The Magic Tree of Music:
Exploring the potential of world music workshops as a catalyst for creativity in children

Thesis submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy

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Statement of Authenticity

I certify that the work in this thesis entitled The Magic Tree of Music: Exploring the potential of world music workshops as a catalyst for creativity in children has not previously been submitted for a degree nor has it been submitted as part of the requirements for a degree to any other university or institution other than Griffith University. To the best of my knowledge, this thesis contains no material previously published or written by another person, except where due reference is made in the text.

Signed: [Redacted]

Date: December 16th, 2016
Abstract

It is now widely acknowledged that the diversity of sounds, rhythms, styles, techniques, and musical structures that exist amongst the world’s musical traditions provides an opportunity for children to learn, experience, and develop a greater breadth of musical knowledge (Swanwick, 1988). For this “polymusicality” to develop, Anderson and Campbell (2011, p. 3) highlight the importance of early exposure to a large array of music practices. What has been explored less is how exposure to world music presents the opportunity for children to enhance their musical creativity as they expand musical understanding and abilities. This can take many forms, including improvisation that many of the world’s musical traditions feature as an important characteristic, providing a forum for imagination, experimentation, and association of new and often quite disparate musical ideas.

All these aspects may contribute to enhance children’s musical and general creativity. This is highly relevant in classrooms now that the development of creative thinking as a skill has recently gained a renewed focus in education (Kim, 2011; Sharp & Metais, 2000), as the benefits of creative thinking are recognised. However, there are only a few studies that investigate the effect music learning has on general creativity (Hallam, 2010, p. 278), and few studies that consider the success and outcomes from world music programs (Abril, 2006; Cain, 2011; Szego, 2002). This study aims to contribute to greater understanding of stimulating creativity in children, using musical diversity as a tool.

Through developing and examining The Magic Tree of Music, a pilot program of world music workshops—involveing learning West African djembe, Hindustani classical music, and Javanese gamelan—aired at primary-school aged children, this study explores the ways children engage with creativity as they acquire a level of polymusicality. Using qualitative and quantitative assessment via interviews, observation, and psychometric testing, the potential changes in participants’ musical and general creativity over the course of the program are analysed. The study is interdisciplinary to some extent, touching on aspects of music pedagogy, psychology of creativity, and ethnomusicology, but is primarily situated in music education.

The analysis of quantitative research data from the study shows substantial post-workshop increases in children’s musical fluency, some increases in their musical originality, and influences on their polymusicality. More significantly, the qualitative data indicate that a mix of elements contributes to children’s increased creativity, including well-considered inclusion of story-telling and use of metaphor; familiarity and uncertainty; confidence and motivation;
improvisation; group dynamics and individualism; enculturation and environmental influences; and musical knowledge and involvement. While not statistically reliable due to the limited number of participants involved in the pilot program, the data certainly invites further research.

Exploring the correlation between qualitative and quantitative data, key factors influencing children's creativity in the context of the world music workshop pilot are identified, along with their links to key characteristics of general creativity. This leads to a proposal for a pedagogical framework to understand, gauge, and apply factors influencing children's creativity as they engage with new musical forms and idioms.
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PART ONE:

SETTING THE SCENE
1.1 Introduction

On first hearing Javanese gamelan, Naomi likens the sounds to “diamonds clinging together”, and draws a lamp with strings of diamonds hanging from it. In the workshops that follow, she seems shy and reluctant to improvise at first, but as they progress, she becomes one of the most enthusiastic and creative improvisers. Tommy has never seen, heard, or touched an Indian tabla before, yet he effortlessly translates the sounds of rabbits running, elephants stomping, and the moon upon the water from an Indian folk tale on the two hand drums. After participating in four West African djembe workshops, Rebecca returns to a Latin-inspired piano piece she is learning and approaches it from its rhythmic base rather than the more conventional European melodic and harmonic approach, enabling her to grasp its essence quickly and deeply.

(Pilot program personal workshop notes)

More than 50 years ago, Mednick (1962) defined creativity as a “forming of associative and largely mutually-remote elements into new combinations” (p. 221). Juxtaposition of a number of ideas that have been previously unrelated allows new ideas to be formed. I. A. Taylor (2007) describes this as “novel arrangements of temporarily contiguous, unusual associations to a given stimulus” (p. 11). The concept of creativity, however it is defined, can be explored in a multitude of ways—it can be viewed from either a person, process, environmental press (such as a place), or product perspective (Runco, 2004, p. 661). These various perspectives provide a platform for further questions on the nature of creativity: Does creativity emanate from various personality traits? To what extent is the cognitive process a part of creativity? How much does the socio-cultural environment contribute to creativity? What determines that the final output, such as a new musical composition, is deemed a creative product? How much can creativity be enhanced by education? Creativity and the aspects that contribute to the existence of creativity are issues that have fascinated humankind for centuries in the search for understanding our nature, behaviour, and capacity. As a consequence, there are diverse and numerous definitions of what the word creativity encompasses. In considering all of these perspectives—and, indeed, the interactions between them—the search for the understanding of creativity is furthered. The multi-perspective approach to explaining creativity is supported by Batey’s (2012) and Sternberg and Lubart’s (1996) confluence theories of creativity, which incorporate many of these possible scenarios to describe the complex and multi-faceted nature of the phenomenon called creativity.

If the person, process, place, and product perspectives are ways to understand and develop creativity, are they also aspects that can be taught or enhanced? If, as Bandura (1997) claims,
“creativity constitutes one of the highest forms of human expression” (p. 239), then it is important to seek ways to encourage, nurture, and promote creative thought as one of the goals of education in any society. De Bono (1992) argues that "creative thinking—in terms of idea creativity—is not a mystical talent, rather it is a skill that can be practised and nurtured" (p. 310). A UNESCO study (Lubart, 2004) emphasises that students’ creative abilities to produce original and insightful ideas should be an important measure of the quality of any education system. If there are aspects that are recognised as contributing to creativity, then finding ways to assist students to develop these criteria is worthwhile. This is one of the ambitions underlying my research.

Early research on the characteristics of creativity has focused mainly on trying to identify any unique personality traits of exceptionally creative individuals that could explain these creative abilities (Guilford, 1950; Torrance, 1962). It was not assumed that creativity was an ability that could necessarily be taught. In the early 20th century, the perception of the source for creativity has gradually shifted from inherited genius possessed by highly talented individuals, to diverse human abilities (Lin, 2011, p. 151). More recently, research has demonstrated that creativity can be explained by reference to other, more easily taught, skills such as pattern recognition, model building, analogical thinking, and exploration of alternatives (DeHaan, 2008, p. 134). A study conducted by Haring-Smith (2006) suggested that learning environments designed to promote creativity and innovative thinking would be those that encourage questioning, risk-taking, independence and flexibility; that use pedagogies that favour discovery methods rather than didactic instruction; that include curricula that bring together multiple disciplines; and have reward systems that depend on intrinsic drives rather than extrinsic incentives. Leong (2014) also discusses the importance of the appropriate pedagogical environment for creativity to flourish, and points out that “the culture of competition and assessment in education promotes a narrow focus on convergent teaching and learning that can suppress creative thinking” (p. 210). The opinions of these more recent researchers give weight to the argument that creativity is an ability that can be stimulated and developed, given the right approach.

