, attention, learning, thinking, reasoning and communicating (Butler and McManus 2000:55). It is interesting to note that different emotions appear to be governed by different parts of the brain. The frontal lobes are known to have special significance for emotion. Butler and

McManus (2000:63-64) have observed that anger and sadness predominantly involve the right hemisphere while emotions such as happiness mostly involve the left hemisphere. The limbic system functions as an emotional centre whereas the cortex and neocortex add the ability to think about feelings.²⁸

Robert Plutchik²⁹ offers an integrative theory based on evolutionary principles. Emotions are adaptive - in fact, they have a complexity born of a long evolutionary history—and although one conceives of emotions as being feeling states, Plutchik explains that the feeling state is part of a process involving both cognition and behaviour and it contains several feedback loops (Chen 2001).

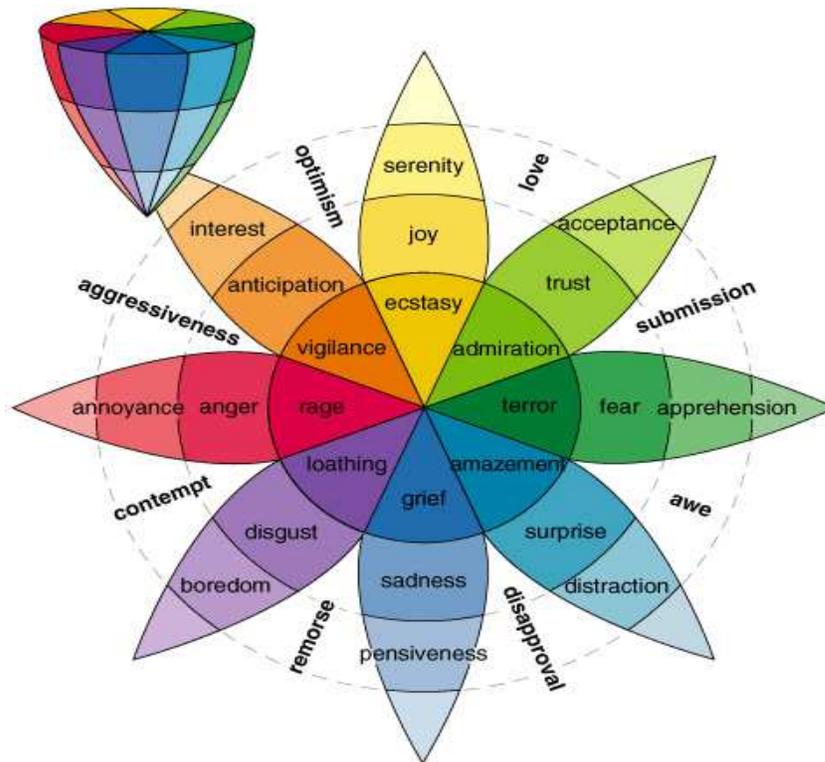
Students and teachers frequently experience mixtures of emotions, or shades of feelings, as various as the colours one perceives. There are common aspects to feelings, although when one student experiences sadness it will differ from other students because the degree of sadness will be influenced by how it fits into their world. 'Their world' is determined by past experiences, memories, thoughts, reactions and the ways in which others have previously reacted to their feelings of sadness (Butler and McManus 2000:62-63; Sternberg 2006:220).

Plutchik's wheel of emotions is worth including since it contains basic and advanced emotions, as well as their opposites. This is important for teachers to be aware of because it will enhance their perceptions regarding their students' emotional states and assist them to work and collaborate with them effectively.

²⁸ The function of various parts of the brain in relation to learning, teaching and emotions is more fully discussed in Chapter 5.

²⁹ Robert Plutchik (1927-2006) was a psychologist and professor emeritus at the Albert Einstein College of Medicine. He was also an adjunct professor at the University of South Florida and received his Phd from Columbia University. Plutchik's main research interests were the study of emotions, suicide, violence and the psychotherapy process (Robert Plutchik 2009).

Figure 5: Plutchik's wheel of emotions (Chen 2001).



Plutchik's psycho-evolutionary theory of emotion is one of the most influential classification approaches for general emotional responses. He considers there to be eight primary emotions - anger, fear, sadness, disgust, surprise, anticipation, trust and joy. He states that these 'basic' emotions are biologically primitive and have evolved in order to increase the reproductive fitness of the animal. Furthermore he argues for the primacy of these emotions by showing each to be the trigger of behaviour with high survival value, such as the way fear inspires the fight-or-flight response (Plutchik 2009).

Plutchik's three-dimensional circumplex model (illustrated in figure 5 above) describes the relations among emotion concepts, which are analogous to the colours on a colour wheel. The cone's vertical dimension represents intensity, and the circle represents degrees of similarity among the emotions. The eight sectors are designed to indicate that there are eight primary emotion dimensions defined by the theory and arranged as four pairs of opposites. In the expanded

model the emotions in the blank spaces are the primary dyads - emotions that are mixtures of two of the primary emotions (Mood and Emotion 2009).

The following figure includes the list of basic emotions with their respective opposites.

Figure 6: Plutchik's list of basic emotions with opposites (Chen 2001).

Basic Emotion	Basic Opposite
Joy	Sadness
Trust	Disgust
Fear	Anger
Surprise	Anticipation
Sadness	Joy
Disgust	Trust
Anger	Fear
Anticipation	Surprise

The advanced³⁰ emotion optimism is composed of anticipation and joy. The composed opposite emotion will be disappointment. The advanced emotions will not be discussed in full in the framework of this thesis, but just referred to in order to indicate how the basic combinations work.

An awareness regarding emotion is important in music teaching since it can assist the teacher to be more empathetic and understanding towards students. From their side students can feel a connectedness with their teacher. In practice this would mean the students know the teacher cares, pays attention to their needs and attempts to understand who they really are. The author is of the opinion that the aspect of motivation also plays an important role in that there is an interconnectedness between emotion and motivation. This observation is supported by Butler and McManus (2000:55-57) and Chen (2001).

³⁰ Advanced here means the combination of two basic emotions as found in figure 6.

Chapter 4

LEARNING AND TEACHING STYLES

Everyday, every student should have a chance to shine, to glow for a moment in the sunlight of success. Teachers who help create those special times are truly enriching the lives of young persons they've been fortunate enough to teach. The sunlight that's created will continue to spread in countless ways, reaching many for a long time (Yurko 1992:14).

4.1 Introduction

There has been a growing recognition among not only education professionals but also parents that pupils learn in various ways (Bruckner 2009:29); that they have different learning styles. For teachers, an awareness of learning styles can impact substantially on pedagogy, leading to a better understanding of pupils' interactions in lessons, and an awareness of the need to differentiate materials by learning style.

This chapter will provide perspectives on different learning and teaching styles used by teachers and pupils and how these can be expanded in the 21st century. Motivation will also be addressed as it forms an extensive part of the learning process.

Teachers have different preferred modes of thinking, teaching and perceiving. As with teachers, pupils have different viewpoints regarding learning, understanding and perceiving. Such preferences influence how information is processed and stored as well as retrieved in order to make meaning out of it. Effective learning is "whole-brained" (Leonard 2006). Teachers typically design learning experiences that reflect their own thinking/learning preferences, therefore

teachers need to re-examine their previous assumptions about teaching and learning (Leonard 2006).

4.2 What are learning styles?

Pedagogically, learning styles are “the recognition that different pupils learn in different ways” (Learning Styles Masterclass Notes 2006); while some pupils learn more through reading books, others have more success with pictures and diagrams; while some pupils prefer to learn in groups, others like working on their own. Gordon and Bull (2004) view a learning style “as the unique way of thinking and reasoning that characterises an individual learner”. Garcia (2002) describes a learning style as “... sensory channels through which an individual receives and retains information”. These sensory channels are visual, auditory and kinesthetic. Bruckner (2005:29) and Garcia (2002) assert that everyone has a dominant modality/learning style, but learns with time to integrate other learning styles. Both Bruckner (2005) and Garcia (2002) observed that in children the dominant modality is the most efficient channel to receive and retain information.

Bruckner (2005:29) believes that when individuals are under stress they will choose to operate within the most dominant learning style. The author, however, thinks that there could be a more open-ended approach to these ideas, since learning is influenced by various circumstances as will be discussed in due course. It is acknowledged that pupils function from a dominant learning style, intelligence or brain quadrant during musical learning, but the question arises as to how to address the other criteria relating to the less developed areas of their learning styles, intelligences and brain quadrants³¹.

An eclectic viewpoint in this regard will give both pupil and teacher the freedom not to be stereotyped or labelled as a specific learner or teacher. However, there

³¹The Ned Herrmann brain dominance framework and possible other existing frameworks concerning the four brain quadrants will be referred to in detail at a later stage in the chapter.

need to be some flexible guidelines to start with when learning and teaching and therefore it is necessary to acknowledge and consult the various existing theories, viewpoints and classifications contributed by notable educators, neurologists, philosophers, psychologists and researchers.

There is a substantial body of literature, based on the work of Howard Gardner, on the concept of 'Multiple Intelligences'³². Gardner is credited with originating the theory about these intelligences, initially identifying seven (Gardner 1983, 1993), and later adding subsequent intelligences (Gardner 1999:60-69; Willingham 2000:1; Wise 2001).

Linguistically, the terms 'multiple intelligences' and 'learning styles' are different, but when looking through literature it was frequently found that the descriptions provided are similar, with the two terms often used interchangeably. Thus, although there are linguistic distinctions there is no clear logical or methodological distinction (Learning Styles Masterclass Notes 2006). However, Gardner (2003:8) had noticed by the middle 1990s that there were particular confusions and misinterpretations of his theory. He mentions specifically the confusions of intelligences with learning styles (he does not deem them exactly the same) and a human intelligence with a societal domain (e.g. musical intelligence being equal to the complete knowledge of a certain musical genre). Gardner (1995:202-203) highlights that the concept of 'style' designates a general approach that an individual can apply equally to every conceivable content. In contrast, an 'intelligence' is a capacity, with its component processes, that is geared to a specific content in the world (such as musical sounds or spatial patterns).

The author is of the opinion that the two terms multiple intelligences and learning styles stand in relation to each other; rather than one replacing the other.

³² Since the aspect of Multiple Intelligences is discussed in chapter 6, the term will just be referred to here in relation to the term learning styles.

Therefore it would be of more functional use to agree with Gardner that the two terms are not in all aspects synonymous. What has happened in most cases is that individuals have taken Gardner's ideas on multiple intelligences as a starting point and altered them to suit their own requirements, renaming the outcome as a scheme of learning styles. As a result, there is no agreed set of learning styles (Learning Styles Masterclass Notes 2006). The aim will thus be, in the sections to follow, to map out the possible learning styles applicable to pupils and how these function in relation to multiple intelligences.

4.3 Aspects influencing learning and teaching styles

In understanding aspects influencing effective learning and teaching styles, it is important to focus on the interaction between pupil and teacher in relation to the material being taught. The level of interaction between pupil and teacher is determined by a number of factors. The teacher, for instance, has his or her own particular teaching style, way of communicating and motivational strategies.

During the teaching process, aspects to be considered would be the pupils' brain profiles and personality types³³. This will determine the type of learners they are. Their dominant intelligences and particular character strengths also play an important role in learning and are fully discussed in chapter 6. Therefore the author has decided to consider independently the facets influencing pupil and teacher at first and then to focus on where these various elements interact.

In order for educators to have a better understanding of their pupils and be more effective in the teaching process, it is necessary to consider the following aspects relating to learning and teaching.

³³ See chapter 5 for a comprehensive discussion of these topics.

Humans access their world through the five senses. These senses become the screens through which pupils interpret their experiences or 'learnings' (Bruckner 2005:27 and Hannaford 1995:31). Hannaford (1995:30) explains that the richer the pupils' sensory environment and the greater their freedom to explore it, the more intricate will be the patterns for learning, thought and creativity.

Bruckner (2005:27) discusses that there are, apart from the senses, other special areas of learning styles observable within pupils. The contextual learning area explores the circumstance of the learning situation. This area concerns itself further with whether a pupil is primarily an independent, dependent or interdependent learner. The contextual framework focuses on whether a pupil is content or relationship driven. The first type of pupil will learn even if he/she dislikes the teacher, while the second needs a relationship to access information. Lastly this framework looks at whether a pupil does better in a structured, conforming environment or in a flexible environment.

Some pupils process information globally while others prefer analytical processing. Global processors think more in abstractions and tend to multitask. As will be discussed later, the Ned Herrmann Brain Dominance framework can be helpful for this learning style area (Bruckner 2005:27).

4.4 Types of learners

Research done by both Bruckner (2005) and Hannaford (1995) stresses the importance for pupils to learn mainly through the use of their senses as well as experiencing the learning process practically.

Bruckner (2005:29) and Persellin (1992:307) distinguish between three types of learners. There are those who rely on their visual sense when looking at the learning process; hear music through the auditory channel and those who find it easier to grasp new musical information through the kinesthetic mode. Some

pupils might also sometimes be multisensory i.e. learning easily in any of the three modes. Combined with the above, Bruckner (2005:28) and Hannaford (1995:78-79) continue to explain that each pupil has a specific neurological 'map' that has designed a dominant hand, foot, eye, ear and brain hemisphere. Approaching learning through the use of the four brain quadrants the author will aim to give a brief summary and comparison of eight four-quadrant learning style frameworks, and in a later chapter describe how these interact with the pupils' intelligence profiles. The focus at this stage will be on the Visual, Aural and the Kinesthetic learner.

The author has observed during teaching that pupils generally tend to prioritize one sense over another when approaching new learning tasks. When starting work on a new piece of music some pupils want to hear it first, others would prefer to see the score while others will check for how the piece 'moves' them physically and emotionally at the first hearing.

Gordon and Bull (2004) state that the three main criticisms against the use of learning styles can be:

- The stereotyping or pigeonholing of the learner
- Not a stable cognitive factor over time
- Not stable over different tasks and situations.

Operating from an eclectic orientation, however, the author sees these criticisms as rather general and modernist in approach, since the eclectic orientation will not in principle stereotype a pupil. The assumption that learning styles are not a stable cognitive factor over time is debatable since both pupil and teacher are likely to gain knowledge through thought, experience and the senses and therefore do not necessarily need the learning style to be stable over time. The constant changing and adapting to different students are exciting and creative and can have a positive outcome for both pupil and teacher. That learning styles are not stable over different tasks and situations are likely to be so at times, but

with careful planning and observation both pupil and teacher can adapt to choose the most appropriate learning style to operate from.

4.4.1 **The Visual Learner**

As a society we live in a highly visual world. Almost all the information that pupils access is observed as visual. Relating to this it has been shown that visual retrieval from the brain is the quickest type of recall (Bruckner 2005:31).

Pupils that learn visually think in images and mainly convert all information presented to them into pictures. Personality traits that best represent the visual learner are neatness, order and meticulousness. In instrumental music it will often be the pupil who can sight-read well, and if asked to sing a melody just played, he/she might not be able to. Playing might be very accurate, but there might be difficulties in playing expressively or in memorizing music (Garcia 2002).

Visual learners have the ability to recall information in any order (Bruckner 2005:31). Bruckner concludes that when a certain learning sequence is jumbled, the visual learner will seldom struggle, whereas it would be more difficult for the auditory or kinesthetic learners to be as successful as the visual learners.

These types of learners were found not to enjoy practising their assigned homework regularly, since they rely on reading it for the first or second time during the lesson, pretending to have practised it for hours in preparation.

4.4.2 **The Aural Learner**

Aural learners learn best by hearing or listening, and then repeating what they have heard. They are often talkative and easily distracted by sounds. Some might have difficulty writing. In appearance their clothes might not match,

although they think they do. On their instruments they can play just about anything by ear, but struggle or sometimes even refuse to read the simplest notes (Garcia 2002). The author has found in this regard that aural learners have a tendency to change notes or rhythms in a piece of music, preferring their 'improved version' to the composer's.

The pupils who access the auditory channel first and foremost in their learning style do not necessarily have an advantage over the visual and kinesthetic learners (Bruckner 2005:41). Bruckner observes further that although all pupils have a special keenness towards listening and are naturally drawn to the world of sound, they can still access this world primarily through visual or kinesthetic channels.

4.4.3 The Kinesthetic Learner

Kinesthetic learners learn through their body or sense of touch. They learn best by doing, thus whole body movement is the preferred method. They will change their pose from one minute to the next, rarely sitting in one position for more than a few minutes. In appearance and personality they might appear disorganized or restless – they are the young pupils who need to sharpen pencils more than anyone else, and are often lacking a sense of the consequences of their actions. They are the ones who have huge difficulties adapting to traditional classroom settings and therefore can often be labelled as having learning disabilities (Garcia 2002). Bruckner (2005:46) adds to Garcia's viewpoint in that these students are most at risk in our schools today. They are often labelled with ADD³⁴ (Attention-deficit disorder); ADDH³⁵ (Attention-deficit disorder with hyperactivity)

³⁴ A neurobiological disorder with onset before age seven, characterized by inconsistent attention and impulsivity (Corsini 2002:75).

³⁵ A syndrome characterized by inattention, impulsivity and considerable activity at inappropriate times and places (Corsini 2002:75).

and ADHD³⁶ (Attention-deficit-hyperactivity disorder), because they do not seem to be able to sit still like their more visual or auditory classmates.

