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 Binet[63], 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 Simon[64], 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

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[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 tests[65]. 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 scale[66], 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

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[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 (Beliavsky 2006:6). Teachers should think of all the intelligences as equally important (Beliavsky 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].

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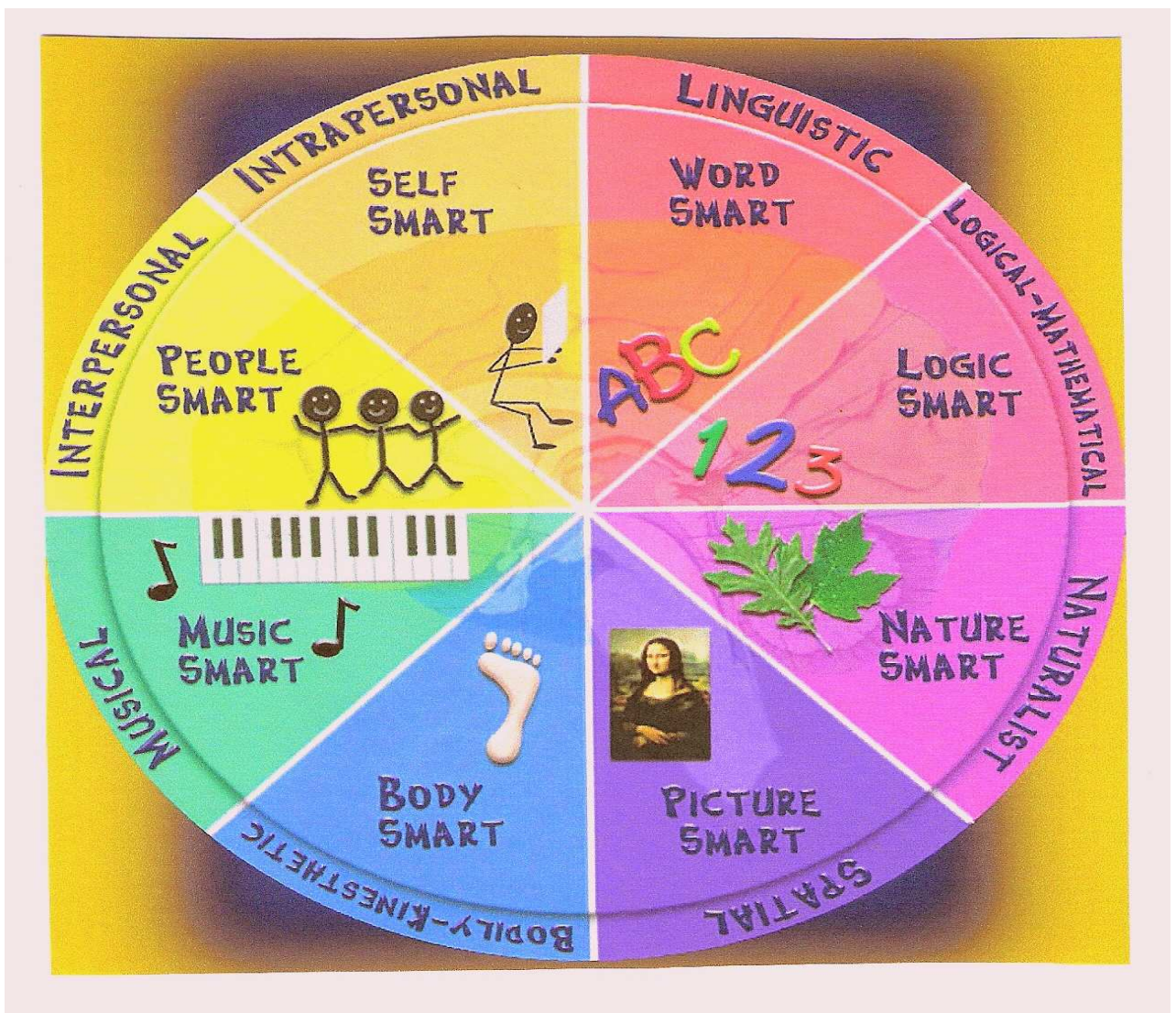
[67] Referring to his seven identified 1983 intelligences, plus naturalistic intelligence –see explanation on page 22.