The promotion of creative learning is particularly relevant at this time in the evolution of educational development for many different societies, as according to a 2011 study conducted in the United States, globally we are experiencing a “creativity crisis” (Kim, 2011, p. 285). In her comprehensive and longitudinal study, Kim analysed measures of creativity for kindergartners through to adults over the past 40 years, using scores from the Torrance Tests of Creative Thinking (TTCT)—Figural (1966, 1974, 1987, 2007a, 2007b). The TTCT is utilised extensively in both the educational field and the corporate world, and is more widely used
and referenced than other measures of creative or divergent thinking (Kim, 2011, p. 285). Her results indicated that since 1990, even as IQ scores have risen, creative thinking scores have significantly decreased, and the decrease for children in the kindergartners through to third graders group was in fact the most significant. The TTCT measures specific characteristics of creativity: fluency, originality, elaboration, expressiveness of titles, resistance to premature closure, and 13 creative personality traits. The results from the study specifically showed a decrease in ability to produce and elaborate ideas, to think reflectively, and that people have become less emotionally expressive, less imaginative, and less open to new experiences. Further, the results showed that younger children were becoming less capable of the critical thinking processes of synthesis and organisation.

These results and perspectives reflect a need to promote an education approach that is more geared towards creativity. This has been recognised by several countries and is reflective of initiatives that endeavour to make creativity an essential element of schools’ curriculums. A comparative study of 19 countries showed that “a number of countries are placing a new emphasis on the importance of developing creativity within the curriculum” (Sharp & Metais, 2000, p. 3). Although there is a diversity of approaches in different countries, only in some countries does one see national debates that allow for the emergence of new education paradigms that can foster creativity (Taddei & Sasco, 2010). Australia’s education curriculum “recognises that critical and creative thinking are fundamental to becoming successful learners” (Australian Curriculum, Assessment and Reporting Authority, 2012). Singapore recognises the importance of “creativity and flexible skills to maintain Singapore’s international competitiveness in the global economy” (Tan & Gopinathan, 2000, p. 5), Hong Kong emphasises that strengthening and developing creativity is the way to achieve a quality education and meet the challenges of the 21st century (Leong, 2010), the United Kingdom promotes creativity as part of its national curriculum (NACCCE, 1999), one of Germany’s curriculum objectives is the development of children’s creative ability (Sharp & Metais, 2000) and the Norwegian curriculum includes creative activities, not only in the arts, but in all subjects which can be related to some knowledge about the arts and cultural expression (EACEA, 2008).

Initiatives that promote creative learning for children and allow students to flourish artistically and creatively during their early years provide a foundation for creative thinking which assists in the later development of creative intellect (Stables, 1998). The views of Sir Ken Robinson, an internationally recognised leader in the development of creativity, are important to reference here. Robinson, in an interview with Azzam (2009), states that creativity is the crucial 21st century skill, and that our creative achievements are essential
because of the extraordinary insights, breakthroughs, and discipline they have brought society (Azzam, 2009, p. 22). Robinson believes that the incredible advancement in technology is transforming how people work, think, and connect, and this advancement is also transforming our cultural values (Azzam, 2009, p. 23). Given that creativity is such a prized quality, it is surprising that more practical strategies are not promoted for developing creativity in an educational setting. As Lin (2011) points out, there is little consistency on insights and strategies concerning different aspects of fostering creativity. If there were proven strategies and educational programs to foster creativity, then this should be something for different educational environments to consider.

Amidst a wealth of contemporary writing on music and creativity, the role and potential of engaging children with cultural diversity seems to be underrepresented. This is surprising, as creativity is known to arise from bringing together known and unknown elements. Using a series of workshops designed to further understanding of this phenomenon as a basis, this thesis explores the possible relationships between world music workshops and creativity.

The role of arts education in creativity

In considering the importance of promoting creative learning, the role of the arts—and for the purpose of this research, particularly music—needs to be understood. New perspectives and reviews of creativity research in music, visual arts, drama, and dance are generating renewed dialogue on the significance and role of creativity in arts education with young children (Burnard, 2007; Gallagher, 2007; Lindström, 2007). The arts can emphasise how different phenomena relate to each other (Bamford, 2006), which is also another way of exploring the association of ideas. Holistic thinking and synthesis of ideas are fundamental to arts learning, and it is important to note that these are also characteristics required for creativity. Arts-rich education encourages critical thinking, problem-solving, and reflection. It can help build confidence and contribute to positive self-identity and perceptions (Bamford, 2006). While there are opportunities and benefits from incorporating the arts into the broader education curricula, there are specific benefits from music education in particular. These benefits of learning music have been identified and promoted by numerous studies. Music educators have long recognised the substantial contribution that music education can make to the development of unique aesthetic and intellectual abilities, as well as to the acquisition of relevant life skills such as decision-making, goal setting, critical thinking, self-directed learning, interpersonal skills, and self-confidence (Barrett, 2003a; Burton, Horowitz, & Abeles, 2000; Eisner, 1998; Fiske, 2000; Greene, 1995; Hunter, 2005; Schellenberg, 2004).
While many perceive music education as an essential part of a child’s development and education, these philosophical beliefs have not necessarily translated into the implementation of music as a core component of education curricula worldwide. Global monitoring of educational standards has tended to focus on achievement in mathematics, literacy, and scientific thinking (Bamford, 2006, p. 23) and as a consequence the arts and music are often given less importance, and less time is devoted to these subjects in the core educational curricula in many countries (Barton, Baguley, & MacDonald, 2013). For example, in Singapore, where “performance in competitive examinations is still a major determinant of educational and social mobility” (Tan & Gopinathan, 2000, p. 9), there have been many schools that diminish the time dedicated to the artistic subjects, as it is often harder to achieve perfect scores in these subjects.

This lack of focus on the arts and music education is one factor that may be detrimental to the development of creative learning and creativity skills. While the previously mentioned benefits are important to consider, the pertinent question that I want to explore in this research is the impact of different music education methods and music genres on creativity. There have been a few studies that consider the effect of music education on creativity (Auh, 2000; Barbot & Lubart, 2012; Burnard & Younker, 2004; Hamann, Bourassa, & Aderman, 1991; Wolff, 1979) and they have shown that, in general, there is indeed a positive contribution to creativity from musical studies. However, it is interesting that very few studies actually look at the contribution music can make to general creativity, as distinct from musical creativity. This research aims to consider not only musical creativity, but also its connection to general creativity.

In this context, it is useful to consider the concept of cognitive transfer. The topic of positive transfer from the arts to other subject domains is a controversial one (Baer & Kaufman, 2005). While there are numerous studies in this area, there have been mixed results and explanations when it comes to demonstrating this phenomenon. Can improvements in musical creativity translate into improvements in overall general creativity? In exploring this question, we need to consider the following: Runco (2004) discusses how creativity is expressed in different ways in different domains, so it is important to understand the specific characteristics that contribute to musical creativity, as distinct from creativity in other domains (p. 678). Musical creativity is also a complex topic in its own right. Are we considering the creative thought processes that happen as part of the improvisation or composition activity, or do we consider the final musical output? Hallam (2010) cites a few studies that investigate the “effect music learning has on general creativity, but makes the point that less attention has been focused on creativity development than on other types of
non-musical benefits” (p. 278). This presents an opportunity for my research to contribute to further knowledge in this area.