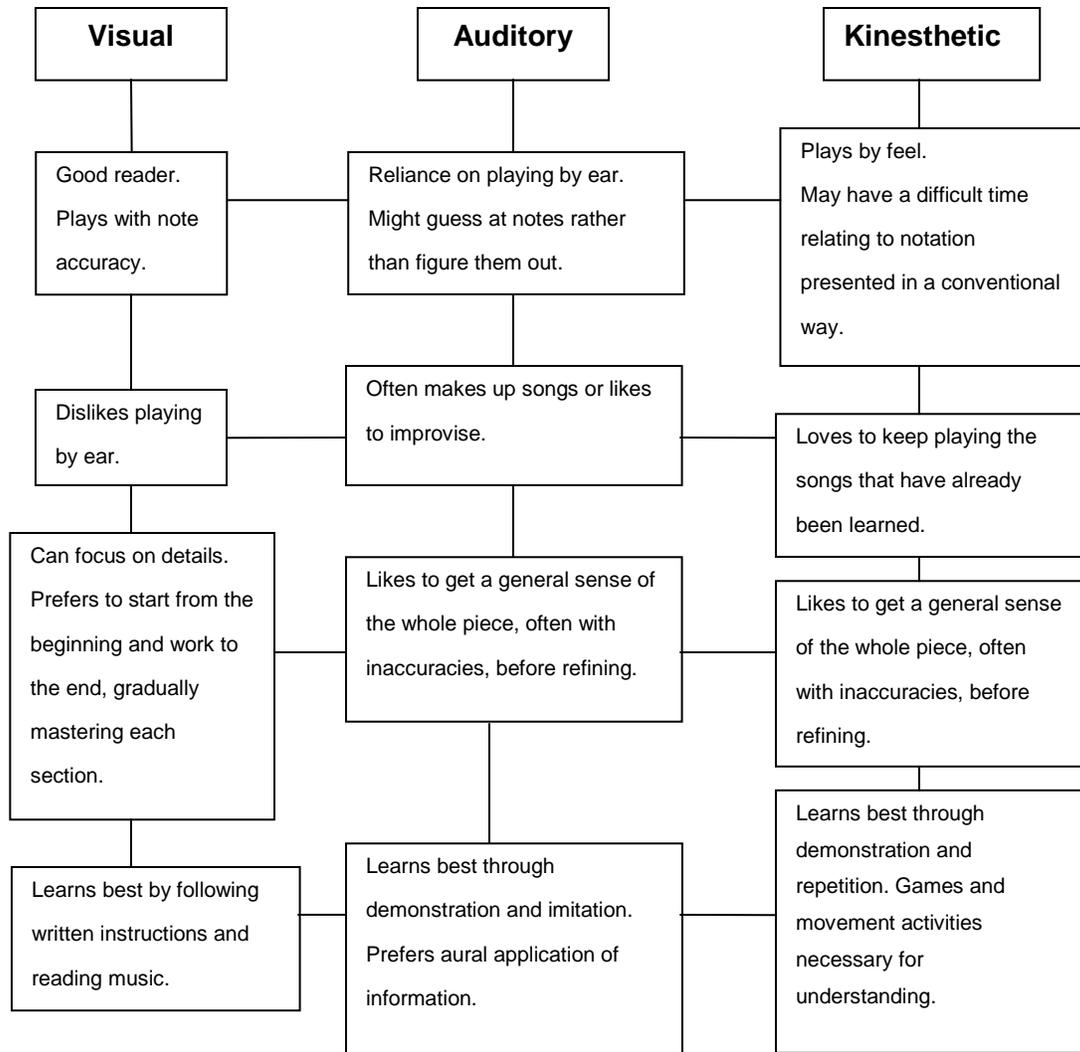
The author has found these students constantly wanting to play even when you are talking to them or explaining something. They enjoy playing the same piece over and over for long periods of time without getting tired of it at all. At first the author found it difficult to believe that these pupils actually learn better when they are in motion. In fact they may need to be in motion in order to grasp verbal input. They often appear to be doing more than one activity at a time, and in fact, they are.

4.5 Learning types considered in the music teaching context

In order to summarize the above section the author has found this figure outlined in Garcia (2002) very useful. Only selected items are included for functional reasons.

³⁶ A neurobiological condition characterized by persistent restless overactivity (also known as hyperactive-child syndrome – HACS). Such individuals are overactive, have a short attention span, sleep poorly and frequently exhibit educational and perceptual deficits (Corsini 2002:75).

Figure 7: Learning styles and characteristics of music students (adapted from Garcia 2002).



4.6 Learning style models

Pupils have different learning styles, characteristic strengths and preferences in the ways they take in and process information. The author is of the opinion that for any pupil to eventually function effectively in any professional capacity requires working well in all learning style modes. Thus an objective of education should be to help students build their skill in both their preferred and less preferred modes of learning. Learning style models that categorize these modes

provide good frameworks for designing instruction with the desired breadth. See for example figure 9, where focus is on models making use of the four-quadrant basis, some of which is what the author chose to emphasize. The goal is to make sure that the learning needs of pupils in each model category are met at least part of the time. This is referred to as “teaching around the cycle” (Felder 1996:18). The author acknowledges the use of the following four-quadrant models in teaching and learning. It is not the purpose of this study to discuss each model in detail, but it is important to be aware of different models. These different models give the teacher the opportunity of determining which ones to use when teaching their pupils. The figure to follow is a mere summary of the four-quadrant models most in use.

Figure 8: A description and comparison of eight four-quadrant learning styles and models (Gordon and Bull 2004 and Felder 1996:19-20).

<p>Keirsey Temperament Sorter II</p> <ul style="list-style-type: none"> • <i>Guardians</i> are conformity-orientated, and prefer systematic, structured learning • <i>Idealists</i> are interpersonally-orientated, and prefer to learn through discussion • <i>Artisans</i> are play-orientated, and are free-wheeling and creative • <i>Rationals</i> are learning-orientated, and prefer to learn by theorising, and analysing and creating models
<p>The Kolb Model</p> <ul style="list-style-type: none"> • <i>Converging</i> learners like to learn by solving problems and doing technical tasks, good at finding practical uses for ideas • <i>Accommodating</i> learners are people-oriented, hands on learners, who rely on feelings more than logical analysis • <i>Diverging</i> learners prefer to learn by observation, brainstorming and gathering information, are imaginative and sensitive • <i>Assimilating</i> learners prefer to learn by putting information in concise logical order, and using reflective observation
<p>Herrmann Brain Dominance Instrument Model (HBDI)</p> <ul style="list-style-type: none"> • <i>Quadrant A (Cerebral Left)</i> is a factually-oriented learner, takes a logical, analytical, quantitative approach to learning tasks • <i>Quadrant B (Limbic Left)</i> likes to learn in a sequential and organised way, and when instructional exercises are structured and detailed • <i>Quadrant C (Limbic Right)</i> has an interpersonal preference, is emotional and kinesthetic • <i>Quadrant D (Cerebral Right)</i> prefers to take a holistic approach, is a very innovative learner and is strongly visual
<p>The Gregorc Model</p> <ul style="list-style-type: none"> • <i>Concrete Sequential</i> are hardworking, conventional learners, who are always dependable and organized • <i>Abstract Random</i> are sensitive and compassionate learners, who are spontaneous and flexible • <i>Concrete Random</i> are quick, curious and intuitive learners, who combine a creative streak with a realistic outlook • <i>Abstract Sequential</i> are analytical, objective learners, who are thorough, structured and logical



<p>The 4MAT Model</p> <ul style="list-style-type: none">• <i>Type 1 (Innovative Learners)</i> are interested in personal meaning, prefer co-operative learning, like brainstorming• <i>Type 2 (Analytic Learners)</i> are interested in acquiring facts in order to deepen their understanding of concepts and processes, like lectures and analysis of data• <i>Type 3 (Common Sense Learners)</i> are interested in how things work, prefer concrete experiential learning activities• <i>Type 4 (Dynamic Learners)</i> are interested in self-directed discovery and rely heavily on their own intuition, like role-playing and games
<p>The Honey-Mumford Model</p> <ul style="list-style-type: none">• <i>Pragmatists</i> prefer that the topic under study has an obvious link to the real world, and like to be given immediate opportunities to implement what they have learned• <i>Activists</i> enjoy new experiences and challenges, like teamwork and problem-solving, and enjoy leading discussions• <i>Reflectors</i> prefer to watch, think and ponder on activities, can carry out careful detailed research, and do not like pressure or tight deadlines• <i>Theorists</i> like to learn from models, concepts and theories, like to analyze and evaluate, and use logic
<p>The Gordon-Bull Model</p> <ul style="list-style-type: none">• <i>Alpha Style</i> – these are the practical learners, they like topics which are clearly structured• <i>Beta Style</i> – these are the discussion-orientated learners, they like working in groups, and derive most benefit from intrapersonal learning• <i>Gamma Style</i> – these are the holistic learners, they prefer an overview of the topic before delving into specific detail. They are highly imaginative and bring this resource to the learning process• <i>Delta Style</i> – these are the analytical learners, they are dispassionate learners who like to focus on concepts, theories and logic
<p>Felder-Silverman Learning Style Model</p> <ul style="list-style-type: none">• <i>Sensing Learners</i> – concrete, practical, oriented towards facts and procedures or <i>Intuitive Learners</i> – conceptual, innovative, oriented towards theories and meanings• <i>Visual Learners</i> – prefer visual representations of presented material – pictures, diagrams, flow charts or <i>Verbal Learners</i> – prefer written and spoken explanations• <i>Inductive Learners</i> – prefer presentations that proceed from the specific to the general or <i>Deductive Learners</i> – prefer presentations that go from the general to the specific• <i>Active Learners</i> – learn by trying things out, working with others or <i>Reflective Learners</i> - learn by thinking things through, working alone• <i>Sequential Learners</i> – linear, orderly, learn in small incremental steps or <i>Global Learners</i> – holistic, systems thinkers, learn in large leaps

As observed from the above, there are many similarities and differences in each model. At times the same thinking style is just called something else. For the purpose of the study the author chose to focus largely on the Herrmann Brain Dominance Model since this method classifies pupils in terms of their relative preferences for thinking in four different modes that are based on the task-specialized functioning of the physical brain.

Ned Herrmann's Whole-brain Model³⁷ combines Roger Sperry's left/right brain theory and Paul MacLean's triune model (rational brain, intermediate brain and primitive brain) to produce a quadrant model of the brain (Leonard 2006).

4.6.1 Herrmann Brain Dominance Instrument (HBDI)

Developed in 1978 by Ned Herrmann, the HBDI is an instrument based on an analogy to the brain's cognitive functioning (Power et al 1999:27). It is a 120-item instrument containing a variety of questions about individual performance on work elements, how individuals describe themselves, best and worst subjects, hobbies, energy level, motion sickness, handedness and personal preferences (Power et al 1999:28).

In his article on the four quadrants of the brain, Gross (2008:1) suggests some practical ways that learning and teaching can be enhanced by acting on the fact that people differ in the ways they learn best. He puts forth his most preferred framework, developed by Ned Herrmann³⁸. Briefly, Herrmann suggests thinking of our brains as divided into four quadrants, each with distinctive strengths. This scheme is not a literal map of the anatomy of the brain, but it does reflect the ways in which different physical locations inside your skull specialize in different ways of processing information (Gross 2008:1).

McKeachie (2006) suggests that brain dominance leads to thinking style preferences, which impact on what we pay attention to and how and what we learn best. Each of these four quadrants is listed below with words that typically

³⁷ See chapter 5 for further discussion of this model.

³⁸ William E. "Ned" Herrmann (1922-1999) is known for his research in creative thinking and whole-brain methods. He spent the last 20 years of his life applying brain dominance theory to teaching, learning, increasing self-understanding and enhancing creative thinking capabilities on both an individual and corporate level. Sponsored by General Electric, he developed and validated the Herrmann Brain Dominance Instrument (HBDI) and designed the Applied Creative Thinking Workshop (ACT), which has been recognized as a leading workshop on creative thinking (Ned Herrmann 2007).

characterize a person who uses that thinking style (Herrmann Brain Dominance Instrument 2007). The four thinking styles are:

- A: The Rational self/Analytical thinking (Upper or Cerebral Left Brain)
 - B: The Safekeeping self/Sequential thinking (Lower or Limbic Left Brain)
 - C: The Feeling self/Interpersonal thinking (Lower or Limbic Right Brain)
 - D: The Experimental self/Imaginative thinking (Upper or Cerebral Right Brain)
- (see Figure 9).

Figure 9: The four quadrants by Ned Herrmann (Herrmann Brain Dominance Instrument 2007; Leonard 2006; McKeachie 2006 and Power et al 1999: 27-28).

<p>A: Rational Self/Analytical thinking/ Theorists</p> <p>Understands how things work/technical Knows about money Likes numbers Is realistic Is critical Quantifies Analyzes Factual (judging ideas based on facts, criteria and logical reasoning) Collects data</p>	<p>D: Experimental Self/Imaginative thinking/ Innovators</p> <p>Innovative/creative problem-solving Imagines Is curious/plays/takes initiative Likes surprises Breaks rules/challenges assumptions Long term thinking Is impetuous, takes risks Visual/metaphoric thinking Holistic/looking at the big picture Intuitive Conceptual</p>
<p>B: Safekeeping Self/Sequential thinking/ Organizers</p> <p>Plans/step-by-step problem-solving Timely Is neat Organizes/implement what is organized Is reliable Gets things done Establishes procedures/follows directions Takes preventive action Structured Complexity or detailed/detail oriented work</p>	<p>C: Feeling Self/Interpersonal thinking/ Humanitarians</p> <p>Feels/sensory input Talks a lot Is emotional/looking for personal meaning Is expressive/listening to and expressing ideas Is supportive Touches a lot Likes to teach Is sensitive to others Kinaesthetic Spiritual Group interaction</p>

A majority of people (pupils and teachers in the context of the thesis) have at least two primary quadrants. Each person can have primary preferences (areas of the brain he/she operates easily in and enjoys), secondary preferences (areas of the brain that can be and are accessed when necessary) and tertiary preferences (areas a person may have difficulty accessing or may even avoid). People have varying degrees of dominance in the quadrants and it is not necessary to identify with everything in the quadrant to have some strength there. The full working of the HBDI instrument will not be dealt with in the context of this thesis, but will be referred to for functional reasons when necessary.

Herrmann also developed the concept of whole-brain thinking, characterized by the situational use of all four quadrants as needed. The theory was inspired by the research into left-right brain lateralization during the 1970s, and further developed to reflect a metaphor for how individuals think and learn (Herrmann Brain Dominance Instrument 2007).

4.6.2 Using the whole-brain in teaching and learning

Gross (2008) suggests that the knack of effective learning is to know which of the brain quadrants the teacher/student favours and to structure the educational process so that maximum use can be made of those strengths. However, at a later stage in the article he deems it necessary to strengthen all the quadrants of the brain. It is important as a learner or teacher to use a wide repertoire of ways of understanding concepts, including the abstract, the procedural, the imaginative and the emotional. The author shares Gross's opinion in this regard.

The most important challenges people face in life require the use of capabilities from all four ways of thinking. In handling financial affairs, for example, it is not desirable to focus on just one approach such as a bookkeeping mind-set (limbic left), or on imaginative ways to create more wealth (cerebral right), or on feelings about getting and spending (limbic right). People need to use all of these parts of

the brain to best design their financial lives in terms of savings, projections, creativity, or resourcefulness.

To address personal life challenges and those of students, teachers need to develop students' four quadrants maximally and in order to do that they need to use their whole brains (Gross 2008). Power et al (1999:35) note that it is possible for students and teachers alike to survive misunderstandings, lack of creativity, in the box thinking, etc, when concentrating on adopting a variety of thinking styles.

4.7 Flow experiences in learning, teaching and motivation

The American psychologist Abraham Maslow (1908-1970) at first firmly believed in behaviourism, but later his work emphasized human potential and today his contribution to psychology is associated with the hierarchy of needs³⁹ (Meyer et al 2003:335). Csikszentmihalyi's theoretical model on flow⁴⁰ explores optimal experiences that are derived from a wide variety of activities (Csikszentmihalyi 1990:4 and Gelb 2009). Passive and active processes are fully integrated when creativity functions at its peak. Diamond (2009) refers to it as being in the "zone", which indicates a state of ecstasy. All of these descriptions correspond with Maslow's idea of a peak experience⁴¹ which is accelerated through the pleasures of music. Elliott (1995:109) adds to this that the actions of music making and listening give rise to positive and satisfying experiences which are rewarding within themselves.

Human beings have an inherent drive to know their capacities to bring order to consciousness and to gain self-knowledge (Elliott 1995:113, 115). Gardner (1983:3) supports Elliott's view in that he claims that "all men by nature desire to

³⁹The hierarchy of needs include physiological, safety, affiliation and love, self esteem and self actualization needs (Meyer et al 2003:338).

⁴⁰ Refer to 2.7 in chapter 2.

⁴¹ A peak experience refers to moments of intense excitement and tension, but also of peace, bliss and serenity (Meyer et al 2003:347).

know”. This is what Maslow described as self actualization (Meyer et al 2003:341-342). Reimer (2003:52-53) affirms that through music and other arts people discover a sense of meaning, self-understanding and inner development which results in better self-knowledge.

Viewing the above statements it could be said that the main goal of each self is to order, strengthen and support the self and this happens through pursuing activities that are absorbing, demanding and self-fulfilling (Davis et al 2000:247; Elliott 1995:113). Thus optimal experiences arise when teachers and pupils actively seek out and take up challenges that match and extend their capabilities and skills. These experiences give feedback to and strengthen the self, enhancing self esteem (Elliott 1995:115-116).

The many beneficial consequences of flow can enhance intrinsic motivation more than extrinsic motivation (Goleman 1996:94). Csikszentmihalyi (1990:209-213) describes the characteristic dimensions of the flow experience in the following way:

- Perception of clear goal(s) must be present.
- Becoming fully immersed in the activity is important – even to the point of experiencing a sense of loss of self-consciousness and experiencing of self awareness.
- Being single, almost one-track minded in concentration on the task at hand.
- Learning to enjoy the immediate experience at hand.
- An altered sense of time exists (which normally seems to pass faster).

The above dimensions when encouraged in students can lead to more focussed and precise work, concentrated actions in completing tasks and optimal enjoyment of the action or activity being performed.

4.8 Transformative learning theory

Encouraging transformative learning⁴² is portrayed by ‘teaching for change’ – a practice of education where students are challenged to assess their value systems and worldview and are then subsequently changed by the experience (Quinnan 1997:42). Despite this understanding, the practice of fostering transformative learning can be an ever-shifting approach to teaching (Taylor 2009:3).

In music, students may be required to create original interpretation of texts or to consider conflicting interpretations of texts instead of seeking the one, teacher-approved, ‘correct’ interpretation. This forward thinking approach replaces the instilled ideas that students have learned, practised and been rewarded for (McGonigal 2005:1). Transformative learning theory addresses this general teaching challenge. The theory describes the processes necessary for students to make the most significant kind of knowledge transformation, also known as perspective transformation.