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).
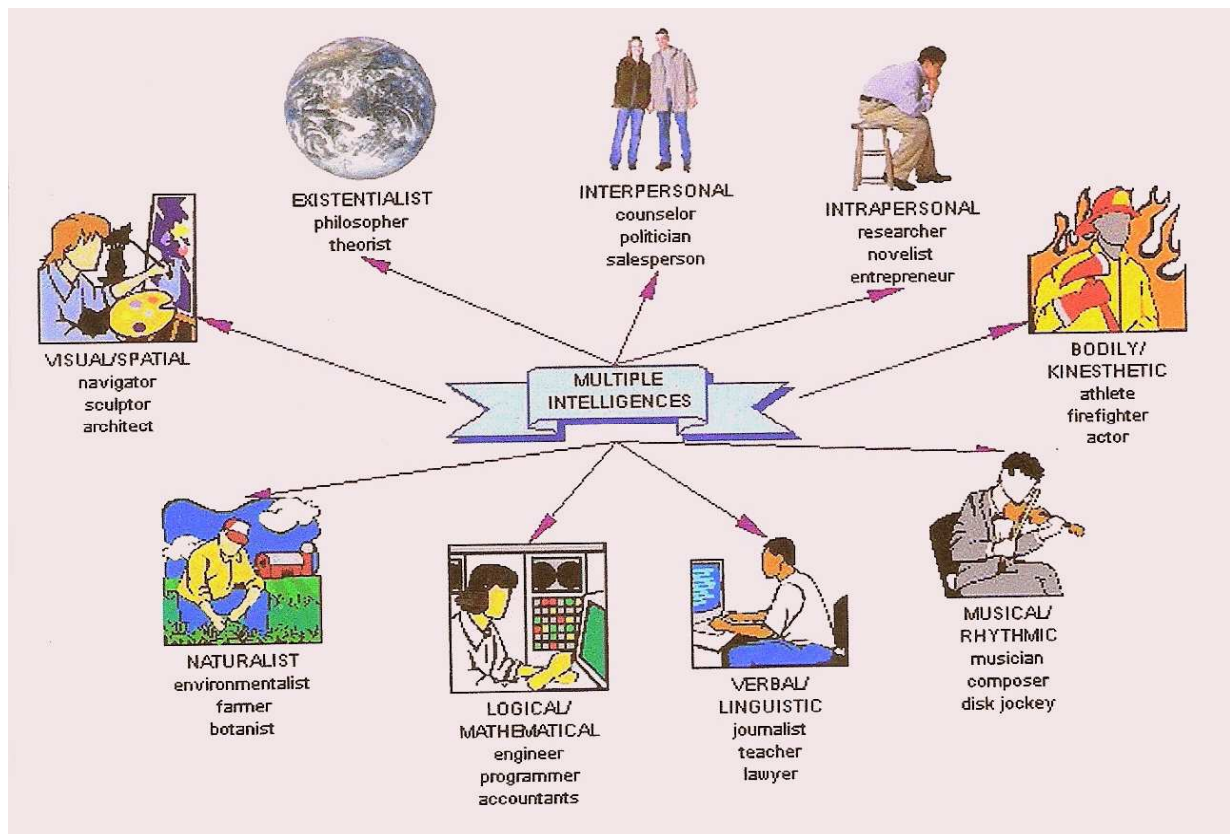
Sherman (2006) refers to the intelligences as tools that all human beings can use for learning, problem-solving and creating. The tools for constructing understanding are critical and creative thinking. The goal of understanding is growth, depth and transfer of learning. Johnson (2005b:6) explores the 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). Beliavsky (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 system[68]", 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).

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[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 affordances[69] 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".

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[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.