In all this analysis, the method used to assess creativity is crucial. How does one measure this complex, multi-faceted phenomenon? In the context of different cultural settings and when undertaking research that addresses different musical education styles and methods, it needs to be clarified which aspects of creativity and musical creativity can be analysed. While there are some acknowledged and well-tried methods for analysing creativity such as the Torrance Tests of Creative Thinking (1966, 1974, 1987, 2007a, 2007b) (abbreviated to TTCT), and Webster's Measure of Creative Thinking in Music II (2002) (abbreviated to MCTM–II) for musical creativity, it needs to be determined what are the most appropriate approaches to assess the possible cognitive, emotional, and social effects of participating in music learning. My study utilises the aforementioned tests, while at the same time using an ethnographic approach, including participant observation and interviews to build a more holistic picture of children’s creativity.

One study, by Altenmüller, Gruhn, Parlitz, and Kahrs (1997), highlights another consideration for the benefits of music education discussion, in that it is the style and mode of music education, not just the content, that can have an impact on brain development and, hence, potential enhanced creativity. Altenmüller et al.’s (1997) study looked at the difference in student brain activity from different modes of music learning and showed that a “global, holistic and cognitive strategy” (p. 33) of music teaching would generate different brain development to that of a more teacher-directed, didactic strategy. This supports the concept that the development of creative skills is likely to be dependent on the type of musical interaction experienced by the student. Koutsoupidou and Hargreaves (2009) also promoted this view in their study of six-year-olds, which compared those who had opportunities for musical improvisation with those whose music lessons were didactic. The benefits of the improvisational process were evident in enhanced creativity of the students. Limb and Braun (2008) also showed a relationship between musical improvisation and creativity, with their study applying a neuroscientific approach. The results from all of these studies lay the groundwork to further explore the effect on students resulting from a particular method of music instruction. How these different methods contribute to student’s creativity then is a question worthy of further investigation. My research aims to consider examples of various educational approaches to diverse musics, with a particular focus on improvisation, so that it enables young learners to participate and to experience different methods and styles of music learning.
Another argument for a greater emphasis on music education is the idea that positive affect or positive mood improves creative problem-solving, and it is important that my research explores this idea. Ashby, Isen, and Turken (1999) reviewed numerous studies that demonstrated this relationship, which stems from the knowledge that music can invoke strong, positive emotions and moods (Juslin & Sloboda, 2004) and also that motivation is important for creative thinking (Runco & Chand, 1995). Taking the influence of motivation a step further, we can consider one of the reasons that people become motivated—when they explore new ideas or concepts. Barbot, Besancon, and Lubart’s (2011) theory that “novelty-induced motivation influences the nature and strength of individuals’ engagement in creative activity” (p. 61) perhaps warrants further research in the context of music education practices. This could be achieved by introducing innovative musical education practices and novel musics. This characteristic will also be explored in this study.

**World music education and cultural considerations**

Traditionally, arts research with children has focused on behaviours and drawn on developmental psychology, with little regard for social and cultural processes (Pramling & Garvis, 2013). Researchers acknowledging cultural and social processes are now more supportive of an inclusive and integrative framework for the study of contemporary childhood influenced by context and popular culture (Young, 2009). Campbell (2004) supports this point with her view that while musical diversity is valued in principle, “curricular infusion of musical expression of the world is yet in its infancy” (p. 13). Should not our musical education practices reflect the changing nature of musical expression, with its influences from the modern, global society in the 21st century? As there is now greater accessibility to different musics, there is greater opportunity for musical change to traditional styles and instruments, which is due to a large degree on the impact of globalisation on music.

A powerful example of the globalisation of music can be found in the French composer Debussy’s compositions. He was strongly influenced by Javanese gamelan music, in particular by its timbre of percussive instruments, its layered texture which was free from the European rules of counterpoint, its forms which were built on circular or symmetrical patterns, and the use of non-diatonic scales (Tamagawa, 1988, pp. 32–35). Accepting and celebrating diversity can be one way to foster creative thinking because considering different points of view, or putting seemingly different things together, helps people with solving problems. Is this something that learning different world musics, challenging our existing musical knowledge, and thereby considering different points of view can contribute to? To determine the answer to this question, I am focusing my research on a culturally diverse spectrum of musics. The
aim is to not only understand music education’s contribution to creativity, but specifically the potential contribution of world music education.

From Pestalozzi (1801) (as cited in Brühlmeier, 2010) to Mason (1864) (as cited in Volk, 2004), Merriam (1964), and Barrett (2010), experts have argued that the knowledge of a particular culture’s music is a learned concept, which starts at an early age; the learning is shaped according to each culture’s ideals and values. If we take this perspective—that people become enculturated to specific musical traditions at an early age—then an interesting question can be posed: Can children’s musical concepts and structures (their musical schemata), like their preferences, be altered with concentrated exposure to music of another culture? This question has held a fascination for me after seeing for myself the different ways musicians learn in a variety of cultures and the unique, specific styles of musical composition and performances demonstrated in these various cultural environments. Anderson and Campbell (2011) refer to a similar concept when they talk about students developing “greater musical flexibility and polymusicality” (p. 3), which can contribute to a broader range of styles reflected in their musical creativity. These authors highlight the importance of early exposure to a large array of musical sounds for this polymusicality to develop.

As this research will involve different musical cultures and measures of creativity, it is arguably important that it must also consider the impact of socio-cultural influences on creativity. Lubart (1990) discusses the cultural impact on creativity and emphasises “how deeply creativity is bound to cultural context” (p. 55). Rudowicz (2003) refers to the systems view of creativity, first promoted by Csikszentmihályi (1999), and states that “creativity is a product of an interaction of individual, social system and culture” (p. 274). Learning different world musics will raise issues about understanding the cultures from which these musics have evolved, and also how creativity is demonstrated and measured in these cultures. It is reasonable to assume that other, non-Western cultures may have different interpretations of the meaning of creativity, and this would then naturally be reflected in their musical styles and musical education practices.

An important study by Leung, Maddux, Galinsky, & Chiu (2008) discusses the impact of multicultural experiences on enhancing creativity. They found indications that extensiveness of multicultural experiences was positively related to creative performance. Further research by Leung and Chiu (2010) develops the idea that people with “extensive experiences in both cultures may be able to retrieve both ideas spontaneously, cognitively place them in juxtaposition, and through creative insights integrate the two ideas into a novel idea” (p.
A world music education program may be able to provide just this type of experience for children.