Mezirow (1991:167) describes perspective transformation as:

... the process of becoming critically aware of how and why our assumptions have come to constrain the way we perceive, understand, and feel about our world; changing these structures of habitual expectation to make possible a more inclusive, discriminating, and integrating perspective; and finally, making choices or otherwise acting upon these new understandings.

Teachers who wish to facilitate transformative learning need to create an environment that encourages and rewards intellectual openness. Transformative learning theory recognizes that changing students’ or teachers’ perspectives is not simply a rational process. Being forced to consider, evaluate and revise underlying assumptions can be an emotionally charged experience. Initial

⁴² See 2.6 in chapter 2.

resistance to transformation is common amongst both teachers and students (McGonigal 2005:2).

Taylor (2009:4) mentions that more evolving elements than those listed at first in paragraph 2.6 have emerged. These include:

- A holistic orientation
- Awareness of context and
- An authentic practice.

It is important to note that these elements have an interdependent relationship; they do not stand alone. Without individual experience, there is little to engage in critical reflection. A holistic orientation encourages engagement with other ways of knowing – the affective and relational. Developing an awareness of context includes the surroundings of the immediate learning event, the personal and professional situation of the learners at the time, and the background context that is shaping society. Establishing an authentic practice is significant for fostering trusting relationships between learners and teacher, which often provides the safe environment for learners to engage in critical reflection, ultimately allowing transformative learning to take place (Taylor 2009:4, 10-11). Transformative learning is a process that is important to individuals and societies in order to:

- Understand and deal more effectively with different worldviews
- Recognize and address social justice issues
- Expand critical consciousness
- Broaden sense of responsibility and
- Improve social competence (Maingot 2007:5).

4.9 Motivation

Motivation forms an important part of music teaching since it determines whether the pupil's musical experience will be positive or not. Robertson et al (2008) regard motivation as one of the biggest challenges teachers face, since it has an

impact on lessons, discipline, stress levels and on pupil results. Success in motivation does not just depend on the student's personality or learning style, but also on how teachers view themselves and their profession (Esping 2000:60).

Madsen (2003:50) explains that what happens to many teachers is that they become frustrated because they do not achieve the results with their students they intended to achieve. This leads to a negative projection upon the pupil. How can the pupil be excited about something the teacher is not?

In the process of trying to be motivating, teachers will find all kinds of students. There are those who do not want to learn unless inspired by great effort. Some children have been taught to love music activities by their parents and others. Certain pupils once had a love for playing an instrument, but somehow experienced a negative environment or maybe a punishing teacher who extinguished it. For these students the desire to learn must be taught or re-taught.

In general most children bring a natural curiosity to their first encounters with formal music study. One of the greatest joys of teachers when working with young pupils is their innocence and naturalness in the teaching situation (Madsen 2003:51).

4.9.1 Defining motivation

Harris and Crozier (2000:27) define motivation as "that which causes a person to act in a certain way". The author also agrees with the definition outlined by Heffner (2004a) in the *Psychology Dictionary (K-P) at AllPsych Online* which describes motivation as "the process that energizes and/or maintains a behaviour". Thus in general terms, motivation "refers to a student's willingness,

need, desire and compulsion to participate in, and be successful in, the learning process” (Bomia et al 1997:1 and Ogle 2006).

The definition of motivation can be divided into two categories:

4.9.1.1 **Intrinsic motivation**

A student can be described as intrinsically motivated when he or she is motivated from within. Intrinsically motivated students actively engage themselves in learning out of curiosity, interest or enjoyment, or in order to achieve their own intellectual and personal goals (Dahlstrom 2001). Dev (1997:13) claims that, “a student who is intrinsically motivated ... will not need any type of reward or incentive to initiate or complete a task. This type of student is more likely to complete the chosen task and be excited by the challenging nature of an activity”.

Thus intrinsic motivation can be defined as “the motivation or desire to do something based on the enjoyment of the behaviour itself rather than relying on or requiring external reinforcement” (Heffner 2004b). Steele (2008a) describes intrinsic motivation as including “involvement in behavioural pattern, thought process, action, activity or reaction for its own sake and without an obvious external incentive for doing so”. A hobby could serve as an example.

4.9.1.2 **Extrinsic motivation**

A student can be described as extrinsically motivated when he or she engages in learning “purely for the sake of attaining a reward or for avoiding some punishment” (Dev 1997:13). Thus extrinsic motivation can be defined as “the desire or push to perform a certain behaviour based on the potential external rewards that may be received as a result” (Heffner 2004c). This category of motivation would include “circumstances, situations, rewards or punishment, both

tangible and intangible that participation in results in an external benefit” (Steele 2008a). Steele states that tangible benefits could include monetary rewards or prizes. Intangible could include things like recognition and praise.

4.9.2 Theories that influence motivation

Painsi and Parncutt (2008) describe implicit self-theories that involve personal attributes such as intelligence and musical ability. There are three implicit self-theories, described below:

4.9.2.1 Entity theories

Entity theories portray personal attributes as relatively fixed. People who hold an entity theory want to demonstrate that they have sufficient musical talent, want praise, but dislike criticism.

4.9.2.2 Incremental theories

Incremental theories portray attributes as relatively malleable. People who hold an incremental theory want to increase their ability and concentrate on cultivating their ability through effort.

These two theories can lead to poor motivation where there is a lack of musical ability. However, it can be a motivation for students and teachers alike to be more focussed and develop new strategies.

4.9.2.3 Social cognitive theories

These theories focus on the stimuli originating within the individuals, in particular their cognitions and affects. Collins et al (2006:138) define the term cognition as “an act or experience of knowing or acquiring knowledge”. The term affect is defined by Collins et al (2006:14) as meaning “influence”. Amongst all the

theories the researcher deems the social cognitive theories to be most effective when working with aspects of expanding musical perception.

4.9.3 Aspects that influence pupils' motivation positively or negatively

There is no doubt that one of the most important contributory factors to pupil motivation is the effectiveness of the curriculum being used (Fraser 2005). Within a musical context this can refer to the choice of repertoire. Should the teacher, for example, follow a specific exam syllabus with the pupil or not?

It is important for teachers to be aware of constant new developments as well as knowing new repertoire in order to motivate students effectively. As Marlais (1997:30) explains, it is always easier to teach well-known pieces. Yet teaching methods and repertoire need to be expanded and teachers need to become knowledgeable about new developments. It is the teacher's responsibility to promote awareness of new music by motivating and inspiring pupils to learn these works. Teachers' excitement will be instilled in their students. If students get excited about work, they consider it play, and both teacher and student will be much happier. The creative/inventive teacher has strived for years to turn work tasks into play. Successful teachers are those who are able to bring about a pleasurable response toward teaching difficult concepts and make the most demanding tasks pleasant. Fraser (2005) and Lau (2007:37) both emphasize that teacher attitudes can have a positive or negative impact on motivation. However, the author finds the description used by Steele (2008b) a particularly useful metaphor when considering aspects that influence pupils' motivation:

Consider motivation illustrated by the engine in your car. Your engine runs on fuel and so does motivation. Like your engine, it can run on different types and different grades of fuel.

The engine is just one part of the whole vehicle, though a significant one, to enable forward movement. Likewise, words and actions are the fuel

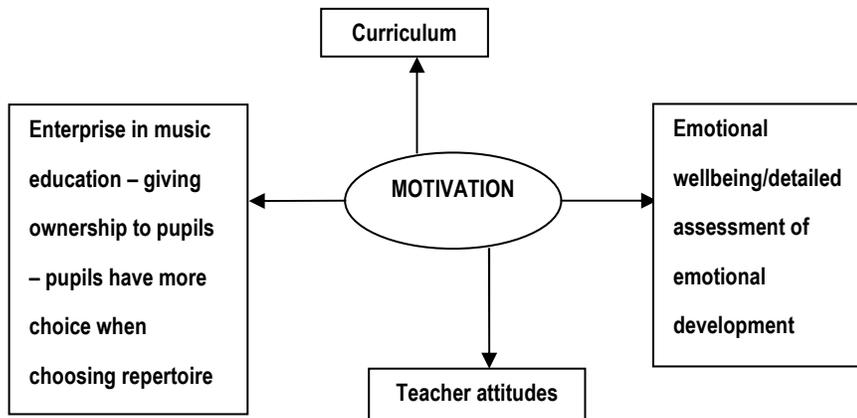
that, when given to the right motivational type engine, can produce change in thought or behaviour.

Teachers praising effort and taking a genuine interest in pupil welfare are more likely to motivate pupils, particularly those with a low self esteem. Praise for exceptional music achievement alone can demotivate a pupil easily. When the teacher interacts with pupils in early music development, assessing their emotional wellbeing and/or development, motivation in later years can be affected positively through students having higher self esteem and determination to complete tasks (Esping 2000:60; Fraser 2005 and Johnson 2005b:171, 177-179).

Madsen (2003:52) is of the opinion that accurate assessment occurs when the teacher fully understands teaching principles and has observed enough student behaviour to have a good idea of what will work in each specific case – or at least has a high probability of working in each case. This observation can be viewed in a very open-ended way using ideas regarding the theoretical framework outlined in the thesis.

Enterprise in music education can have a positive effect upon the level of pupil motivation. This can be achieved when pupils are given the opportunity to have greater choices when choosing repertoire. It will result in more focussed pupils, engaged with their daily practice (Johnson 2005b:176 and Lau 2007:37). The above aspects are demonstrated in the following diagram.

Figure 10: Factors which have a positive or negative impact on pupils' motivation (Fraser 2005).



Esping (2000:59) emphasizes the interaction between teacher and student in successful motivation. She stresses that each party has specific responsibilities. The teacher must convey information in a clear, interesting way so that every student will be inspired to reach his/her potential. The student needs to absorb this information and apply mental and physical energy in order to be successful. There are five aspects that will influence a student's musical achievement:

- The teacher's musical ability
- The quality of the instruction
- The student's intrinsic ability
- The student's willingness to work
- External factors.

It is suggested that teachers greatly influence all five of these aspects between student and teacher (Esping 2000:59).

4.9.4 Addressing the unmotivated student

In order to work successfully with the unmotivated student it is important for the teacher to be aware when the pupil shows signs of poor motivation.

4.9.4.1 **Recognizing poor motivation**

Robertson et al (2008) suggest that by understanding the causes of a lack of motivation the teacher can start to read the signs at an early stage. For instance a chaotic home background or poor parenting/substance abuse can have a devastating effect on pupil motivation (Fraser 2005 and Johnson 2005b:171). Other signs, such as forgetting books, arriving late or not at all and being difficult during the lesson are mentioned by Khazen (2007).

Often an aspect of learned helplessness⁴³ is present where pupils believe that they will never be able to complete tasks, play an instrument or advance in music. Certain traumas associated with learned helplessness can be of such a nature as to literally rewire the brain (Jensen 1998:58 and Johnson 2005b:138).

In addition to these signs the author can also add aspects found in own teaching experience, such as not doing homework/practising, constant excuses, lack of communication with the teacher, general boredom and not being committed to achieving anything.

In order to maintain a healthy level of motivation the teacher can introduce a balance of new and challenging work, together with the revisiting and reinforcing of old and previously prepared work (Harris and Crozier 2000:30; Johnson 2005b:167 and Khazen 2007).

4.9.4.2 **Addressing poor motivation**

When addressing poor motivation, teachers can use the following as a checklist to assist in the motivation task (Esping 2000 60-66; Harris and Crozier 2000:29; Khazen 2007; Lau 2007:36 and Robertson et al 2008).

⁴³ Learned helplessness is a condition that occurs after a period of negative consequences where the person begins to believe they have no control (Heffner 2004d).

- Check your general attitude to the pupil and the manner in which you represent new material. The teacher can ask him/herself if the new material is introduced imaginatively, positively and as part of an ongoing, developing learning process.
- Keep your schedule consistent and be reliable since routine will help students to plan their other activities around their music.
- Make lessons relevant. This may require the teacher to prepare students for a future they or the teacher cannot yet conceive of.
- Identify special interests and enthusiasms in the pupil. It is extremely important as well to 'show' pupils 'how' once you have told them what to do. Sometimes it will require the teacher to play for them.
- The pupil will often work best when there is a specific goal in sight, for example a forthcoming performance. Setting goals for your students forms an important part of motivation. The teacher can inspire them to prepare repertoire for a house concert, school performance, formal concert, eisteddfod and/or exam.

The researcher has observed during the teaching of often negative pupils that realistic goal setting and an understanding of where the student is at are of utmost importance for a positive learning outcome. This is also suggested by Johnson (2005b:165, 173 and 175). Creativity in viewing concepts and encouragement as well as approval over a long period of time (even if things do not go well at first) does improve motivation. Therefore the researcher does not agree with the observation of Madsen (2003:52) that if a child does not learn early in life to work hard and long for specific goals, he or she is not likely to change with age. More flexible

parameters are needed in this regard and are illustrated by so-called 'late bloomers'.

It is also important for teachers to set a good example for their students. Since teachers are often role models their actions will influence the student's attitude toward the work he/she is assigned to do.

- Create a positive environment. A well organized teaching milieu will keep pupils on the task and focussed.
- Make your pupils feel safe. Pupils will often be motivated if they feel secure in the environment being taught.
- Esping (2000:64-65) and Harris and Crozier (2000:31) suggest that from time to time, instead of the teacher setting the shape and content of the lesson, transfer the responsibility to the pupil. Begin the lesson by asking what the student would like to do. The teacher will find that this may have a very positive effect on both strongly motivated and less motivated pupils. It will cause pupils to think about their work from a different and useful angle. Given this choice pupils might arrive with a favourite piece that is not part of the curriculum presently studied.
- Praise and reward pupils. Pupils need a range of learning experiences and need praise and rewards. In planning praise and rewards try to use strategies that will let the pupil see the improvement, no matter how small.

Jensen (1998:65) is of the opinion that external rewards are much less of a motivator than intrinsic rewards for pupils. The behaviourists made a flawed assumption that learning is primarily dependent on a reward (Jensen 1998:63). The author agrees to a certain extent with Jensen in that not all rewards relating to motivation can be achieved from external

sources, but has found that distributing stickers when pupils have played well especially motivates the very young. They seem to collect them assiduously, keeping them in a special place.

In addition to the above list, Khazen (2007) regards enjoyment as an important aspect of motivation. If the teacher is enthusiastic the atmosphere in the lesson will be calm and that makes the lesson more enjoyable. The author does not fully agree here, because at times I have found that there is a dual responsibility from both teacher and student required in order to make the lesson enjoyable.

Khazen (2007) regards fear as another way to motivate a pupil to practise; for instance, fear of failing an exam or performance in public or disappointment of the parent or teacher. The author is of the opinion here that fear as motivator should only be used in extreme cases, but finds it very negative, violating the pupil emotionally. It should be regarded as mostly part of older methods of motivation⁴⁴. Music teaching is about 'relationship' and 'trust'. These qualities will not be achieved through constantly using fear as a method of motivation. Interesting viewpoints are held by Steele (2008a) where he describes negative and positive motivational forces. These could include desire, fear, influence and need. Depending on how fear and influence are framed, they could be either negative or positive forces that serve as motivators. Applied in a music context, the author would suggest that if the possibility of bodily injury such as muscle injuries created through bad posture (negative force) is explained by the teacher, instilling appropriate fear of such injury, the student will automatically try to rectify this by a better posture (positive force). The author finds this a more constructive use of the concept of fear in the teaching process.

⁴⁴ Older methods of motivation here refer to those used during pre-modern and modern times.

4.9.4.3 **Limitation of activities at an early age**

The researcher has observed in the South African environment (relating geographically to the Pretoria area) that young children attempt numerous activities at once without mastering at least one or two properly. This leads to a great deal of pressure in order to perform or please the parent or teacher. As a result, the child does not ultimately enjoy the attempted activities, because there is often little room allowed for mistakes.

Children are often raised with the idea that all attempts at performance of any piece of music must be near perfect otherwise it is not acceptable or good enough. In fact the process of learning, experiencing music and the satisfaction gained from engaging with the music itself may be more beneficial for the student than the ultimate product.

4.9.5 **The validity of motivation in teaching and learning music in the 21st century**

Keeping up to date in the 21st century can be a challenge for most teachers who were brought up with 'low tech' materials.

Teachers should be aware that pupils today are in general technologically sophisticated: they manage the playlists on their iPods, download music regularly, and view bands and soloists on MySpace and YouTube. If teachers can integrate good quality technology into their teaching it may motivate pupils to play and perform more and give an added dimension to lessons. Ideas for this can include using backing/duet tracks, recording pupils playing and the use of midi files with a digital piano (Johnson 2005b:187 and Lau 2007:37).

“Learning styles differ so don’t force pupils out of their comfort zone – by all means stretch your pupils but don’t scare them!” (Robertson et al 2008).

Chapter 5

BRAIN PROFILES AND PERSONALITY TYPES

The human brain is a meaning-maker and meaning seeker. The more important the meaning, the greater the attention one must pay in order to influence the content of the meaning (Jensen 2007).

5.1 Introduction

Thanks to the human brain, literature regarding the brain and brain profiles has developed, indicating that different individuals have strengths and weaknesses in terms of their preferred functioning. Brain profiles therefore link with students' and teachers' personality types, although the two aspects of human functioning can be clearly distinguished, as will be discussed further in this chapter.

The left and right hemispheres of the human brain process information differently, as displayed in figure 11 (Outlook School Division 2001).

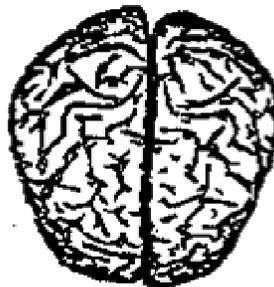
Figure 11: The different processes of the human brain

LEFT SIDE:

Speech
Analysis
Time
Sequence

Recognizes:

Words
Letters
Numbers



RIGHT SIDE:

Creativity
Patterns
Spatial
Context

Recognizes:

Faces
Places
Objects

Most people have a dominant hemisphere or largely operate in one of the two hemispheres. This dominance affects personality, abilities and learning style. Teachers for instance should design music lessons in such a way that they include activities that are directed at both hemispheres, deal with concepts both verbally and visually and discuss music concepts both logically and intuitively (Outlook School Division 2001).

Figure 12 captures how the two hemispheres of the human brain function differently (Outlook School Division 2001).