In exploring the types of world music education programs and methods in different educational settings and countries, I found that this is an area still very much in a nascent form. A number of leading music educationalists have promoted the inclusion of a broader musical curriculum for many countries (Campbell, 2004; Schippers, 2010; Swanwick, 1988; Volk, 2004). But all of them have also discussed how the emphasis on cultural diversity in music education policy has not translated into a wealth of actual world music programs. Irrespective of the benefits it may bring to enhancing creativity, in increasingly culturally-diverse, global societies, the idea of developing children’s musicality through exposure to understanding new musical sounds, styles, techniques, and structures is an important one. Cultural diversity in music education has the potential to advance “musical enjoyment, self-growth, creativity and inter-cultural understanding”, according to Elliott (1998, p. 15). The discipline of teaching music across cultures is still in early stages of development, and there is a dearth of research to ascertain the success and outcomes of specific world music programs and the pros and cons of various methodologies (Abril, 2006; Cain, 2011; Szego, 2002).

In this thesis, I will include a few carefully selected forms of world music that could encourage children to engage with different musical cultures, motivate them to look at music in new ways to awaken their imaginations to new possibilities and new associations. For its improvisational characteristics, its complex rhythmical cycles, and different instrument timbres (Farrell, 1990), Hindustani classical music will be explored. Javanese gamelan with its different scale tunings, colotomic timings, and its aural, group learning process (Brinner, 1995) can also bring another dimension to music learning for students. West African djembe also provides a good medium, with its complex and diverse rhythms and the style of transmission, which is learned in a group environment through immersion (O. S. Nzewi, 2010). In African percussion music a holistic approach is usually taken, where the student progresses to the composition of new pieces without being formally taught, but allowing for development out of the creative element of performance (Campbell, 1990, p. 44). All these musics have also been considered for their accessibility to young, novice learners, as children can relatively easily begin to play these instruments within a short time period.

One aspect I would like to highlight in the context of this study is imagination. This is a common factor in any discussion about music and about creativity, as they both rely to some extent on imagination. Kivy (1997) states that listening to music without imagination “would be impossible” (p. 47). Hargreaves (2012) ranks the importance of imagination very highly in
contributing to the whole concept of creativity. Imagination is required in the reorganisation of known ideas (Welch, 1946) and when these known ideas are combined with new ones, the creator then may arrive at something completely different, for this process constitutes a leap of knowledge—it becomes a process of creation. Is this essentially the same for a process of reorganisation of known musical ideas when combined with the new? My argument is that learning a new world music may stimulate imaginations and allow this to reorganisation and combination to occur.

My position as researcher

As all research—and particularly research involving different cultures—is coloured by the background of the researcher, it may be useful to give some insight into my own musical history and how it may impact on this research:

We all bring to our research worldviews or paradigms that influence how we design and conduct our projects . . .. They contain a basic set of beliefs or assumptions that guide our inquiries. They are a philosophy deeply rooted in our personal experiences, our culture, and our history . . . they may be shaped by new experiences and new thoughts. (Creswell & Plano Clark, 2007, p. 21)

Despite great interest in, considerable exposure to, and significant influence of other cultures on my musical self, I predominantly have a Western background and education. I have been involved with music from an early age, learning both classical piano and violin, in a traditional Western educational setting. While I learned these instruments through private lessons, I also participated in a variety of ensembles and musical groups, including orchestras, chamber groups, and choirs. This is important to remember in the context of this study, as my observations, perspectives, and analyses of the children’s creativity are inevitably shaped by my experiences and culture to some extent.

In addition to the classical training, I also became interested in musical theatre and jazz, and I had the experience of being musical director of a number of shows. At this time, I also began teaching my own students in piano, voice, and theory. Although my involvement with music was significant throughout my school and tertiary musical education, I had limited exposure to music from other cultures. The exceptions to this were performing many Kodaly songs with our school choir whilst in Hungary, and also a short introduction to Hindustani music during an ethnomusicology course at university. These last two experiences made a lasting impression on me, broadening my musical horizons and sparking an interest to discover more of other musical cultures. Since then, I have lived, worked, and travelled in many
countries and acquired knowledge and an appreciation for many other world musical traditions. This has included studying Argentinian tango, Andalusian flamenco, Cuban salsa, Brazilian samba, and Hindustani vocal music. These musical experiences have helped me to incorporate a broader spectrum of philosophical approaches and techniques into my teaching practice. An understanding of improvisation techniques (both aural and notated learning), different musical structures, and musical meanings have inspired me to communicate this knowledge to my students.

In addition to this rich musical background, I also hold a degree in mathematics. This has made me aware how considering a mathematical problem and solution often requires a creative approach, as there are often multiple ways to use combinations of relevant formulae to find a solution for a problem. It often requires the confidence to explore a variety of strategies before arriving at a solution. For a great part of my career, I have worked in financial risk management, where I employed these skills of analysis and strategic and creative thinking to develop solutions for global corporations in many countries. My interest in creativity has not only come from the musical perspective, then, but from a more “scientific” perspective, although I have often found that characteristics of creative thinking are similar across these different fields. My experience in diverse fields of study and practice and in different environments has enabled me to view creativity in a holistic way. This has been fundamental to the way I have approached this study. My life-long curiosity to explore new knowledge and relate it to different fields of study and environments has been one of the main inspirations for this research. I believe that these creative personality traits and behaviours allow me to have a greater insight into new ways of thinking. Many theories I propose in this research have emanated from ideas and experiences that have evolved over many years.

In short, this study is based on the idea that multicultural experiences can enhance creativity, an idea supported by the concept that “creativity is fundamental to cultural diversity, which is itself conducive to creativity” (UNESCO Report, 2009, p. 161). Therefore, a world music education program would be well positioned to build on this concept. The skill of polymusicality can help children to broaden their musical horizons, so a world music program may be able to assist them in viewing their musical knowledge in different ways and associate musical knowledge across different contexts. Pedagogies that favour discovery methods rather than didactic instruction encourage risk-taking and flexibility, which are important in learning environments designed to promote creativity and innovative thinking. A world music program that uses these pedagogies could be beneficial for children's creativity. As there are socio-cultural influences on creativity, a world music program can
provide the context to determine how these influences impact on children's creativity. Introducing new music education practices and new musics through a world music program may inspire children to be motivated and hence contribute to their creativity. The particular focus on improvisation in many world musics provides an opportunity to explore how children's musical creativity is developed through this skill in a world music program.

1.2. Research Questions

The various experiences and ideas described in the previous section have been the impetus for this research, triggering diverse areas of philosophical thought, and drawing together elements from creativity, ethnomusicology, and music education. As each of these areas are extensive in their own right, it is imperative to focus on specific areas and investigate only select questions. However, it is also important to elucidate the broader context of this study, to enable it to bring together diverse perspectives and create new knowledge as it is seen through different lenses. With its approach of spanning diverse fields, I hope the research has the potential to provide novel and creative ways of associating ideas. Therefore, this study will address the following question:

How can the design, implementation, and evaluation of a pilot program of world music workshops inform a framework for understanding its potential impact on children's creativity?

Three sub-questions scaffold the enquiry on the following pages:

1. What are current understandings of key factors that influence children's creativity, especially in relation to music?

2. What aspects of world music and world music pedagogy could be incorporated in workshops specifically aimed at stimulating children's creativity?

3. How can improvement in children's musical and general creativity after participating in world music workshops be measured in terms of fluency, flexibility, and originality using the established frameworks of the Torrance Tests of Creative Thinking (2007a, 2007b) and Webster's Measure of Musical Creative Thinking in Music II (2002)?
1.3. Research Design

Methodology

As creativity is a multi-faceted phenomenon, with different perspectives of what the expression truly means, it is logical that a multi-faceted approach is most relevant for any research on this topic. Similarly, how people perceive, experience, and learn music is also a multi-faceted phenomenon. Using a research philosophy that enables information and outcomes to be viewed through different lenses provides an opportunity to bring together elements that may not usually be associated. This is also one of the main reasons that this research study adopts a combination of qualitative and quantitative methodologies. This approach is often referred to as a mixed methods approach. As defined by Cresswell and Plano Clark (2007), mixed method research is:

A methodology that involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative approaches in many phases of the research process. As a method, it focuses on collecting, analysing and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone. (p. 5)

Johnson and Onwuegbuzie (2004) say that the goal of mixed methods research is to “draw from the strengths and minimize the weaknesses” of both quantitative and qualitative research studies (p. 14). A mixed methods approach “allows a researcher to measure trends, prevalences and outcomes and at the same time examine meaning, context and process” (Cresswell & Plano Clark, 2007, p. 175). In this way, it may enable a deeper and more holistic analysis of the complex topics of creativity and world music education.

The qualitative component of this study can be broadly classified as ethnographic action-research. Neumann (1996) describes this approach and how ethnography is not just about collecting stories of other cultures, but how in the process it becomes about further understanding and defining ourselves. While there are many styles of ethnographic research, Bateson’s (1972) work in this area is important to note, as it focused on patterns, interactions, and communications and has relevance in the fields of psychology and sociology. Both of these styles of ethnography are useful to consider in the context of this study, as the aim is to understand the patterns, interactions, and communications of the group of children in the pilot study and how this influences their creativity. Also, by understanding the
sociocultural influences in this pedagogical environment and also the influences from the world music traditions, it may be possible to develop an understanding of children’s creative behaviour and, indeed, my own creative teaching processes. In some part, the research takes an auto-ethnographic style, as I observe children’s behaviour and cognitive processes and comment on my part in the process. It also draws on elements of action research (Bradbury, 2015), as I take a pragmatic and active part in designing, implementing, and assessing the world music workshops. The children and the other world music teachers become co-creators, to some extent, in the findings from this research, which is strongly experiential, reflective, and develops iteratively as the workshops progress.

As the research approach includes aspects from the fields of music education, psychology of creativity, and ethnomusicology, it is important to understand some of the methodologies for inquiry in these different fields of knowledge. It was important to include a number of different ways for investigation in recognition of the multifaceted nature of both creativity and music, and also of the variety of ways that children absorb and acquire new knowledge. There are three approaches I would like to highlight here: interpretivist, participatory, and arts-based.

I would identify my approach to the complexities of my topic as interpretivist; a view where researchers believe that it is people who are fundamental to interpreting and understanding the world. It is research that involves inductive reasoning and is part of an ethnographic research approach (O’Reilly, 2009). Charmaz (2000) expresses the importance of an interpretivist approach in research, stating that “data do not provide a window on reality. Rather the discovered reality arises from the interactive process and its temporal, cultural and structural contexts. Researchers and subjects frame that interaction and confer meaning upon it” (pp. 523–524). The research outcomes from this study have been determined from data that has been drawn from a particular context and time and from a specific group of participants. It is natural to expect that the analysis and findings from this study are then contingent upon the temporal, cultural, and structural parameters that were created for the study. Ethnographic and interpretative approaches rely to a great extent on naturalistic methods such as interviews, observation, and analysis of texts. For this reason, it is important to understand that the outcomes from this research will be contingent and contextual (Denzin & Lincoln, 2000), as they may be dependent upon the context in which they are observed, the different geographies, the different musics learned, and the participants’ sociocultural backgrounds. As such, interpretivism and constructivism are related approaches and can be used to investigate knowledge and make sense of phenomenon.
Schwandt (1994) explains that constructivists are of the view that “what we take to be objective knowledge and truth is the result of perspective” and that they “emphasise the instrumental and practical function of theory construction” (p. 125). He goes on to say that as humans, “we invent concepts, models and schemes to make sense of experience” (p. 125). I refer to these concepts as, in this research, I am trying to make sense of the experience of students of world music and how they conceptualise their musicality. I aim to understand if there are models or schemes that they employ which describe the students’ processes of musical creativity.

An interpretivist view is also pluralistic and pragmatic and this is also one of the goals of this research study. By including a number of views from students and teachers from different backgrounds and geographies, multiple perspectives on the research questions can be obtained. I also want to highlight that the research is intended to be pragmatic, in that one of the main focuses is on the consequences of the research. The goal here is to show that an appropriately designed program of world music education is likely to enhance children's creativity, and that ultimately this program can be implemented as a practical and workable offering for students who aspire to improve their creativity.

Participatory research involves a research approach that is “collaborative, with the participants serving as active members of the research team” (Cresswell & Plano Clark, 2007, p. 23). Employing this participant observation approach raises questions about the impact of the researcher, his or her views and if, in fact, the study is conducted from a biased perspective. In my role as a teacher, I am a participant in this research, and so I have contributed to the outcome of the research in some way. Eisner (1991) describes the issue effectively when he states that the inquirer, as connoisseur-turned-critic, reconstructs or transforms his or her perceptions into some representational form that “illuminates, interprets, and appraises the qualities that have been experienced” (p. 86). As I designed, participated, and often co-facilitated the world music education workshops, the way that they are delivered was very dependent on me and on my skills as a facilitator and a musician. Thus, an important design factor for this research is that my philosophical approach, my background and experiences, my participation in the case studies, and interaction with the children could all significantly influence the study and how the findings are shaped. The observations that I made during the course of the world music workshops, and my own views about how the objectives of the world music workshops were realised, has influenced and altered my reporting and analyses of the research outcomes. This situation is expected when taking an ethnographic approach to research, and can add depth to the research findings. The other world music teachers also contributed to participatory research for this study. The
workshops were designed collaboratively with each world music teacher for their specific sessions, and then each teacher provided feedback about how they viewed the impact of each workshop on the children. Following a cyclic action research approach, this feedback and reflection helped to influence the plans and activities for subsequent workshops. I also had discussions with each of the world music teachers at the end of the pilot to elicit their views on the children's displays of creativity.

While interpretivist, ethnographic, action research approaches dominate in this research, there is also a component that takes more of a positivist view. This is a key feature of the mixed methods style, where different paradigms and methods are integrated. Studies within the field of music psychology, and psychology at large, often employ a positivist view. Positivism—the opposite perspective to the interpretivist approach—considers a singular reality, where researchers reject or fail hypotheses and demonstrate an unbiased and impartial stance (Cresswell & Plano Clark, 2007, p. 24). Certain aspects of my research involve testing hypotheses, and use particular tests such as Webster's MCTM–II (2002) and Torrance TTCT–Figural and Verbal (2007a, 2007b), to prove or disprove these hypotheses. These tests use a standard set of tasks to determine levels of musical creativity and general creativity, respectively. While there may be some elements of subjectivity in the scoring of both these tests, the results are quantitative and report outcomes against a standard set of criteria.