Figure 12: Left and right hemisphere functions of the brain

LEFT HEMISPHERE FUNCTIONS	RIGHT HEMISPHERE FUNCTIONS
Connected to right side of the body	Connected to left side of the body
Integrates many inputs at once	Deals with inputs one at a time
Processes information in a linear fashion	Processes information more diffusely and simultaneously
Deals with time	Deals with space
Responsible for verbal expression	Responsible for gestures, facial movements and body language
Responsible for arithmetic operations	Responsible for relational and mathematical operations
Specializes in recognizing words and numbers	Specializes in recognizing places, faces, objects, and music
Does logical and analytical thinking	Does intuitive and holistic thinking
The seat of reason	The seat of passion and dreams
Crucial side for wordsmiths and engineers	Crucial side for artists, craftspeople, and musicians

The researcher agrees that formal education systems still tend to emphasize a rather narrow range of brain capabilities (Holistic Teaching and Learning 2006). The reason for supporting Ned Herrmann’s whole-brain model is because of the scope it offers for viewing students’ brain profiles holistically, yet being aware of the individual qualities of the four quadrants. These possibilities offer an open-

endedness in teaching pupils creatively and they give the teacher scope, in teaching, to function with flexibility.

In Ned Herrmann's whole-brain model, where the brain is seen in four quadrants (see figure 9 under 4.6.1), each quadrant displays distinctive strengths. These four quadrants are not a literal map of the anatomy of the brain, but do reflect the ways in which different physical locations inside the skull specialize in different ways of processing information. For example, in most people the areas that handle speech and verbal logic functions do lie behind the left ear. Hippocrates already noticed that when soldiers were brought to him who had been struck in the left side of the head, they often lost the power of speech, but the same wound on the right side did not produce this result (Gross 2008:1).

In order to better understand pupils, it is necessary for teachers to be aware of these areas of strength in their brains as well as their personality types. This can lead to more effective perception and teaching strategies. Jensen (1996b:6) emphasizes the importance of effective teaching in the following statement: "When teachers design learning around basic principles of how the brain learns, motivation and meaning increase for all learners".

5.2 Overview of different areas of the human brain relevant to learning

The author deems it necessary for the purpose of the study to discuss the general areas of the brain briefly and thereafter focus more on the parts relevant to learning.

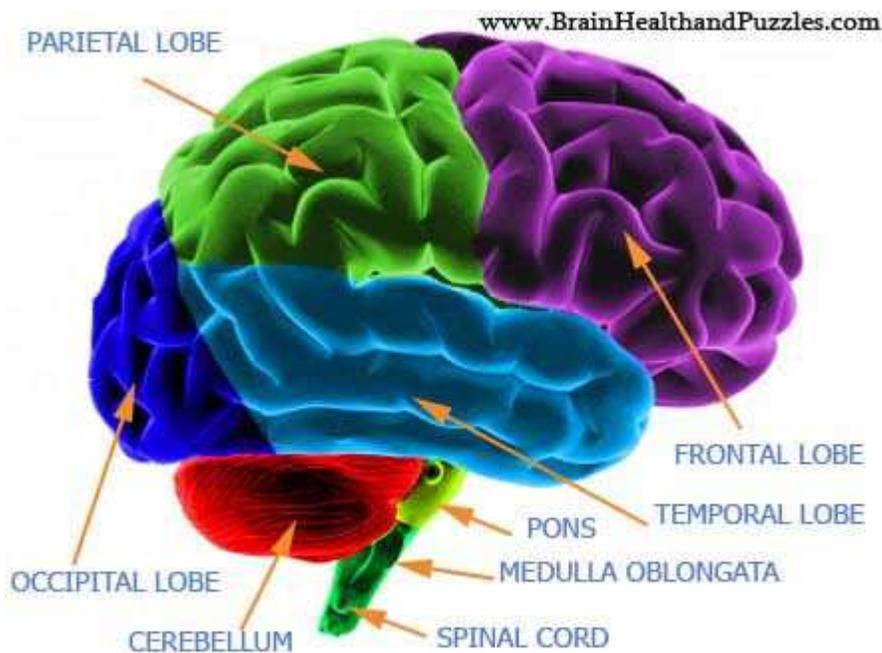
5.2.1 Cerebrum

The cerebrum (technically referred to as the Telencephalon) is divided into two hemispheres (left and right), each consisting of four lobes (frontal, parietal, occipital and temporal) (Brain Atlas 2006). The two hemispheres interact very

closely via the corpus callosum and the information exchange between the two hemispheres is maintained in as short a time as ten milliseconds (Altenmüller et al 2000:100).

The cerebrum is composed of a number of sub-regions as seen in figure 13 below (Looi 2008).

Figure 13: The sub-regions of the cerebrum



The cerebrum is the largest part of the brain and contains white⁴⁵ and gray⁴⁶ matter. In humans it surrounds older parts of the brain. Limbic, olfactory and motor systems project fibres from sub cortical (deeper) areas of the cerebrum to parts of the brainstem (Telencephalon 2007).

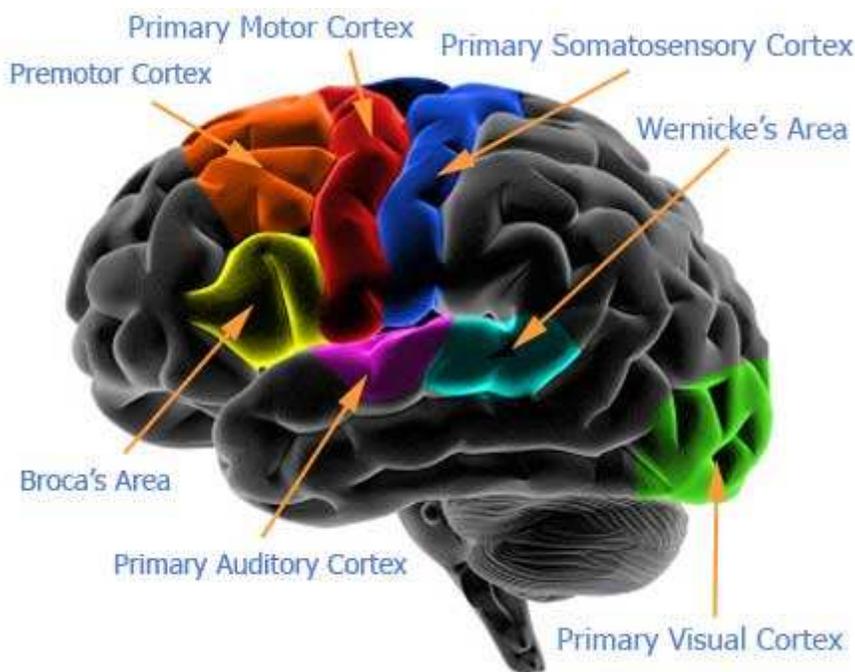
⁴⁵ A portion of the nervous system composed of nerve fibers enclosed in myelin sheaths which contribute a white coloration to otherwise grayish structures. The inner portion of the cerebrum is composed of white matter (Corsini 2002:1070).

⁴⁶ Gray matter is cell bodies of neural tissue. It occurs in masses of cell bodies in the spinal cord. The outer layer of the cerebrum – the cerebral cortex and areas deep within the brain – the basal ganglia, are made up of gray matter (Corsini 2002:423).

5.2.2 Cortices in the brain

The cortexes are the outermost layer of the brain, 2-4 mm thick and playing a central role in many complex brain functions including memory, attention, perceptual awareness, thinking, language and consciousness (Cerebral cortex 2007; Altenmüller et al 2000:99). Figure 14 indicates the different cortexes within the brain (Looi 2008).

Figure 14: The different cortexes within the brain



www.BrainHealthandPuzzles.com

The outer covering of the cerebral hemispheres is known as the cerebral cortex. This is the most evolved portion of the brain, and it regulates the most complex behaviour. Each cerebral hemisphere is divided into four lobes. The occipital lobe of the cortex, located at the back of the head, receives and processes visual information. The temporal lobe, located roughly behind the temples, is important to the sense of smell. The parietal lobe, which is on top of the temporal and occipital lobes, receives sensory information, in the sensory projection areas

from all over the body. This lobe figures in spatial abilities. The ability to comprehend language is concentrated in two areas in the parietal and temporal lobes (Pearson Education 2000).

The frontal lobe is part of the cerebral cortex responsible for voluntary movement and attention as well as goal orientated behaviour. These four lobes are both physically and functionally distinct. Each lobe contains areas for specific motor sensory function as well as association areas which process a variety of information (Pearson Education 2000).

Jensen (2000:12) notes that familiar music selections activate Broca's area (located in the left hemisphere), suggesting that all familiar sounds, not just word sounds, may be processed in this area. Through his research Jensen explains the following interesting findings:

- Rhythmic patterns activate Broca's area and the cerebellum
- Harmony activates the left side of the brain, more than the right, as well as the temporal cortex
- Timbre activates the right hemisphere. This is the only musical element that does
- Pitch activates an area of the left back of the brain called the precuneus. Another area involved may be the right auditory cortex
- Melodic patterns activate both sides of the brain (Jensen 2000:12).

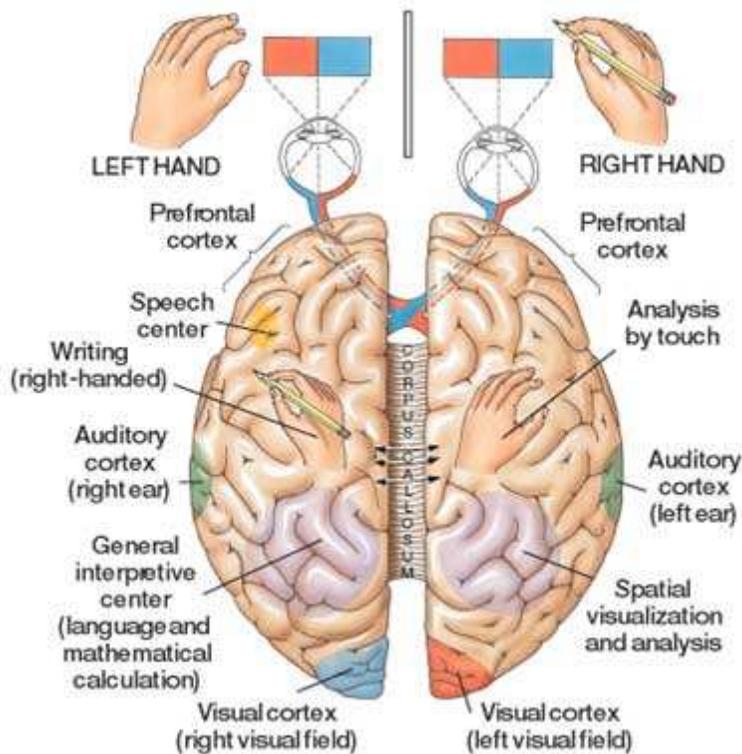
Jensen concludes that these findings suggest that music is not exclusively a 'right-brained' activity.

As mentioned earlier, the two hemispheres of the cerebral cortex are linked by the corpus callosum, through which they communicate and coordinate. The right hemisphere of the cortex excels at nonverbal and spatial tasks, whereas the left hemisphere is usually more dominant in verbal tasks such as speaking and

writing. The right hemisphere controls the left side of the body and the left hemisphere controls the right side (Pearson Education 2000).

Figure 15 illustrates the cerebral hemispheres (Pearson Education 2000).

Figure 15: The cerebral hemispheres



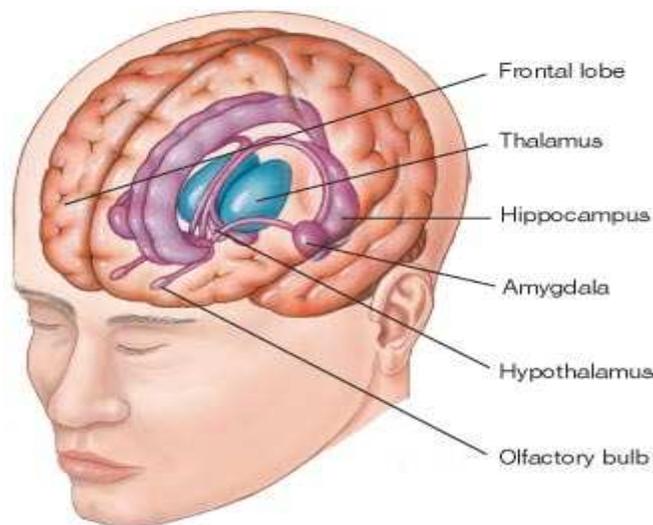
5.2.3 Limbic system

The limbic system is not a structure, but a series of nerve pathways incorporating structures deep within the temporal lobes. Forming connections with the cerebral cortex and other areas of the brain, the limbic system is involved in the control and expression of mood and emotion (Brain Atlas 2006; Bruckner 2005:6; Limbic System 2007). Thus the limbic cortex forms a broad circular strip/band stretching from the brainstem to the cerebellum, interacting with the four lobes of the cerebrum (Jordaan and Jordaan 1998:175). The limbic system also includes

many different cortical and sub-cortical brain structures interacting with an extensive list of brain regions (Limbic System 2007). Some of these regions include the hippocampus and amygdala, as well as other structures. It appears to play a central role in times of stress (Pearson Education 2000).

Figure 16 shows the limbic system (Pearson Education 2000).

Figure 16: The limbic system



5.2.4 The internal structures of the brain

Following are short descriptions of the internal structures of the brain related to music, perception, teaching and learning. The limbic system will not be mentioned here as it was discussed under 5.2.3.

5.2.4.1 The Hindbrain

The Hindbrain or reptilian brain is the oldest part of the human brain, a piece of brain anatomy that is shared with reptiles, and is the most primitive. It is in charge of primal instincts and most basic functions.

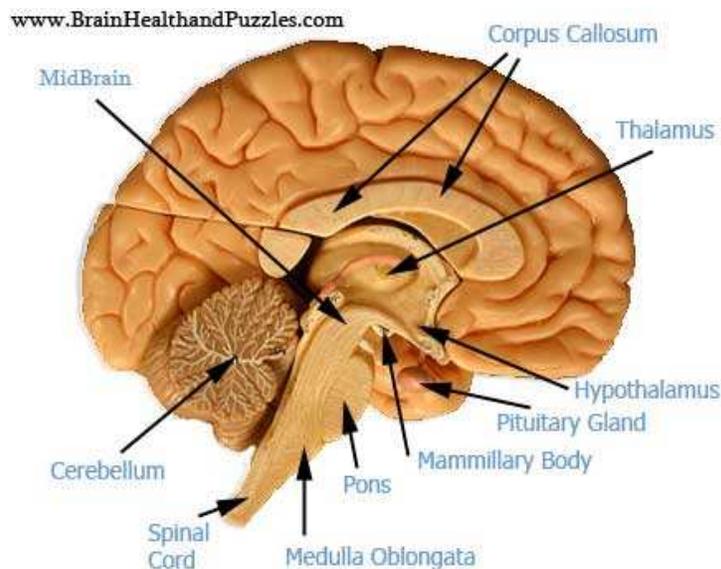
The two areas grouped under the hindbrain relating to music are the pons and the cerebellum. The pons relays sensory information to/from the brain and is also involved in controlling autonomic body functions. The cerebellum on the other hand mostly deals with regulating and coordinating movement, posture and balance (Looi 2008).

5.2.4.2 The Neocortex

The neocortex is also known as the rational brain. It is a greatly advanced part of the brain and it is in this area that brain power is found to develop language, abstract thoughts, consciousness and imagination. The neocortex is divided into the two hemispheres as fully discussed in the introduction to this chapter. It is this area of the brain that contains the four lobes and the corpus callosum discussed under 5.2.2. Broca's area is the part of the cortex that controls speech, language recognition and facial nerves (Looi 2008).

In figure 17 the various internal structures of the brain are shown (Looi 2008).

Figure 17: The internal structures of the brain



5.3 Whole-brain learning and teaching

Whole-brain learning uses techniques that integrate the synthetic and imaginative brain skills with the analytical and language skills. Simple strategies can make better use of the whole-brain and can dramatically improve learning (Holistic Teaching and Learning 2006). Gross (2008:2) comments that understanding the four quadrants of the brain and whole-brain learning are important for the following two reasons:

- The most important challenges teachers and pupils face require the use of capabilities from all four ways of thinking.
- The mental health of human beings in general depends on using the whole brain.

Brain-based learning is the purposeful engagement of strategies based on neuroscience. It is the application of a meaningful group of principles that represent teachers' understanding of how the brain works in the context of education (Jensen 2007).

Both emotional and body states influence attention, memory, learning, meaning and behaviour. These states become more stable over time and will resist change. For example, the longer one is angry or depressed, the more comfortable one becomes with that state. This has profound implications for the social and behavioural roles of education (Jensen 2007).

Brain-based learning is not a magic term that can solve all of education's problems. Anyone who represents that to others is misleading them. There is not yet a "one size fits all" brain-based programme, model or package for schools or individual teachers (Jensen 2007).

5.4 Out-of-the-box thinking and teaching

Out-of-the-box thinking and teaching suggest that teachers should be aware in general of certain unfixed ways in teaching music students. This is necessary because no two students are alike in brain profiles. Other aspects that need to be taken into consideration are differences in learning styles and Multiple Intelligences as discussed in other chapters of this thesis. Apart from these, the student will perceive explained information in his/her own way and it is important that teachers are clear in recognizing that the student perceived in the way the teacher meant.

There must thus be certain flexibility allowed from the teachers' side towards students. As discussed above (Coil 2000:10), flexibility means allowing for differences in such things as:

- Learning styles
- Learning modalities
- Strengths/weaknesses in Multiple Intelligences
- Pace of learning and lesson presentation
- Time needed to complete a task
- Student interests
- Ability levels.

This list is by no means complete, but gives suggestions for aspects teachers need to be sensitive to in the teaching process.

A brain compatible teacher is one who understands holistic teaching and uses strategies in a purposeful way: an educator who understands the reasoning behind his/her teaching. Such a teacher also stays constantly updated through continuous professional development.

Evidence suggests that stress is a significant factor in creativity, memory, behaviour and learning. Teachers who effectively manage stress factors

(purposefully decrease or increase stress) in class are likely to experience a positive classroom environment. There are many ways to decrease stress in the classroom, such as integrating stretching exercises and teaching coping skills (Jensen 2007).