Another final element in my research methodology is the use of arts-based methods: Arts-based research can be defined as the systematic use of the artistic process—the actual making of artistic expressions in all of the different forms of the arts—as a primary way of understanding and examining experience by both researchers and the people that they involve in their studies (McNiff, 2008). Arts-based methods of research with children are not new, as they have been used by noted theorists such as Bruner (1990), Gardner (1991) and Vygotsky (1978). However, Eisner (1991), the pioneer of art-based educational research, introduced the concept of using resources such as visual images, music and dance, poetry, and literature as data sources. These resources provide a way for children to express themselves in a way that cannot be revealed through solely text-based methods. McArdle and Wright (2014) state this convincingly in saying "when young children create art, they can be expressing astonishing conceptual understanding and imagination, well beyond what they can communicate through language" (p. 22). Barton (2014) talks about how this expression of knowledge and feelings through arts practice is "natural and innate" (p. 67) for young children, as it is using media in which they are capable and also familiar with. McNiff (2008) also discusses how arts-based research makes use of "a larger spectrum of creative
intelligence and communications” (p. 30) rather than purely using more conventional research methods.

These perspectives on arts-based methods are particularly relevant for my research, as the pilot study involves children and their musical expressions. Children may often find difficulty in fully expressing themselves verbally during interviews, and so their musical and artistic expressions may provide extra insight or another perspective to understanding their creative processes. Barrett, Everett, and Smigiel (2012) refer to a growing body of research that uses art-based methodology, in particular visual methods. They highlight the fact that “visual methods facilitate communication with children” and are “powerful methodologies for listening to children” (p. 191). One of the research data methods used in this study has children drawing to describe their thoughts and perceptions of different musical examples. Furthermore, the children's musical expressions and improvisations during the workshops are used as an important source of data. Much of the analysis of these musical expressions has been done through participant observation, which has then later been enriched through the children's verbal interview responses. Individual and group creative behaviours were observable through the way the children approached, experienced, and produced their musical expressions. The arts-based methodology, therefore, assisted in providing a deep insight into children's creative thinking for this study.

One of the most dependable approaches to validating data from research such as those mentioned previously is mixed method triangulation (Creswell, Plano Clark, Gutmann, & Hanson, 2003). Mixed method triangulation allows for “different but complementary data on the same topic” (Morse, 1991, p. 122), to provide the best understanding of the research problem. For this research topic, it is important to draw on both a qualitative set and a quantitative set of data. The former comes from interviews, surveys, and participant observations, and the latter from results of the Webster MCTM–II (2002) and the Torrance TTCT (2007a, 2007b). By utilising these different types of data, it enables a comparison and a contrast of the different and multi-faceted data, with the aim of providing a deeper insight into the questions about musical and general creativity in children. However, using both qualitative and quantitative assessment techniques does mean that “it can be very challenging to converge the two sets of very different data and their results in a meaningful way” (Cresswell & Plano Clark, 2007, p. 67). Johnson and Onwuegbuzie (2004) also discuss how there can be difficulties in using different assessment methods when interpreting conflicting results. These factors will be considered in Chapter 7, when discussing the interpretation of the outcomes from the word music education pilot study.
I will refer to and explore three key concepts throughout this research: *general creativity, musical creativity* and *world music*. In previous research, discussions, and practice, these have been approached from a multitude of different perspectives. It is not my ambition to arrive at conclusive definitions of any of these concepts, but rather to shed further light on them by presenting different perspectives from the literature in Chapters 2–4, and proposing some new insights in Chapter 7. However, at this stage, it is important to understand how this research will approach these very broad topics by highlighting a few key ideas without offering a definitive definition of any of these elusive concepts.

*Creativity*—The Oxford Dictionary (2014) defines creativity as "the use of imagination or original ideas to create something; inventiveness" (p. 1943). This is a very simple definition, but it involves the elements of imagination and originality, both of which are key foci in this study. I have chosen to focus particularly on the creative process in this research, rather than the output or "creative product". As part of understanding the children's creative processes, I also consider the impact of personality and environment on their creativity.

*Musical creativity*—Odena (2012) presents the idea that musical creativity may be explained as "the development of a musical product that is novel for the individual and useful for the situated musical practice" (p. 203). This definition is concise but it emphasises the output from the creative process. Similarly, with creativity expressed in the musical domain, I have chosen to explore children's creative musical processes, rather than only assess their musical products. The influences on their creative musical processes are important to this exploration. In this pilot program, any demonstrations of musical creativity by the children were assessed in terms of their validity and usefulness for the context from which they were produced; the expectation was not for the children to create improvisations such as a master musician may do in the course of a performance, but ones that suited their level of understanding and that related to the activities in the workshops.

*World music*—Campbell (1994) describes world music as usually referring to musical practice "outside the Western classical tradition" (p. 23). However, as Schippers (2010) explains, music becomes influenced by different environments, technologies, and peoples and, therefore, world music can be defined as "the phenomenon of musical concepts, repertoires, genres, styles, and instruments travelling, establishing themselves or mixing in new cultural environments" (p. 27). I have considered both these definitions in this study. The "world musics" that the children explored in the workshops are indeed outside the Western classical tradition, but they have been influenced by the aforementioned factors and,
to some extent, have been altered to adjust for the environment, teaching style and requirements of the pilot program.

**Overview of case studies**

The use of case studies is a prominent feature in this research design. They were essential in this research, as the practical experience was critical in understanding the possible advantages of a novel approach to music education. Stake (2000) discusses the use of case studies as being of "value for refining theory and suggesting complexities for further investigation, as well as helping to establish the limits of generalisability" (p. 448).

There were three case studies in this research that comprised the pilot program, used to determine if the world music education workshops could provide an environment for children's creativity to develop. This pilot program was conducted at Queensland Conservatorium Griffith University in Brisbane, Australia, and involved 16 children as participants, divided into two classes, one each for younger and older children. As there were three styles of world music used in the pilot—Hindustani tabla, Javanese gamelan and West African djembe—there were three world music teachers who were involved in the workshops, joined by myself. The children participated in 12 world music workshops, each an hour and a half duration, over a period of four months, yielding a total of 18 hours of exposure to world music genres.

The pilot program included surveys and semi-structured interviews with all the child participants and also with the selected world music teachers, to understand their role and influence on children's creativity. A semi-structured interview approach was taken in all the interviews, to allow for new ideas to emerge during the course of the discussion, while still adhering to the general topic framework (Wengraf, 2001). The design sessions with each of the world music teachers prior to the delivery of the world music workshops were also important to the eventual flow and material used in the workshops, so the data from these discussions also formed part of the study. As I was designing and co-facilitating the world music workshop program, participant observation was also one of the methods used to collect and assess information. The children also participated in pre- and post-workshop creativity tests using Webster’s MCTM–II (2002) and Torrance TTCT–Figural and Verbal (2007a, 2007b). These tests are described in detail in Chapter 6.
Qualitative research methods

Data was collected for the pilot study in a variety of ways. The qualitative research and data methods used included surveys, interviews, and participant observations. The variety of interviews and survey data used in the study includes:

- A short survey and interview of approximately 10 minutes’ duration, conducted with each of the parents/carers at the pre and post-workshop interviews.
- A group interview/discussion with all of the world music teachers together, prior to the design of the workshop program.
- Participatory observation of the workshops over a 12-week period.
- Individual interviews with each of the world music teachers at the end of the pilot to discuss their thoughts about the various displays of creativity during the workshops.
- Interviews with each child after the children had completed their pre and post-workshop Webster MCTM–II (2002) testing. These interviews were on average approximately 15 minutes in duration.

The interviews were video recorded, as were the workshops, which helped facilitate the research process and allowed for use of a stimulated video recall methodology. It also provided material for much of the arts-based methods of data collection.

Data sets

Most of the children participating in the workshops were from cultural backgrounds other than mainstream Australian. I use the term “mainstream” in the context of this study to refer to and distinguish children who are Caucasian, from an Anglo-Saxon background, and with parents born in Australia. However, Henry and Kurzak (2013) note that according to the 2011 Census “26 per cent of Australians were born overseas, and an additional 20 per cent have either one or both parents born overseas. These percentages are among the highest in the developed world” (p. 4). This makes the culturally diverse background of the children in the study typical of the Australian population. It was a deliberate strategy in the promotion and recruitment activities to find children with a diverse set of backgrounds, as it would make the data analysis much richer and comparisons more insightful. However, as transpired during the interviews, all of the children were from a relatively high socio-economic background, with highly-educated parents. This is not representative of the Australian population at large, but quite representative of those engaging with formal music education (Davidson & Jordan, 2007, p. 731). As it was necessary to provide a fee to the world music teachers who participated in the pilot, there was a cost for each of the children to join the workshops. This
cost was $250 for the 12 workshops. This fee requirement for the pilot program would also have contributed to the participation of children from a higher socio-economic background. The children’s cultural and musical backgrounds are summarised in the following table. Their backgrounds in other world musics refer to any exposure they had to these musical traditions, rather than any formal learning experiences. Nick was the only child with a minimal world music education experience prior to the pilot.

Table 1.1: The participants

<table>
<thead>
<tr>
<th>Child</th>
<th>Cultural Background</th>
<th>Other World Musical Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tommy Dana</td>
<td>Hispanic</td>
<td>Latin American music</td>
</tr>
<tr>
<td>Francis, Michael</td>
<td>Mainstream Australian/Greek</td>
<td>None</td>
</tr>
<tr>
<td>Tristan</td>
<td>Sri Lankan</td>
<td>Sri Lankan, djembe and few other world musics</td>
</tr>
<tr>
<td>Roshan, Savi and</td>
<td>Mainstream Australian</td>
<td>Spanish classical guitar, Japanese children's songs</td>
</tr>
<tr>
<td>Rahul</td>
<td>Sri Lankan</td>
<td>None</td>
</tr>
<tr>
<td>Oliver, Isabel</td>
<td>Mainstream Australian but lived overseas</td>
<td></td>
</tr>
<tr>
<td>Naomi</td>
<td>Mainstream Australian</td>
<td>None</td>
</tr>
<tr>
<td>Nick</td>
<td>Father Malay, mother</td>
<td>Malay, Chinese, Indonesian music</td>
</tr>
<tr>
<td></td>
<td>mainstream Australian. Born in Singapore</td>
<td></td>
</tr>
<tr>
<td>Blvon</td>
<td>Sri Lankan</td>
<td>Sri Lankan music</td>
</tr>
<tr>
<td>Jaya</td>
<td>Sri Lankan, lived in Africa and Dubai</td>
<td>None</td>
</tr>
<tr>
<td>Paula</td>
<td>Mainstream Australian</td>
<td>None</td>
</tr>
<tr>
<td>Rebecca</td>
<td>Dutch</td>
<td>None</td>
</tr>
</tbody>
</table>

The 16 child participants in the world music workshops were divided into a younger group (ages 5–7) and an older group (ages 8–10), so that the workshops could be tailored to suit their potentially different learning styles and abilities. The following Table 1.2 and Table 1.3 show the groupings of the children who participated in the workshops and this study. All of the children have been given pseudonyms, which are used throughout this thesis to protect their anonymity.
Table 1.2: Younger Group (Ages 5 – 7)

<table>
<thead>
<tr>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Younger boy 1 (Tommy)</td>
<td>Younger girl 1 (Isabel)</td>
</tr>
<tr>
<td>Younger boy 2 (Nick)</td>
<td>Younger girl 2 (Naomi)</td>
</tr>
<tr>
<td>Younger boy 3 (Oliver)</td>
<td>Younger girl 3 (Dana)</td>
</tr>
<tr>
<td>Younger boy 4 (Bivon)</td>
<td></td>
</tr>
</tbody>
</table>

Table 1.3: Older Group (Ages 8 – 10)

<table>
<thead>
<tr>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older boy 1 (Roshan)</td>
<td>Older girl 1 (Jaya)</td>
</tr>
<tr>
<td>Older boy 2 (Savi)</td>
<td>Older girl 2 (Paula)</td>
</tr>
<tr>
<td>Older boy 3 (Francis)</td>
<td>Older girl 3 (Rebecca)</td>
</tr>
<tr>
<td>Older boy 4 (Michael)</td>
<td></td>
</tr>
<tr>
<td>Older boy 5 (Tristan)</td>
<td></td>
</tr>
<tr>
<td>Older boy 6 (Rahul)</td>
<td></td>
</tr>
</tbody>
</table>

The three world music teachers who facilitated the different workshops together with me were Dheeraj Shrestha, Julia Pope, and Nii Armah Boba.

Dheeraj Shrestha conducted the tabla sessions. Originally from Nepal but now based in Australia for many years, he is an internationally-renowned tabla performer and teacher. He focuses on expressing his creativity through innovative rhythmic improvisations and has worked with a wide variety of musical genres, from Hindustani classical through to Latin jazz. An experienced teacher, when teaching in workshops and private lessons he has the ability to break down some of the complex rhythms to facilitate the process for young learners. Dheeraj is also associated with the University of Queensland, Queensland University of Technology, and has taught world music ensemble at the Queensland Conservatorium Griffith University.

Julia Pope conducted the gamelan sessions. She is a qualified school music teacher with more than 20 years of teaching experience, and has a first class honours degree in ethnomusicology, in addition to an MA, and an MEd. She has studied gamelan at Sekolah Tinggi Seni Indonesia Surakarta, Java, for a number of semesters. Julia also has extensive performance experience with gamelan ensembles in Java, Gamelan Naga Mas, the Edinburgh Gamelan Ensemble in Scotland, and Gamelan Puspa Wresti in Brisbane. Julia currently co-teaches Queensland Conservatorium’s gamelan program for students.
Nii Armah Boba conducted the West African djembe sessions. He is an accomplished performer and teacher with experience in Australia and Africa, and is a certified Tam Tam Mandingue teacher, from Mamady Keita’s international school of West African drumming. Originally from Ghana, he has lived in Australia for the past 13 years. He has developed his profile as an accomplished singer, dancer, musician, and teacher within the tradition of the African musical arts and culture. Blending traditional and contemporary rhythms from Ghana in an energetic and exuberant style, he has worked with thousands of school, university, and college students through highly interactive drum and dance performances and workshops. Through his teaching, he aims to develop children’s creativity, self-confidence, individuality, collaboration, and communication skills and their understanding of the African musical arts and culture.