5.5 Personality types

Whatever the circumstances of your life, the understanding of type can make your perceptions clearer, your judgments sounder, and your life closer to your heart's desire (Briggs Myer 2007a).

In order to approach pupils holistically, it is necessary to study personality types and all the aspects and terminology that this concept entails.

5.5.1 Understanding the terminology

In psychology, personality is a description of consistent emotions, thought and behaviour patterns in a person (Personality 2007). The term personality type refers to the psychological classification of different types of people. Personality types are not the same as personality traits⁴⁷, which come in different levels or degrees. According to the type theories, there are two types of people, introverts and extraverts⁴⁸. Trait theories, introversion and extraversion are part of a continuous dimension, with many people in the middle. Trait theorists often use the term 'type' to describe someone who scores exceptionally high or low on a particular personality trait, but as described above there is a small distinction between the terms type and trait (Personality_type 2007).

Understanding temperament is also of importance at this point. Temperament is the innate aspect of an individual's personality, such as introversion or

⁴⁷ Traits refer here to a characteristic feature, attribute, mannerism or quality part of a personality type (Collins et al 2006:789).

⁴⁸ Term and spelling coined by Jung; the variant 'extrovert' is not preferred (Analytical_psychology 2007; Roper 2007).

extraversion. It is defined as that part of the personality which is genetically based. Along with character, and those aspects acquired through learning, the two together are said to constitute personality (Temperament 2007).

The idea of psychological types originated in the theoretical work of Carl Jung⁴⁹ (Personality_type 2007). In order to study the personality types as formulated by Jung it is also important to be aware of the work of his contemporary, Sigmund Freud⁵⁰, although these leading figures are not discussed fully within the framework of this thesis.

5.5.2 Carl Jung's eight personality types

When attitudes and functions are combined, eight personality types can be distinguished on the basis of the dominant attitude and function. Jung insisted that he did not want to categorize people rigidly with his typology. Rather, the typology should be viewed as a framework according to which individual psyches can be distinguished from one another, based on their preference for channelling psychic energy. The eight personality types are described as follows (Meyer et al 2003 112-113):

- Extravert-thinking: This type of person lives to fixed, objective rules and subjective feelings are repressed.
- Extravert-feeling: A person in this category is emotionally highly labile and emotions fluctuate as situations change.
- Extravert-sensing: The individual here is characteristically highly pragmatic and realistic and accepts life as it is without thinking too much about it.

⁴⁹ Carl Gustav Jung (1875-1961) was a Swiss psychiatrist, influential thinker, and founder of analytical psychology (Carl_Jung 2007).

⁵⁰ Sigmund Freud (1856–1939) was a Jewish-Austrian neurologist and psychiatrist who co-founded the psychoanalytic school of psychology (Freud 2007).

- Extravert-intuitive: Such people are always looking for something new and find it difficult to sustain anything – ideas, jobs or relationships.
- Introvert-thinking: People with this type of personality are highly intellectual and care little about their day-to-day existence.
- Introvert-feeling: These personality types are intensely emotional and hypersensitive.
- Introvert-sensing: The individual in this grouping takes life as it comes without displaying great social involvement.
- Introvert-intuitive: This personality type includes eccentric daydreamers who generate new ideas based on ‘visions’. They tend to be highly impractical and asocial, and other people often do not understand them easily.

According to Jung, a personality type can be identified only when the relative strength of psychic attitudes and functions have been ascertained through long-term analysis and therapy. He also points out that attempts to change an individual’s personality type can lead to neurosis (Meyer et al 2003:113).

5.5.3 The importance of personality type towards understanding transformative learning

Transformative learning involves the process of reflection in how choices and identifications are made in order to understand what assumptions are involved in held beliefs (McWhinney and Markos 2003:21). Relating to personality types Cranton (2009) asserts that personality preference serve as a “filter/lens” for teachers in how they view themselves, others and the world. The Jungian approach to personality types is held by Cranton (2009) in that she views Jung as a constructivist in philosophy, which harmonizes with transformative learning theory. This belief is supported by McWhinney and Markos 2003:20).

Jung's theory of personality suggests that the whole self is developed – moving from a general, collective psychology to a more individual approach. This process is called individuation and is a life long, constant process of finding one's self (Cranton 2009).

Teachers and students can be affected by transformative learning in aspects such as brain quadrant dominance and approaches that differ from abstract theorization to concrete literal thinking. These approaches will have an influence on students' ability to learn, whether both the student and teacher are/are not introverted or extraverted in personality type (Mezirow 2000:191).

The educator's role in fostering transformative learning involves helping bring the consequences of taken-for-granted assumptions into critical awareness so that appropriate action can be taken (Mezirow 2000:195). Mezirow (2000:197) suggests three distinct, yet interrelated roles for educators:

- Educators have a responsibility to assist learners in becoming aware of their psychological preferences.
- Educators have to play a role in fostering critical questioning of psychological habits of mind.
- Psychological preferences influence the way reconstruction of frames of reference is reached. In this regard educators need to help create learning experiences that involve learners of different predispositions in that process.

Helping students become fully aware of their personality types assists them in seeing their strengths, their blind spots and their prejudices against others different than themselves (Mezirow 2000:196).

5.6 Myers-Briggs Type Indicator

In developing the Myers-Briggs Type Indicator (MBTI) personality inventory, during the 1940s, the aim of Isabel Briggs Myer and her mother, Katharine Briggs, was to make the theory of psychological types, introduced by Carl Jung in the 1920s, accessible to individuals and groups. Most of the original research was done in the 1940s and 1950s. The goal of knowing about personality types is to understand and appreciate differences between people (in the context of the thesis this means teachers and pupils). There is a basic focus on how different individuals prefer and use their perception⁵¹ and judgement⁵² (Briggs Myer 2007b). All the types are equal; there is no best type. The MBTI instrument sorts for preferences and does not measure trait, ability or character.

According to the MBTI, types and traits are both inborn. Traits can be improved akin to skills, whereas types, if supported by a healthy environment, naturally differentiate over time. Thus the MBTI is a personality test designed to assist a person in identifying some significant personal preferences (Myers-Briggs_Type_Indicator 2007).

Roper (2007) states that the MBTI is more often used in industrial psychology settings and is regarded as a more popular version of the original Jung personality types. He notes that the Jung version of the personality types is more used within clinical psychological testing and is thus regarded as a more scientific approach to personality styles. However in educational settings, the author regards it as beneficial for teachers to be aware of MBTI basics in order to approach the teaching and learning process holistically. This was determined after a substantial amount of literature was reviewed.

⁵¹ Perception involves all the ways of becoming aware of things, people, happenings, or ideas (Briggs Myer 2007a).

⁵² Judgement involves all the ways of coming to conclusions about what has been perceived (Briggs Myer 2007a).

5.6.1 The preferences

The terms Introvert (I) and Extravert (E) are sometimes referred to as attitudes⁵³. An introvert is more interested in the inner world of ideas and draws energy from being alone and having time to think. The extravert prefers the outer world of people and things and uses his/her energy to draw ideas through talking and exchanging views with other people (Myers-Briggs_Type_Indicator 2007 and Roper 2007).

Sensing (S) and Intuition (N) are the perceiving functions. Jung called them the irrational functions, since a person does not necessarily have control over receiving data, but only how to process it once they have received it. Sensing people tend to focus on the present and on concrete information gained from their senses. Intuitive people tend to focus on the future, with a view toward patterns and possibilities. These people prefer to receive data from the subconscious, and see relationships via insights (Myers-Briggs_Type_Indicator 2007 and Saadé et al 2006:543).

Thinking (T) and Feeling (F) are the decision making (judging) functions. They both strive to make rational choices, using the data received from their perceiving functions. Thinking people tend to base their decisions on logic (“true or false” connections) and on objective analysis of cause and effect. Feeling people tend to base their decisions primarily on values and on subjective evaluation of people centred concerns. Feeling people use “more or less, better-worse” evaluations. It could be said that thinkers decide with their heads, while feelers decide with their hearts (Myers-Briggs_Type_Indicator 2007).

⁵³ Attitude is a hypothetical construct that represents an individual’s like or dislike for an item. Attitudes are positive, negative or neutral views of an “attitude object”: i.e. a person, behaviour or event. People can also be “ambivalent” towards a target, meaning that they simultaneously possess a positive and a negative bias toward the attitude in question (Attitude_%psychology%29 2007).

Judging (J) and Perceiving (P) record how personalities deal with these two dichotomies in dealing with the external world. J types tend to like a planned and organized approach to life and prefer to have things settled. P types tend to like a flexible and spontaneous approach and prefer to keep their options open⁵⁴ (Myers-Briggs_Type_Indicator 2007).

5.6.2 Type dynamics

The interaction of two, three, or four preferences is known as type dynamics, and when dealing with a four-preference combination it is called a 'type'. In total, there are sixteen unique types.

In each type, all four of the cognitive or mental functions, which are sensing, intuition, thinking and feeling, are present and arranged in a different order. The type acronym is used as a quick way to figure out this order, which is slightly different in introverts and extraverts. An important point to remember is that the first and last letter of the type are used as guides to figure out the order of the middle two letters, which are the main priority (Myers-Briggs_Type_Indicator 2007).

It is not the purpose of this thesis to discuss at length the deeper interactions of these cognitive or mental functions, since it is rather awareness of these various aspects of personality that the author is aiming to convey.

Following is an indication of the 'type table' to show how the MBTI often illustrates the various combinations.

⁵⁴ The terminology may be misleading for some – the term “judging” does not necessarily imply “judgmental”, and “perceiving” does not necessarily imply “perceptive” in the usual sense of the word (Myers-Briggs_Type_Indicator 2007).

Figure 18: The sixteen personality types of the MBTI instrument (Myers-Briggs_Type_Indicator 2007).

ISTJ	ISFJ	INFJ	INTJ
ISTP	ISFP	INFP	INTP
ESTP	ESFP	ENFP	ENTP
ESTJ	ESFJ	ENFJ	ENTJ

5.7 Personality and temperament

Although the author briefly discussed the terms personality and temperament in the section ‘understanding the terminology’, this section will look more closely at these terms and the theorists that are commonly associated with them.

Personality psychology studies enduring psychological patterns of behaviour, thought and emotion, commonly called an individual’s personality. Theories of personality vary between different psychological schools. Trait theories attempt to break personality down into a number of traits, by use of factor analysis⁵⁵. The number of traits varies between theories (Personality psychology 2009). Amongst the best known essential trait approaches is that of Hans Eysenck⁵⁶, introduced by Charles Spearman, which had three dimensions with possible opposites:

- Extraversion – introversion
- Emotional stability – neuroticism

⁵⁵ Factor analysis is a statistical data reduction technique used to explain variability among observed random variables in terms of fewer unobserved random variables called factors. Factor analysis originated in psychometrics, and is used in behavioural sciences, social sciences, marketing, product management and other applied sciences that deal with large quantities of data (Factor_analysis 2009).

⁵⁶ Eysenck (1916-1997) was a German behavioural psychologist interested in the study of temperament, intelligence and personality (Boeree 2006; Eysenck 2008).

- Being in contact with reality – psychoticism (Eysenck 2008).

Sir Francis Galton was the first scientist to recognize the lexical hypothesis⁵⁷. In 1936, Gordon Allport and H.S⁵⁸. Odbert put this hypothesis into practice (Allport and Odbert 1936:211). Raymond Cattell obtained the Allport-Odbert list in the 1940s, eliminated synonyms and with further research identified 35 major clusters of personality traits which he referred to as the “personality sphere” (Big_Five_personality_traits 2009). Finally he proposed a theory of sixteen personality factors (Saadé et al 2006:542). However, the theory that has most empirical evidence behind it today may be the ‘Big Five’ personality traits⁵⁹, proposed by Lewis Goldberg (1981:142) and subsequently supported by many others.

The aspects that separate the five-factor model of personality from all others is that it is not based on the theory of any one particular psychologist, but rather on language, the natural system that people use to communicate their understanding of one another. The Big Five Factors and their seven constituent traits can be summarized as follows (Big_Five_personality_traits 2009; Boeree 2006):

- Openness to experience: appreciation for art, emotion, adventure, imagination, curiosity and variety of experience.
- Conscientiousness: tendency to show self-discipline, act dutifully, aim for achievement and plan rather than behave spontaneously.

⁵⁷ This is the idea that the most salient and socially relevant personality differences in people’s lives will eventually become encoded into language (Big_Five_personality_traits 2009).

⁵⁸ The author made every attempt possible through web and database searches to find the first name of this author, but it could not be retrieved.

⁵⁹ These traits are five broad dimensions of personality developed through rational and statistical analysis of words related to personality. The model was first mentioned publicly in 1933 by Thunderstone in his presidential address to the American Psychological Association (Big_Five_personality_traits 2009).

- Extraversion: energy, positive emotions and the tendency to seek stimulation and the company of others, thus being adventurous, assertive, frank, sociable and talkative.
- Agreeableness: tendency to be compassionate and cooperative rather than suspicious and antagonistic towards others, thus being altruistic, gentle, kind, sympathetic and warm.
- Neuroticism: tendency to experience unpleasant emotions easily, such as anger, anxiety, depression or vulnerability; sometimes called emotional instability.
- Introversion: being quiet, reserved, shy and unsociable.
- Emotional Stability: being calm, relaxed and stable.

Boeree (2006) defines temperament as that aspect of personality that is genetically based, inborn, there from birth or even before. That does not mean, however, that a temperament theory states that teachers and pupils do not also have aspects of personality that are learned.

Eysenck suggested two main personality factors. The first factor was the tendency to experience negative emotions, referred to by him as Neuroticism (N). The second factor was the tendency to enjoy positive events, called Extraversion (E). It is common practice in personality psychology to refer to the dimensions by the first letters N and E. N and E provide a two-dimensional space to describe individual differences in behaviour. Eysenck noted how these two dimensions were similar to the four personality types/temperaments⁶⁰ first proposed by the Greek physician Hippocrates (Eysenck 2008).

- High N and High E = Choleric type
- High N and Low E = Melancholic type
- Low N and High E = Sanguine type
- Low N and Low E = Phlegmatic type.

⁶⁰ During research, it was found that these two terms are used interchangeably, but for the purpose of the study the author prefers to use the term 'temperament' in order to be consistent.

The major strength of Eysenck's model was to provide detailed theory of the causes of personality. Eysenck proposed that extraversion was caused by variability in cortical arousal – introverts are characterized by higher levels of activity than extraverts and so are chronically more cortically aroused than extraverts. The effects on behaviour are that introverts seek lower levels of stimulation whereas extraverts seek to heighten their arousal to a more optimal level by increased activity, social engagement and other stimulation-seeking behaviours. The third dimension, psychoticism, was added to the model in the late 1970s (Eysenck 2008).

5.8 Temperament and its subdivisions explained

The terminologies used to describe temperaments differ, but there are a number of resemblances between temperament types.

The following explanation is by no means an in depth study of temperaments, but aims to assist the teacher to be aware of these different types when teaching pupils.

Boeree (2006) explains the four temperaments as follows:

- Choleric: The Choleric temperament is characterized by a quick, hot temper, often accompanied by an aggressive nature.
- Melancholic: The Melancholic temperament tends to be sad, even depressed, and takes a pessimistic view of the world.
- Sanguine: The Sanguine temperament is cheerful and optimistic, pleasant to be with and comfortable with his or her work.
- Phlegmatic: The Phlegmatic temperament is characterized by a slowness, laziness and at times dullness.

Rudolf Steiner⁶¹, in his lectures on education at the beginning of the last century, brought his own approach to the four temperaments. He emphasized their importance in education, as this is a time when the child is strongly affected by his or her nature in this respect. A person's temperament may change, especially in the pre-puberty years, and often diminishes in importance as the personality becomes more developed after puberty. In any case, the temperament is not exclusive; most people combine aspects of all of them. One or two may dominate, however, or be prominent by their absence. In addition, for each temperament Steiner pointed out that there are less and more mature forms: the sullen, self-absorbed melancholic can mature to the sympathetic helper and/or the deep thinker. A person may transform his or her own temperament, as well, either by becoming more mature in what is naturally given or by metamorphosing into a different temperament (Temperament 2007).

5.9 Role dynamics

During practical teaching the author has experienced the role dynamics between teacher and pupil as a very real and valid aspect. This section of the thesis will focus on these roles played by teachers and pupils respectively, because knowledge thereof can assist the teacher to adapt more easily to a role that complements that of his/her student in order to obtain a more successful lesson outcome. During the course of the sections to follow the author will also focus on Dr Meredith Belbin's⁶² Team Role Theory.

Belbin pointed out that team roles are not personality types; he regards them as 'clusters of characteristics', of which psychological preference is but one

⁶¹ Rudolf Steiner (1861-1925) was an Austrian philosopher, literary scholar, educator, artist, playwright, social thinker, and esotericist. Steiner advocated a form of ethical individualism, to which he later brought a more explicitly spiritual component. He derived his epistemology from Johann Wolfgang Goethe's world view, where thinking is no more and no less an organ of perception than the eye or ear. Just as the eye perceives colours and the ear sounds, so thinking perceives ideas (Rudolph_Steiner 2007).

⁶² Meredith Belbin is a British researcher and management theorist, best known for his work on management teams (Meredith_Belbin 2007).

dimension (Meredith_Belbin 2007). The value of the Belbin team-role theory lies in enabling an individual to benefit from self-knowledge and to adjust according to the demands being made by external situations (Belbin 2007).

Blatner (2006) refers to the term 'role dynamics' as synonymous with the systematic development of role theory. He describes the influence of Dr Jacob Moreno to be of profound significance to his approach regarding role dynamics. A number of other social psychologists are also listed as being involved in the pioneering of role theory. They include Ackerman, Biddle, Cooley, Linton, Newcomb, Parsons and Sarbin (Blatner 2006).

The basic 'role dynamic theory' comprises the following main aspects of interest:

- The mind works on two levels: There is the pluralistic dimension; the way the mind may be (in part) understood as an aggregate of a multiplicity of roles (parts, sub-selves, ego states, sub-personalities, complexes). The other level, the 'meta-role', modulates which roles are played when and how - this is the unifying function.
- A useful approach to education or therapy involves cultivating the skills and identity of the meta-role, and making this role and its function explicitly conscious (Blatner 2006).

5.10 Understanding the influences of brain profiles and personality types on teaching music in the 21st century

It is of importance to understand, within the context of this chapter, that the human being is an interlinked and intertwined entity; what Jensen describes a "system of systems" (Jensen 2000:18). There is no single system in the human body. Mind, body, personality and emotions all play a role in the success of other systems.

The emotional system (personal skills, aesthetic appreciation) impacts the cognitive system (visual-spatial, creative), which impacts the perceptual-motor system (sensory acuity, timing). This last mentioned system impacts the stress response system (immune response, autonomic nervous system) and also has an influence on memory status (attention, concentration) (Jensen 2000:18).

Teachers need to be open-minded, taking all of the above aspects into account. No two children are alike and embracing knowledge about brain profiles and personality types can lead to increasingly effective results in music teaching.

Chapter 6

MULTIPLE INTELLIGENCES

A child miseducated is a child lost (Kennedy 2008).

6.1 Introduction

This chapter focuses on the theory of Multiple Intelligences, an understanding of which is as useful to teachers needing to expand their knowledge in teaching successfully, as is an awareness of brain dominance and personality types discussed in the previous chapter.

In the psychometric and behaviourist eras it was generally believed that intelligence was a single entity that was inherited and that human beings - initially a blank slate - could be trained to learn anything, provided that it was presented in an appropriate way (Gardner 1993:xxiii). The modern study of intelligence can be traced to Alfred Binet⁶³, whose research was conducted from the end of the 19th century to the beginning of the 20th century. During this time psychological studies moved away from prescientific understandings to more empirical investigations. Binet, together with Théodore Simon⁶⁴, believed that intelligence was measurable through IQ testing (Denig 2004:96-97). Traditional teaching focussed on two avenues of intelligence: verbal and mathematical skills (Brualdi 1999). A pupil who was weak in both of these would be categorized as doing

⁶³ Alfred Binet (1857-1911) was a French psychologist who invented the first usable intelligence test today called IQ test (Alfred Binet 2009).

⁶⁴ Théodore Simon (1872-1961) was a French psychologist who co-created the Binet-Simon Intelligence Scale tests with Alfred Binet (Théodore Simon 2009).

poorly in school and often teachers would label such a pupil as not going to amount to anything in life (Chambers 2008:1; Howell 2004).

There is growing concern that educators may not sufficiently challenge students. Instructional frameworks are needed that develop students' diverse thinking potential and special strengths that lie within it (Greenwald 2001). Denig (2004:96) poses the concern that quite a substantial number of teachers do not know how to define intelligence and even fewer know the number of distinct intelligences. However, currently more and more researchers believe that a multitude of intelligences does exist, quite independent of each other, with each intelligence having its own strengths and constraints (Chambers 2008:1; Denig 2004:97 and Gardner 1993:xxiii).

6.2 Theories of intelligence

Numerous theories have emerged to define, explain and predict human intelligence. In constructing a short history on the theories of intelligence, reference will be made to relevant psychologists. This section is by no means a detailed discussion: however, it is important for teachers to have some knowledge about the development of intelligence.

The following subsections describe some of the major theories of intelligence that have emerged during the last 100 years (Van Wagner 2009). Howard Gardner's Theory of Multiple Intelligences will not be discussed here as it is dealt with in detail later on in this chapter.

6.2.1 Charles Spearman: General intelligence

British psychologist Charles Spearman (1863-1945) described a concept he referred to as general intelligence, or the '*g factor*'. He used the technique of factor analysis to examine a number of mental aptitude tests. Spearman found

the scores on these tests quite similar. He concluded that “intelligence is general cognitive ability that could be measured and numerically expressed” (Esping and Plucker 2008:41 and Van Wagner 2009).

6.2.2 Louis Thurstone: Primary mental abilities

The American psychologist Louis Thurstone (1887-1955) did not view intelligence as a single general ability. This view was a direct reaction to Spearman’s work (Esping and Plucker 2008:42). His theory focused on seven different ‘primary mental abilities’ which include: Verbal comprehension, Reasoning, Perceptual speed, Numerical ability, Word fluency, Associative memory and Spatial visualization (Esping and Plucker 2008:42 and Van Wagner 2009).

6.2.3 Robert Sternberg: Triarchic theory of intelligence

American psychologist Robert Sternberg defined intelligence as “mental activity directed toward purposive adaptation to, selection and shaping of, real-world environments relevant to one’s life” (Sternberg 1985:45). Sternberg agrees with Gardner that intelligence is much broader than a single general ability, but he suggests some of Gardner’s intelligences are better viewed as individual talents (Van Wagner 2009). Sternberg’s theory by itself was groundbreaking in that it was among the first to oppose the psychometric approach to intelligence, focussing on a more cognitive approach (Triarchic theory of intelligence 2009).

Three different factors comprise Sternberg’s theory:

- Analytical intelligence: refers to problem-solving abilities
- Creative intelligence: involves the ability to deal with new situations using past experiences and current skills
- Practical intelligence: reflects the ability to adapt to a changing environment (Esping and Plucker 2008:44 and Van Wagner 2009).

6.3 The characteristics of intelligence

Howard Gardner's Multiple Intelligence Theory was first published in his book *Frames of Mind* (1983), and became established as a framework by which to understand and teach many aspects of human intelligence, learning style, personality and behaviour in education and industry. The author views Gardner's work as creating a paradigmatic shift in thinking; he questioned the idea that intelligence is a single entity, that it results from one factor, and that it can be measured simply via IQ tests⁶⁵. He is therefore not a clear cut modernist, because he challenges the limitations of Modernism where students are easily labelled as 'slow learners', dull or not so clever or talented. From time to time a student may be referred to a teacher, labelled as not talented. Often this is not the case since there might be a lack from the teacher's side to identify the particular student's dominant intelligences as well as the type of learner he/she is (Gardner 1998:32-33).

Gardner uses the definition of intelligence as "the capacity to solve problems or to fashion products that are of consequence in a particular cultural setting or community" (Gardner 1998:24; Giles et al 2007 and Shearer 2004:3). He asserts that it is not so much how intelligent a person is, as described by the IQ scale⁶⁶, but how a person is intelligent (Hunter 2006).

6.4 Intelligence and its subdivisions explained

Gardner initially developed his ideas as a contribution to psychology, but his work was soon embraced by education, teaching and training communities (Chapman 2006; Giles et al 2007). The intelligences are languages (metaphorically speaking) that all people speak and they are shaped by the cultures into which

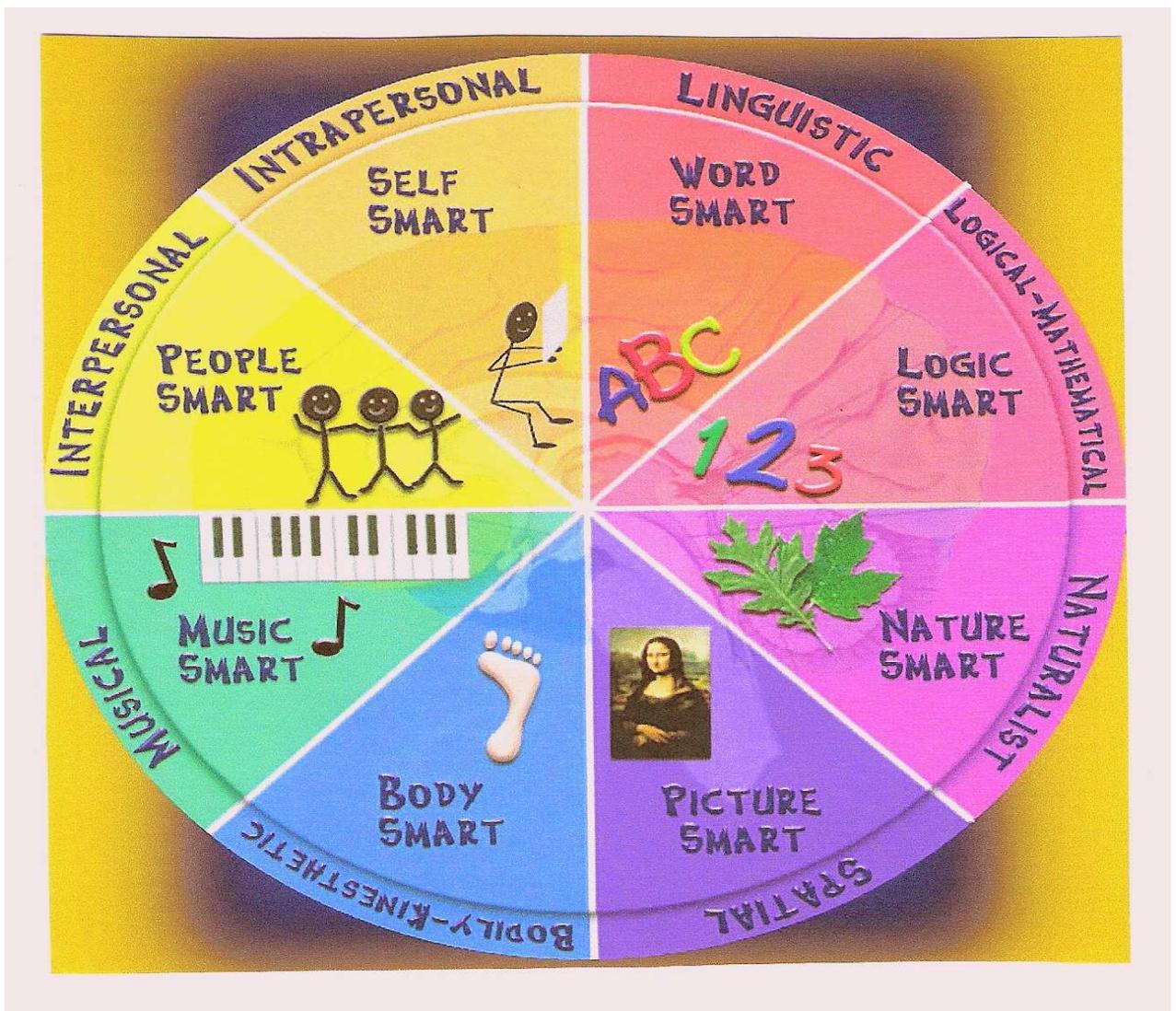
⁶⁵ The scores achieved on psychological tests aimed at quantifying intellectual ability (IQ 2008a; IQ 2008b).

⁶⁶ IQ scale denotes the scoring results indicated on the Gaussian bell curve, using standardized tests such as Wechsler, Slossen and Stanford Binet (IQ 2008b; Definition of IQ 2008).

people are born (Belavsky 2006:6). Teachers should think of all the intelligences as equally important (Belavsky 2006:6; Brualdi 1999).

Figure 19 demonstrates Gardner's initial seven intelligences plus Naturalist intelligence which was added at a later stage (Brualdi 1999; Chambers 2008:1 Coil 2005:68).

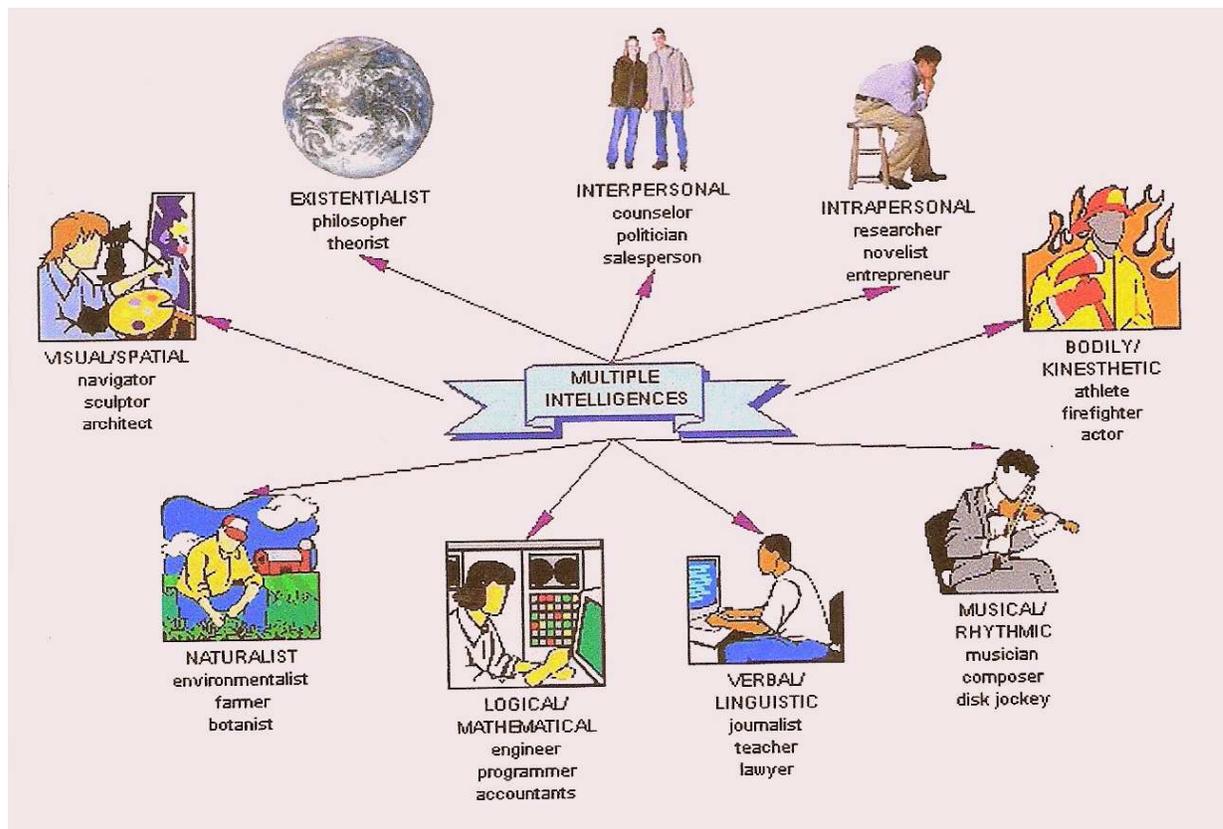
Figure 19: Howard Gardner's Multiple Intelligences (Kaser 2008)⁶⁷.



⁶⁷ Referring to his seven identified 1983 intelligences, plus naturalistic intelligence –see explanation on page 22.

Figure 20 indicates the intelligences with added Existentialist intelligence (Gardner 1999; Sherman 2006). The diagramme also indicates which vocations are most likely to match which intelligences.

Figure 20: Howard Gardner's intelligences expanded to nine different types (Multiple_Intelligences 2008).



Sherman (2006) refers to the intelligences as tools that all human beings can use for learning, problem-solving and creating. The tools for constructing understanding are critical and creative thinking. The goal of understanding is growth, depth and transfer of learning. Johnson (2005b:6) explores the idea that teachers' passion for teaching, motivation, education and training is not enough to survive in the 21st century. A solid grasp of motivational techniques, leadership and conflict resolution skills, human psychology, computer literacy, the ability to handle a large amount of paperwork regularly and the ability to think on your feet

are some of the necessary ‘tools’ all teachers need. Students, including those who are exceptionally talented, can improve their abilities to use the tools of thinking and become more efficient at applying what they learn to their lives. This is best accomplished by integrating the teaching of thinking directly into the study of content as will be later referred to in the chapter (Greenwald 2001).

From an eclectic perspective, the author deems the intelligences and the concepts arising from them as ‘tools’ or ‘aids’ to understand the overall personality, preferences and strengths of pupils and teachers. The author, for the purpose of this study and for functional reasons, will use the word ‘framework’, instead of model or theory, but still recognize the original terminology used by Gardner.

Humans are intelligent in different ways and the types of intelligence that a person possesses indicate not only their capabilities, but also the manner in which they prefer to learn to develop their strengths and weaknesses (Chapman 2006). Chapman states that everyone has a unique and different mix of intelligence types, and commonly people with the least ‘conventional’ intelligence (as measured using old-fashioned, narrow criteria), actually possess enormous talent – often undervalued, unknown and underdeveloped. Coil (2005:125) explains that there “will be no freedom without intelligence and no real intelligence without heart”.

Gardner challenges traditional, narrower views of intelligence. In his theory, intelligence encompasses the ability to create and solve problems, create products or provide services that are valued within a culture or society. Although the theory was not originally designed for use in a classroom application (Gardner 2004:215), it has been widely embraced by educators and has enjoyed numerous adaptations in a variety of educational settings. Where teachers have known that students had different strengths and weaknesses in the classroom, Gardner’s research was able to articulate that and provide direction as to how to

improve a student's ability in any given intelligence (Giles et al 2007). Belavsky (2006:6) suggests that students should be taught flexibility and provided with multiple views for understanding the physical, social, human and artistic worlds. If teachers teach only one way, only one kind of student will be reached. However, Gardner himself (2006:23) has made it clear that “[h]aving a strong intelligence does not mean that one necessarily acts intelligently”.

Sherman (2006) explains that Gardner is careful to state that intelligence should not be limited to the ones he has identified. The first two are ones that have been typically valued in schools; the next three are usually associated with the arts; and the next two are what he calls ‘personal intelligences’ (Gardner 1999:41-43). The last four intelligences listed were added at a later stage (Sherman 2006). The various intelligences are grouped in categories, which exist in varying degrees within all learners (Armstrong 2000:2; Chambers 2008:1; Coil 2005:69-76; Theory of multiple intelligences 2006).

The various intelligences grouped in categories

- (a) Thought
 - Verbal-linguistic
 - Logical-mathematical

- (b) Sensate
 - Visual-spatial
 - Body-kinesthetic
 - Musical-rhythmic

- (c) Communicational
 - Interpersonal communication
 - Intrapersonal communication

(d) Other (Proposed by Gardner in later publications)

- Naturalistic
- Spiritual/Moral/Existential
- Mental searchlight
- Mental laser.

Two more intelligences have been added by Sherman (2006). These include Olfactory/Gustatory and Touch intelligence. Olfactory/Gustatory intelligence has to do with sensitivity to chemicals, especially those associated with tasting and smelling. Touch intelligence focuses on the “haptic sensory system⁶⁸”, which implies mostly the hands and especially the fingertips, which contain one of the highest densities of human tactile receptors (Sherman 2006). Sherman continues that this intelligence would suggest that variability within people’s perceiving and knowing the world through the sense of touch might include understanding the dimensions of texture, hardness, temperature, weight, global and exact shape and volume of objects. Thus this would be an object-related intelligence (as discussed later on in this chapter). It might be utilized as a necessary asset in the musical and spatial intelligences in that a performer would use his or her fingers, as a violinist or open-hole flautist would rely heavily upon this sensory modality.

The following figure illustrates Gardner’s Multiple Intelligences (Armstrong 2000:4-6; Brualdi 1999; Chambers 2008:1; Chapman 2006; Coil 2005:67-76; Gardner 2004:217; Giles et al 2007; Sherman 2006).

⁶⁸ Haptic means pertaining to the sense of touch (Haptic 2008) and the sensory system is a part of the nervous system responsible for processing sensory information (Sensory system 2008).

Figure 21: Howard Gardner's Multiple Intelligences explained

INTELLIGENCE TYPE	CAPABILITY AND PERCEPTION
Verbal-Linguistic	Relates to an aptitude for spoken and written words
Logical-Mathematical	Demonstrates a strong connection to numbers, logic and abstractions
Visual-Spatial	Shows skills of visual perception, spatial judgement and eye-hand coordination
Bodily-Kinesthetic	Exhibits muscular coordination; the person learns best by doing
Musical	Demonstrates special abilities of hearing, singing, pitch identification and musical appreciation
Interpersonal	Interacts effectively with others
Intrapersonal	Shows strength in examining and judging oneself and having a strong degree of self awareness
Naturalist	Discriminates among living things (plants, animals) and the person is sensitive to features of the natural world (clouds, rock configurations)
Spiritual/Moral/Existential	Focuses on ethics, humanity and value of life. Existential relates to capturing and pondering the fundamental question of existence
Mental Searchlight	Includes individuals with a high IQ which allows them to scan wide spaces in an efficient way in order that society can run more smoothly (for example politicians, business people) (Gardner 2004:217)
Mental Laser	Includes individuals with a high IQ but more jagged profile which employs a metaphorical mental laser, allowing them to focus intensely on a more specific area. These individuals tend to work in the arts, sciences or some kind of craft or trade (Gardner 2004:217)

Apart from the above categories of the Multiple Intelligences, the author finds that the grouping of the same intelligences in three broad categories (see Sherman

2006) provides another way to think about the intelligences. The three broad categories are conceptualized in:

- (a) **Object-related Intelligences** – These capacities are controlled and shaped by the objects which individuals encounter and interact with in their environments.
- Logical-Mathematical intelligence makes it possible to calculate, quantify, consider propositions and hypotheses and carry out complex mathematical operations. Scientists, mathematicians, accountants, engineers and computer programmers all demonstrate strong logical-mathematical intelligence. Primarily the visual mode of perception is used in this intelligence. Some activities/behaviours that are strongly reflected are the understanding of abstract symbols/formulas, number sequences, deciphering codes, calculation and problem-solving.
 - Visual-Spatial intelligence instils the capacity to think in two and three-dimensional ways as do sailors, pilots, sculptors, painters and architects. It enables the individual to perceive external and internal imagery. The primary mode of perception is visual. Pupils strong in this type of intelligence will exhibit activities and behaviours needing an active imagination, detecting and organizing colour schemes and patterns. Abilities such as cartooning, drawing, mind-mapping and pretending will also be powerful.
 - Bodily-Kinesthetic intelligence enables the individual to manipulate objects and fine-tune physical skills. It is evident in athletes, dancers, surgeons and craftspeople. Primary uses of the Kinesthetic/Tactile mode of perception include touch, twisting, jumping, physical gestures, role playing and body language.

- (b) **Object-free Intelligences** – These intelligences are not shaped by the physical world, but are dependent upon language and musical (auditory) systems.
- Verbal-Linguistic intelligence consists of the ability to think in words and to use language to express and appreciate complex meanings. Authors, poets, journalists and speakers exhibit high degrees of linguistic intelligence. This intelligence uses both the auditory and the visual mode of perception. Pupils strong in this mode of intelligence will reflect activities/behaviours such as reading, good vocabulary, journal/diary keeping, creative writing ability, impromptu speaking, storytelling and an enticing sense of humour.
 - Musical intelligence is evident in individuals who possess a sensitivity to pitch, melody, rhythm and timbre. Normally musical intelligence is associated with composers, conductors, musicians, critics, instrument makers as well as sensitive listeners. Primarily the auditory mode of perception is used. Pupils strong in this intelligence will reflect heightened activities/behaviours in recognizing and understanding rhythmic patterns, vocal sounds, musical composition, instrumental sounds, musical performance, singing and tonal patterns (Sherman 2006).
- (c) **Person-related Intelligences** – These intelligences of the inter- and intrapersonal types reflect a powerful set of counterbalances to the other two categories.
- Interpersonal intelligence is the capacity to understand and interact effectively with others. It is evident in successful teachers, social workers, actors or politicians. Western culture has fairly recently begun to recognize the connection between mind and body;

proficiency in interpersonal behaviour is now increasingly regarded as of value and importance. Modes of perception are diverse and include visual, auditory, tactile and even olfactory/gustatory. Activities/behaviours that reflect interpersonal intelligence are being able to give and receive feedback, intuiting others' feelings, cooperative learning strategies, empathetic practices, collaboration skills, sensing others' motives and proficiency in person-to-person communication.

- Intrapersonal intelligence refers to the ability to construct an accurate perception of oneself and to use such knowledge in planning and directing one's life. Some individuals with strong intrapersonal intelligence specialize as theologians, psychologists, philosophers and mediators. Activities/behaviours strong in this intelligence are silent reflection methods, thinking strategies, emotional processing and focusing/concentration skills.

6.5 Implementing the Theory of Multiple Intelligences in music teaching

The previous sections offered a general discussion and grouping of the various intelligences. However, for the purpose of the study, focus will only be on and references made to a selection of these intelligences. The main objective for selecting the intelligences to be referred to in more detail will depend on which of the intelligences is more teacher or pupil related. Some selections focus on interaction between teacher and pupils.

Zimmer et al (2004) describe ideas and the atmosphere for actively engaging students when teaching as:

- Where student discussion and collaboration with teacher are encouraged
- Where students are expected to justify their thinking

- Where students feel comfortable questioning the reasoning of the teacher and vice versa
- Where students feel comfortable presenting results
- Where the teacher is a facilitator of learning rather than a dispenser of knowledge (thus not teaching by telling, but teaching by engaging).

6.5.1 Multiple Intelligences and music teachers

The following section explores the intelligences music teachers need to be strong in and to be aware of in individual music teaching. Gardner's Theory of Multiple Intelligences may not initially have been readily accepted within academic psychology. However, it has met with a strongly positive response from many educators. Psychology cannot dictate to education; it merely helps to understand the conditions within which education takes place. What is more, there are approximately twelve different ways to teach, rather than one (Smith 2002). The duty of the teacher is therefore to analyze the various intelligences each student relies on. Then the challenge for the teacher is to adapt his or her teaching style or use of strategies to tap into the different intelligences so that each student can reach an understanding (Hunter 2006).

Musical Intelligence should be strong in music teachers, but the person-related intelligences are regarded as just as important in the teaching process (Flett and Klopper 2009:13). These intelligences were added to Gardner's list by Goleman (1996 and 2006). Both the Emotional and Social intelligences are very relevant to this study in that they link with Gardner's Interpersonal and Intrapersonal intelligences.

Gardner proposes that Intrapersonal and Interpersonal intelligences and the type of intelligence typically measured by IQ and related tests are equally important. He emphasizes, though, that traditional measures of intelligence, such as the IQ test, fail to fully explain cognitive ability (Emotional intelligence 2006a). It is

interesting to note that Gardner (1998:29) is of the opinion that activities that involve any intelligence can have good affordances⁶⁹ to the other intelligences.

The teachers' level of strength in these intelligences, together with how a concept is presented to the pupil, will determine how well the pupil connects with a particular concept. This is where the role of the teacher becomes crucial. The teacher has to weave together approaches using as many different intelligences as possible and appropriate for the topic when trying to explain a concept in order for each individual to reach a level of understanding (Hunter 2006).

6.5.2 Multiple Intelligences: teachers and pupils

In order for the teacher to teach interactively using Multiple Intelligences it is critical to determine the nature and quality of their own MI profile in order to design interesting and creative lessons (Armstrong 2000:12). Since it is not the purpose of this thesis to discuss actual assessment scales the author would like to refer teachers to a test in which they can determine their profiles, for example the adult inventory set out by Armstrong (2000:13-16).

Armstrong (2000:21) states clearly that there is no 'mega test' on the market that can provide a comprehensive survey of a student's MI. He often humorously suggests to teachers that one good way to identify students' most highly developed intelligences is to observe how they misbehave in class or in the individual music lesson. The strongly linguistic student will be talking out of turn, the highly spatial student will be doodling and daydreaming, the interpersonally inclined student will be socializing, the bodily-kinesthetic student will be fidgeting and the naturalistically engaged student might well bring an animal to class without permission. The student is metaphorically saying through their misbehaviour "this is how I learn".

⁶⁹ Term created by James Gibson (Professor at Cornell University), meaning "fitting comfortably" (Gardner 1998:29).

Another effective observational indicator for identifying preferred intelligences in students is to note how they spend their free time before or after a class when waiting or relaxing. Highly linguistic students might have a tendency to take out a book to read, social students will be drawn to group games or gossip, spatial students toward drawing, bodily-kinesthetic students toward hands-on building activities, and the naturalistically inclined student might be found in the school garden outside the music room (Armstrong 2000:21; Coil 2000:70). Armstrong (2000:22-23) advises teachers who work with individual students or small groups to strongly consider keeping a notebook, diary or journal handy for recording observations of this kind.

Within a music teaching context the following intelligences are necessary for effective interaction between teacher and pupil (Armstrong 2000:51-65; Coil 2000:60-68; Giles et al 2007):

- Musical – both teacher and pupil need to possess sensitivity to pitch, melody, rhythm and timbre – if not so strong with pupils, teachers can explore methods in assisting them to strengthen these abilities.
- Bodily-Kinesthetic – the way the pupil moves fingers, hands, arms and body when playing on an instrument as well as the movements teachers will use to demonstrate specific techniques.
- Visual-Spatial – pupil actively imagining meaning of titles of pieces, drawing and pretending.
- Logical-Mathematical – interaction in understanding abstract symbols such as notes and/or clefs.

Visual-Spatial and Linguistic intelligences can be stimulated by using colourful posters or pictures to introduce the pupil to background information to a new style period in music or didactical concepts that the pupil might keep forgetting. The more the visual appeal, the better the pupil will remember the story accompanying the concept (Chambers 2008:2). Teachers can ask pupils to create their own posters or diagrammes to bring to class to describe their

understanding of the concept/s being explained previously. In this way pupils learn to interact with the information.

Simulations can be used for any subject or topic being taught. They appeal to learners who are strong in any of the intelligences. Such content-free learning material is becoming increasingly popular because it is more dynamic and compelling than static text (Chambers 2008:2). The author has, for example, encouraged simulations in music where the pupils had to dress and/or make their own costumes which represented the character/title of the piece of music they are performing. This created a lot of fun for students and even parents were greatly amused at annual studio concerts.

6.5.3 Using technology to teach to the Multiple Intelligences

The term “technology” covers a broad definition of tools which are available to almost anyone working within the teaching or learning context (especially teachers and pupils).

When incorporating technology in teaching, the methods of integration should be based on learning theory and teaching practices (basic teaching and learning needs). This implies not using computers or technology without thinking how the pupils will learn and how to teach using this technology. The author agrees with Haywood (2008), that the teacher should assess if technology is needed to teach a specific concept. If it can be taught better or faster with any additional supplementation, then do not use technology just for the sake of using it. Both teacher and student will get frustrated and the learning outcome will not be reached.

6.6 Defining Emotional Intelligence

Emotional Intelligence, also called EI and often measured as an Emotional Intelligence Quotient or EQ, describes an ability, capacity, or skill to perceive, assess and manage the emotions of one's self, of others and of groups (Emotional intelligence 2006a). Beasley (1987) defines EQ as one's ability to feel and IQ one's ability to think. Many of the factors that affect IQ also have a bearing on a person's EQ – particularly social environment. The heredity factor is less certain - presumably there are genes that determine one's sensitivity (Beasley 1987). Mayer (2005) perceives Emotional Intelligence as that which has something specific to do with the intelligent intersection of the emotions and thoughts. He asserts that Emotional Intelligence represents an ability to validly reason with emotions and to use emotions to enhance thought (Mayer 2005).

A more formal definition of Emotional Intelligence is:

The capacity to reason about emotions, and of emotions to enhance thinking. It includes the abilities to accurately perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth (Mayer, Salovey and Caruso 2004:197).

Another definition formulated by Mayer, Caruso and Salovey (1999:267) is:

Emotional intelligence refers to an ability to recognize the meanings of emotion and their relationships and to reason and problem-solve on the basis of them. Emotional intelligence is involved in the capacity to perceive emotions, assimilate emotion-related feelings, understand the information of those emotions, and manage them.

6.7 The important role of Emotional Intelligence in helping develop other intelligences

Early psychologists writing and thinking about intelligence initially focused on cognitive aspects, such as memory and problem-solving (Emotional Intelligence

2006b). However, some researchers recognized the importance of non-cognitive aspects early on.

Robert Thorndike, at Columbia University, was writing about Social Intelligence in 1920 and describing it as the skill of getting along with other people (Emotional intelligence 2006a). David Wechsler proposed in 1943 that the non-intellectual abilities predict one's ability to succeed in life (Emotional Intelligence 2006b).

Goleman called attention to the fact that emotions play a crucial role in everyday life and that emotions always exist – humans always feel something (Emotional intelligence 2006a). In order to connect successfully with pupils in a teaching/learning situation it is necessary for teachers to have developed emotional skills within themselves in such a manner that their own self does not overly interfere with the individual being taught. However, the author agrees with Goleman's view on emotions and that a successful link can be made to all pupils. If teachers can enhance their emotional competency and develop awareness in pupils to reach out to their own emotional domains, more successful teaching, learning and understanding can take place.

Goleman (1996:43) proposes the following domains of Emotional Intelligence:

- Knowing one's emotions: self awareness, recognizing a feeling while it happens
- Managing emotions: the ability of handling feelings so they are appropriate
- Motivating oneself: marshalling emotions in the service of a goal is essential for paying attention, for self-motivation, mastery and creativity
- Recognizing emotions in others: empathy, another ability that builds on emotional self awareness, is the fundamental 'people skill'
- Handling relationships: skill in managing emotions in others.

The author finds the competencies of Emotional Intelligence (as described by Flett and Klopper 2009:14-17) very useful; teachers are given insight as to how

to expand and improve their Emotional Intelligence skills. The five basic competencies are:

- Self Awareness: the ability to understand own emotions
- Optimism: includes a positive attitude and a sense of humour
- Flexibility: the ability to adapt to change when solving problems, making decisions and setting boundaries
- Impulse Control: the ability to manage emotions such as stress and anger. It also refers to taking responsibilities for thought patterns and actions
- Empathy: refers to the ability to understand others' emotions through having respect, compassion and consideration towards others.

The first four competencies relate to Intrapersonal intelligence and the last one to Interpersonal intelligence. People differ in their abilities in each of these domains; some people may be quite adept at handling their own anxiety, but relatively inept at soothing someone else's upsets. The reverse may also be the case. The underlying basis for this human level of ability is, no doubt, neural, but the brain is constantly learning. Lapses in emotional skills can be remedied: to a great extent each of these domains represents a body of habit and response that, with appropriate effort, can be improved upon (Goleman 1996:44), although Salovey and Mayer (1990) do not fully agree with this statement.

Less than a century ago psychological science knew little or nothing of the mechanics of emotion (Goleman 1996:ix). Even cognitive theory could not explain questions like: why some people just seem to have a gift for living well; why the smartest kid in the class will probably not end up the richest; why we like some people virtually on sight and distrust others; why some people remain buoyant in the face of troubles that would sink a less resilient soul. What qualities of the mind or spirit, in short, determine who succeeds? EQ is not the opposite of Intelligence Quotient (IQ). Some people are blessed with a lot of both, some with little of either. What researchers have been trying to understand is how they

complement each other; how one's ability to handle stress, for instance, affects the ability to concentrate and put intelligence to use (Gibbs 1995).

The more connections between the limbic system and the neocortex, the more emotional responses are possible. Emotional skills, like intellectual ones, are morally neutral. Just as a genius could use his/her intellect either to cure cancer or engineer a deadly virus, someone with great empathic insight could use it to inspire colleagues or exploit them (Flett and Klopper 2009:10-12; Gibbs 1995).

When Emotional Intelligence is applied to music teaching it is necessary to consider that just as highly intelligent people may find it difficult to fit into normal life, so highly sensitive people can only really be themselves when in the company of those with similar EQ (Beasley 1987). It is important for children to have balanced lifestyles and to develop an awareness of where they fit in.

6.8 Key points in Multiple Intelligence Theory

Armstrong (2000:8-9) emphasizes the following key points in MI Theory:

- Each teacher and pupil possesses aspects of all of the intelligences. MI theory is therefore not a “type theory” for determining the one intelligence that fits. It is a theory of cognitive functioning.
- Most people can develop each intelligence to an adequate level of competency, if given the appropriate encouragement, enrichment and instruction.
- Intelligences usually work together in complex ways. No intelligence exists by itself in life (except perhaps in rare instances in brain injured individuals): intelligences are always interacting with each other.

- There are many ways to be intelligent within each category. There is no standard set of qualities that a student/teacher must have to be considered intelligent in a specific area.

The above points link with the postmodern view that parameters are not fixed, but movable. Consequently, a person may not be able to read, yet be highly linguistic because he/she can tell an excellent story or has a large oral vocabulary. Similarly, a person may be quite awkward on the sports field, yet possess superior bodily-kinesthetic intelligence when a carpet is woven. In the field of music, one child may, for example, have a particular interest in theoretical and historical aspects, while others may enjoy the practical side far more; one student may like sight-reading while another likes to play by ear, etc. MI theory emphasizes the rich diversity of ways in which people show their gifts within intelligences as well as between intelligences (Armstrong 2000:9).

Chapter 7

CONCLUSIONS & RECOMMENDATIONS

7.1 Introduction

For background, this study aimed to understand and describe teachers' current perceptions about learning strategies in music in order to suggest how expanding these views can be valuable in the 21st century. The aspect that there is not 'a' best way or 'one' way of teaching, but a 'more', open-ended way of teaching with ample possibilities was also explored.

7.2 Answering the research questions

This study was based on the following main research question:

7.2.1 How can the understanding of aspects related to learning strategies in music expand teachers' perceptions?

Teachers generally assume that the world is as they see it and that others (our students) see it the same way – that our senses reflect an objective and shared reality. This is seldom the case, since in teaching experience the author has found that one thing can be meant in an explanation but something different understood or perceived by students.

In this case the findings of the research underline that the term perception conveys in itself various different meanings depending on the context in which it is used or viewed. It is possible that every teacher will have his or her own experiences regarding learning strategies. That is acceptable because each

teacher is unique and will experience and perceive the world/teaching in a changing way. The conflicting experiences associated with various different learning strategies are understandable, because that is the teachers' reality.

Very often, music educators subscribe to a long-term goal of broadening students' musical preferences. In so doing, they lead students to engage in music away from their preferred styles, thereby expanding their horizons. Such a goal requires seeking out new and different music. The author has observed during the last 16 years of piano teaching that a great number of pianists can be led to prefer to play more modern than traditional styles of music.

As mentioned above, teachers have different preferred modes of thinking, teaching and perceiving. As with teachers, pupils have different viewpoints regarding learning, understanding and perceiving. Such preferences influence how information is processed and stored as well as retrieved in order to make meaning out of it. Effective learning is "whole-brained".

Through experience, the author acknowledges the fact that pupils function during musical learning from a dominant learning style, intelligence or brain quadrant, but the question arises as to how to address the other criteria relating to the less developed areas of their learning styles, intelligences and brain quadrants. An eclectic viewpoint in this regard will give both pupil and teacher the freedom not to be stereotyped or labelled as a specific learner or teacher. However, there need to be some flexible guidelines to start with when learning and teaching and therefore it is necessary to acknowledge and consult the various existing theories, viewpoints and classifications contributed by notable researchers, psychologists, neurologists, philosophers and educators.

It was found that the two terms Multiple Intelligences and learning styles stand in relation to each other; rather than one replacing the other. Gardner himself emphasizes that the two terms are not in all aspects synonymous.

In understanding aspects influencing effective learning and teaching styles, it is important to focus on the interaction between pupil and teacher in relation to the material being taught. The level of interaction between pupil and teacher is determined by a number of factors:

- The teacher, for instance, has his or her own particular teaching style, way of communicating and motivational strategies.
- During the teaching process, aspects to be considered would be the pupils' brain profiles and personality types. This will determine the type of learners they are. Their dominant intelligences and particular character strengths also play an important role in learning.
- The contextual learning area explores the circumstance of the learning situation. This area concerns itself further with whether a pupil is primarily an independent, dependent or interdependent learner. The contextual framework focuses on whether a pupil is content or relationship driven. The first type of pupil will learn even if he/she dislikes the teacher, while the second needs a relationship to access information. Lastly this framework looks at whether a pupil does better in a structured, conforming environment or in a flexible environment.
- The assumption that learning styles are not a stable cognitive factor over time is debatable since both pupil and teacher are likely to gain knowledge through thought, experience and the senses and therefore do not necessarily need the learning style to be stable over time.

Constant changing and adapting to different students are exciting and creative and can have a positive outcome on both pupil and teacher. That learning styles are not stable over different tasks and situations is likely, but with careful planning and observation both pupil and teacher can adapt to choose the most appropriate learning style from which to operate.

The author is of the opinion that for any pupil to eventually function effectively in any professional capacity requires working well in all learning style modes. Thus an objective of education should be to help students build their skill in both their preferred and less preferred modes of learning. Learning style models that categorize these modes provide good frameworks for designing instruction with the desired breadth. The goal is to make sure that the learning needs of pupils in each model category are met at least part of the time.

Practical ways that learning and teaching can be enhanced is by acting on the fact that people differ in the ways they learn best. It is important as a learner or teacher to use a wide repertoire of ways of understanding concepts, including the abstract, the procedural, the imaginative and the emotional. The most important challenges people face in life require the use of capabilities from all four ways of thinking. This is evident in successful teachers, social workers, actors or politicians. Because Western culture has fairly recently begun to recognize the connection between mind and body, proficiency in interpersonal behaviour is now regarded as of value and importance. Modes of perception are diverse and include the visual, auditory, tactile and even olfactory. Activities/behaviours that reflect inter-personal intelligence are being able to give and receive feedback, intuiting others' feelings, cooperative learning strategies, empathetic practices, collaboration skills, sensing others' motives and proficiency in person-to-person communication.

Through teaching experience, it has been found that various cultural groups differ vastly in the perception of and interaction with their own emotions. Certain groups of people have been found to be much more reserved than others. In order to connect successfully with pupils in a teaching/learning situation it is necessary for teachers to have developed emotional skills within themselves in such a manner that their own self does not overly interfere with the individual being taught. However, the author agrees with Goleman's statements and that a successful link can be made to teaching pupils. If teachers can enhance their

emotional competency and develop awareness in pupils to reach out to their own emotional domains, more successful teaching, learning and understanding can take place.

The following sub-questions arose from the main research question:

7.2.2 In selecting appropriate learning strategies for individual music pupils, how important are trends in thought, frameworks and concepts relevant to teaching music?

Clearly the researcher initially believed in the importance of teachers being aware of trends in thoughts, frameworks and other concepts relevant to music teaching as well as how this knowledge influences learning strategies for individual music pupils. Having chosen the topic of this thesis, the research confirmed her belief that learning strategies are reasonably fixed in their design and that there are not too many different ways to teach the same concept to students.

In her teaching practice, before conducting this research, the author was insufficiently aware of the causes of personality differences in pupils and in the teaching process found it difficult what to be aware of or to sufficiently address because of her lack of knowledge on an eclectic orientation, holistic teaching, different learning and teaching styles, psychological and philosophical concepts and brain and personality types, as well as multiple intelligences. The shift from the parts to the whole in thinking was therefore initially not easy; the author, like many teachers, had been conditioned by her upbringing and education to think in terms of parts. Western philosophical thought has largely been mechanistic and reductionistic, concentrating on the parts. Bearing the above points in mind might lead to teachers better understanding their pupils, because the pupils are viewed in relation to their background, ability, environmental influences and personality. Thus perception is 'relative' and not identical between any two teachers or pupils.

The challenge is to observe the various contexts from which trends are shaped, because of developments and changes in certain fields.

Interacting with Postmodernism as an orientation and eclecticism as a framework is challenging, because when applying the ideas to a musical context it introduces a whole new set of questions that teachers should interact or network with. The aspects mentioned under 7.2.2 and 7.2.3 describe how the author's own teaching philosophy has changed and progressed during the course of the research.

7.2.3 How relevant is the study of brain profiles, personality types and Multiple Intelligences in influencing teaching and learning styles in music?

As was the case with the previous research sub-question, the author's initial belief in the importance of these topics was based on her then limited understanding. With further research during the course of the thesis the author came to the conclusion that a brain compatible teacher is one who understands holistic teaching (see chapter 3 paragraph 3.2.1.6) and uses strategies in a purposeful way: an educator who understands the reasoning behind his/her teaching.

The goal of knowing about personality types (see chapter 5 paragraphs 5.5, 5.7 and 5.10) is to understand and appreciate differences between people (in the context of the thesis this means teachers and pupils). This study largely focuses on how different individuals prefer and use their perception (see chapter 3 paragraphs 3.4; 3.4.1; 3.4.2 and 3.4.3) and judgement.

Teachers need to be open-minded (see chapter 3 paragraph 3.4.4), taking all of the above aspects into account. No two children are alike and embracing

knowledge about brain profiles and personality types can lead to very effective results in music teaching.

The intelligences are tools that all human beings can use for learning, problem-solving and creating. The tools for constructing understanding are critical and creative thinking. The goal of understanding is growth, depth and transfer of learning. All students, including those who are exceptionally talented, can improve their abilities to use the tools of thinking and become more efficient at applying what they learn to their lives. This is best accomplished by integrating the teaching of thinking directly into the study of content.

From an eclectic perspective, the author deems the intelligences and the concepts arising from them as ‘tools’ or ‘aids’ to understand the overall personality, preferences and strengths of pupils and teachers. Teachers should appreciate that an intelligence can be enhanced and changed, based on needs, motivation and opportunity. Thus the idea of Multiple Intelligence should not be used as a label that limits pupils’ opportunities or their sense of their own potentials (Ying-Pui 2008) (see also chapter 6 paragraphs 6.3 and 6.4). Everyone has a unique and different mix of intelligence types, and commonly people with the least ‘conventional’ intelligence (as measured using old-fashioned narrow criteria), actually often possess unknown or undervalued and underdeveloped talent.

It would be expected that music teachers should be strong in Musical Intelligence. However, the person-related intelligences (Emotional and Social Intelligences) are regarded as just as important in the teaching process. Both these intelligences are relevant to the study in that they link with Gardner’s Interpersonal and Intrapersonal intelligences. The teachers’ level of strength in these intelligences, together with how a concept is presented to the pupil, will determine how well he or she will connect with a particular concept. This is where the role of the teacher becomes crucial. The teacher has to unite approaches

using as many different intelligences as possible and appropriate for the topic when trying to explain a concept in order for each individual to reach a level of understanding.

The duty of the teacher is therefore to analyze the various intelligences each student relies on. The challenge is then to adapt teaching style or use of strategies to tap into the different intelligences so that each student can reach the best understanding possible.

7.2.4 How can intrinsic motivation be expanded in music teaching?

One of the most important contributory factors to pupil motivation is the effectiveness of the curriculum being used (Fraser 2005). Within a musical context this can refer to the choice of repertoire. Should the teacher follow a specific exam syllabus with the pupil or not? It is always easier to teach well-known pieces, but teaching methods and repertoire need to be expanded and teachers need to become knowledgeable about new developments. It is the teacher's responsibility to promote awareness of new music by motivating and inspiring pupils to learn these works.

Music teaching is about 'relationship' and 'trust' and these will not be achieved through constantly using fear as a method of motivation. Sympathetic teachers do not merely reflect on what they hear, but instead respond to what excites each pupil and then react in a way that reinforces each student's natural gifts. This is done by adjusting presentation, expectations, syllabus and even personality to suit each student's learning style.

In order to better understand pupils, it is necessary for teachers to be aware of areas of strength in their brains as well as their personality types. This will lead to more effective perception and teaching strategies. Jensen (1996:6) emphasizes the importance of effective teaching in the following statement: "When teachers

design learning around basic principles of how the brain learns motivation, meaning and recall increase for all learners”. Therefore success in motivation does not just depend on the student’s personality or learning style, but also on how teachers view themselves and their profession.

7.3 Strategies in addressing limitations in individual music teaching

Before addressing limitations in music teaching it is of importance to formulate an individual teaching philosophy. There can be many aspects to such a philosophy, but clarity as to what the teacher believes will influence how he/she perceives and experiences teaching. Although Postmodernism is seen as controversial by scholars, most agree that postmodern ideas have had a major impact on philosophy, art, music, critical theory, literature and interpretation of history since the late 20th century.

Current life is constantly changing and challenging teachers’ value systems and educational viewpoints. It has also been found through teaching experience that it is almost impossible to conclude with any right or wrong answers with regard to teaching methods or learning styles. Knowledge about philosophy, psychology as well as music will guide teachers in moving towards challenging fixed pedagogical ideas, not necessarily arriving at specific answers, but broadening thinking processes in areas of concern.

7.4 Suggestions for rethinking and revisioning current teaching methods

Whereas the previous section 7.3 focussed on addressing limitations in individual music teaching, this section provides suggestions for rethinking teaching methods. In line with the target group of this whole thesis, both sections refer to individual music studio teaching.

In order to revision current teaching strategies and learning styles, the author proposes some pointers that can be beneficial for students and teachers:

- That which the teacher believes will influence how he/she perceives and experiences teaching. One such aspect that forms a strong foundation in my own teaching philosophy is that when students believe that success is possible, they will try. So in teaching, my first priority will be to help my students believe in themselves and their ability to learn.
- The research considered the theory of Multiple Intelligences, present amongst students and teachers. Music teachers are encouraged to be more aware of the differences amongst their students and themselves. This idea creates space for and acceptance of students being 'smart' in different ways without being classified or labelled as having a certain limited intelligence determined by traditional IQ tests.
- A postmodern orientation as an underlying philosophical trend for the study creates various flexible means in which many terms, ideas, theories, frameworks and strategies could be set, without becoming nihilistic in approach. The author is not a foundationalist, but firmly believes that certain foundations forming part of the teaching and learning process are valid and cannot be disregarded. In teaching music it is important to visualise the web of life as living networks interacting with other networks. It is acknowledged that when thinking about teaching and learning styles that the immediate reaction would be to do so from the perceptions imprinted by past education, current place of work, teaching experiences and the surrounding teaching community. Therefore interacting with Postmodernism as a movement is challenging, because when applying the ideas to a musical context it introduces a whole new set of questions that teachers should network with. Postmodernism asserts that experience is personal (cannot be generalized) and that meaning is only for the individual to experience.

- The area of continuing professional development on the side of the teacher is of extreme importance in order to keep up with current trends in thought, frameworks and concepts relevant to the teaching environment.
- Knowledge about philosophy, psychology as well as music will guide teachers in moving towards challenging fixed pedagogical ideas, not necessarily arriving at specific answers, but broadening thinking processes in areas of concern.
- Holism as part of the teaching process considers the complete person, physically and mentally. Therefore teaching is primarily student-centred, leading teachers to better understand their pupils, who are viewed in relation to their background, ability, environmental influences and personality.
- An aspect to consider will be what teachers' perceptions of music and more specifically learning styles will look like in the future. It is said that the road to the future runs through the past (Webber 1999:7). The challenge is to observe the various contexts from which trends are shaped. This is one of the reasons why an eclectic approach as theoretical framework was chosen.
- Continuing professional development on the side of the teacher is of great importance in order to keep up with current trends in thought, frameworks and concepts relevant to the teaching environment. Without a focus on and effort towards remaining up to date with these trends, it is likely that teachers will stagnate and fall behind the current research, continuing to teach in the same way that they were brought up with and studied during their initial years of teacher training.

Consideration of the above points could provide a basis for rational and consistent judgments or could be regarded by many as universal values. Applied to the context of this thesis, the author does not believe that it is possible to take total control of the destiny of a pupil's learning style(s) or the teacher's teaching strategies and his/her perceptions thereof.

In Modernism, knowledge and understanding are important. Scientific proofs and explanations must be sought. There are absolute norms and values and few or no interactions between anything. It is the belief of the author that this type of mindset is unlikely to instil within students a freedom or creativity to learn. The author proposes a more relational approach in teaching.

7.5 Recommendations for dissemination of this research

Recommendations for future dissemination of this research embrace ideas regarding the in-service training of specialist teachers in a school/music centre capacity, as indicated in the last bullet of the previous section, as well as reaching the private music teacher not connected to any school.

The question arises as how to reach music teachers that are set in fixed ways of teaching with no real interaction with other music teachers. To address this issue, possible in-service training workshops can be considered. As a starting point all teachers should be registered with a professional structured body, for example the South African Council of Educators. This body should require teachers to attend a certain number of professional development courses each year. Apart from this, many teachers are not computer literate or even connected to the World Wide Web. Therefore computer literacy and training in how to use the internet is essential for music teachers. It is also important to be aware of studio pedagogy courses offered at universities and by examining bodies such as the ABRSM, Trinity Guildhall and UNISA. These courses are rare (especially in South Africa), but growing, and offer opportunities for some in-service training for

educators. The idea as mentioned above would be to bring more such courses and training to South Africa, and especially to smaller centres, in order to assist teachers who do not have the means to attend courses offered away from home. The author also intends to compile a practical piano method book with additional teachers' notes to accompany it. Such a book produced in South Africa would be cheaper for teachers to obtain than imported publications and would be more accessible to all regions of South Africa.

A problem for educators in general is to be sufficiently motivated to have the desire to access sufficient information to stay ahead of developments in teaching and learning styles. This could mean engagement in providing a selection of valuable websites for teachers to use to gain 'new' information (for examples see www.practicespot.com; <http://teachers.net> and those search engines and online articles listed in the introduction to chapter 2).

The author has a vision to develop an own, African based website to publicize information relevant to music teaching in an article-like fashion and incorporating articles from other notable music teachers and researchers. This website will contain material in Afrikaans and English. Teachers can have free access to articles that address musical and pedagogical issues (similar to the very informative online Piano Pedagogy Forum). The design of the website will be kept very basic so that Africans who still have slow-speed access to the web can download information faster. As internet improves in African countries the website can be updated with more elaborate designs.

Networking with various forums abroad would be essential to stay relevant. In order to reach this goal a monthly newsletter could be considered in conjunction with well known international music pedagogues and specialist music teachers.

The misconceptions understanding working with Kinesthetic learners are another area of importance that can be valuable for future research. As Bruckner

(2005:46) and Garcia (2002) mentioned (see chapter 4 under 4.4.3), these students are most at risk in our schools today because they tend to be labelled with ADD or ADHD as a result of not being able to sit still like their more visual or auditory classmates. These students learn by being in constant motion and often understanding is achieved in this state. They are able to do more than one activity at a time and this can be taxing for the teacher.

7.6 **Concluding remarks**

Current views and beliefs in society are challenged in music teaching because of increased options of choice and social identity in all spheres of life, affecting both students and teachers. Constant life changes challenge teachers' value systems and educational viewpoints. Teaching experience has also shown that it is almost impossible to conclude with definite answers with regard to teaching methods or learning styles (also see chapter 1 paragraph 1.1 regarding teaching philosophy) There is an increasing need for teachers to support pupils in making sense of and surviving in unstable and unpredictable surroundings.

Teaching is a creative art; every situation is different and only partly predictable. There is not 'the' best way or 'one' way of teaching, but a 'more', open-ended way of teaching with ample possibilities.

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