**Interviews**

The interviews with the children, parents, and world music teachers are an important part of the data collection in this study, and so the method used to conduct these interviews is also relevant. The interviews were semi-structured, beginning “with a pre-determined set of questions, but allowing some latitude in the breadth of relevance . . . establishing a core of issues to be covered, but at the same time leaving the sequence and relevances of the interviewee free to vary” (Freebody, 2006, p. 133). Semi-structured interviewing was important to give the children the freedom to comment on points that were not explicitly asked in the question. Sometimes their responses to a particular question were more relevant to another question, and it was important to allow them the space to do this—this provided a more comprehensive view of their approach to their music learning. The interview questions were also designed to be mostly “open” rather than “closed” questions to encourage the children to interact, and this sometimes resulted in a detailed descriptive response to a question which often correlated with other questions in the interview. The semi-structured nature of the interviews assisted with encouraging these responses.

There has been much development in child-centred and child-focused research approaches which emphasise the importance of the “expert testimony” that may come from considering children’s perspectives (Barrett et al., 2012; Ceci & Bruck, 1993; P. Thompson 2008a; Wright 2007). In particular, Barrett’s (2006) study of how and why children create their invented songs and Campbell’s (2010) seminal study of children’s use of music in their lives clearly show the powerful and insightful revelations about musical creativity that may come from conversations with children. I also understood that as the main focus of this study was to understand children’s creativity; it was essential that much of the data came directly from the
children themselves. In order to gain an insight into their creative processes and the influences on it, it was necessary to ask the children to describe their thoughts, feelings, and behaviours. While the interviews were supported by observation and quantitative data, they constituted a central component of this study. The extensive and rich body of data from these responses and discussions has been used as a main source in the analysis, and contributed strongly to the research outcomes of this study.

It is therefore important to discuss some aspects that may have influenced this interview data. While the interview data has provided some deep insights into the children’s creativity, there are some influences due to my interviewing approach and the children’s interaction with me that need to be acknowledged. Freebody (2006) makes the point that “the interactions that make up interviews are dynamic, not static, forms of social action: in each interview, all participants, including the interviewer, re-encounter and re-produce social order in and for the site of the interview itself” (p. 132). These points are reflected in the design of this study’s interview questions and the way the children interacted and responded during the interviews. For example, as the interview questions were designed to have a focus on the children’s involvement with improvisation and composition, I tried to elicit this information from the children through a number of questions. I asked questions such as:

- Do you sometimes make up your own music?
- When and where do you do this?
- How do you do it?

I sometimes rephrased a question or came back to this point during the discussion, if they had not given much information the first time. For example, if a child replied that they “didn’t know” if they made up their own music, I would ask the question in different ways to see if more information could be elicited. I might ask did they sometimes just “play around” on their musical instrument, or “how did they change something in their learned music and play it slightly differently”. I might ask them to elaborate further with “what ideas did you use to do this?” This could have influenced the children to respond in a more positive manner than was actually the case, as they comprehended that this was an important question and I wanted to have a response. Children are susceptible to influence from the interviewer and the question format in an interview (Hogan, 2005). Hogan (2005) refers to a study by Waterman, Blades, and Spencer (2002) that found the “use of ambiguous closed questions may lead to the interviewer misunderstanding what the child means to communicate” (p. 34). I was careful to avoid the use of closed questions in the interviews for this reason. Another influence on their interview responses could be attributed to their desire to please me by giving positive
responses, or answers that they thought I would like to hear. I already knew many of the children in the pilot study, as they were my existing students, so they may have been keen to respond with answers that I would like. However, this familiarity was also an asset in the interviews, as I already had an existing rapport with many of the children and so they felt comfortable in disclosing information to me. The interviews were all conducted individually and this was important to allow the children to present their own views and not those of other children in the group or of their parents.

In summary, the interview questions prompted the children (and also their parents, in a separate survey and interview) to discuss their involvement with music-making. The questions focused on their improvisation activities, their existing musical background, and their likes and dislikes in relation to listening, learning, and playing music. In the post-workshop interviews, questions were focused on determining if any of these aspects had changed for the children. The interview questions in Appendix A of this document detail the questions used to guide the discussions with the children participants and the world music teachers.

Ethics approval for the interviews and the tests was obtained from the Office of Research at Griffith University prior to the commencement of the case studies, and covering the time period to November 30, 2014. The details of the informed consent form and notification from Griffith University Human Research Ethics Committee are in Appendix D.

**Arts-based methods**

Barrett et al. (2012) discuss how the advent of child-focused research methods have included the development of “visual methods as a means to access children's perceptions” (p. 190), and refer to numerous studies using this approach, such as Moss (2008) and P. Thompson (2008b). One of the arts-based methods of data collection in this study was using the visual medium, and this complemented the written and verbal data obtained during the interviews. During the pre-workshop interviews, children heard excerpts from five diverse pieces of music, which included popular, classical, and different world music styles. They were asked whether they liked the sound of each musical excerpt, what they imagined as they listened to the music, and whether they had heard this type of music before. These questions were asked to determine the children’s existing enculturation and their musical preferences, prior to starting the workshops. The next part of the data collection involved an arts-based method, as it would be the best way to gain an insight into children’s perceptions and thoughts about the diverse musics. They were asked to choose the two musical excerpts that they liked the best. The children were then asked to draw a representational diagram or picture of their view of
the structure of each of these different musical excerpts, which should include a reference to rhythm, melody and harmony, and overall form. I wanted to investigate if the children would reveal anything about their conceptual structure and understanding of the different genres of music. I observed that most of the children found this an enjoyable activity and had many ideas that they wanted to use in their drawings. This research data proved to be very insightful and added an extra dimension to the data analysis, which is elaborated upon in Chapter 5.

Video-stimulated recall is increasingly used in educational research and professional development of teachers (Meijer, Beijaard, & Verloop, 2002). Reitano (2006) discusses how “it allows the teacher to relive an episode of teaching by providing, in retrospect, an accurate verbalised account of his/her thought processes” (p. 3). In a similar manner, students in the world music workshops were able to relive their moments of musical improvisation and reflect on the process they used, as they listened and recalled their performances. These recordings of musical learnings and improvisations by the children during the workshops were also an important part of the data for this study. The recordings add another arts-based research method to the mix of data, and were a valuable source to use in analysis of the children’s behaviours and creative processes. During the post-workshop interviews, each child was shown excerpts from the video recordings pertaining to times when they were involved in moments of improvisation during the different workshops. They were asked to comment on their thought process in these situations and what influenced their improvisations. The recordings provided a useful data source for review, reflection, and analysis of the workshop activities, and for observing the children’s creative behaviours and processes.

**Participant observation**

As discussed previously in this section, participant observation was an important part of the research methodology. It formed a large component of the research, as I was involved in the study in a multitude of ways. From the genesis of the concept, as the designer of the pilot program, the interviewer and assessor of the tests, the director of the other world music teachers, co-facilitator of the workshops, videographer and research analyst—I was able to investigate all facets of this study, but inevitably also co-determined the outcomes. Throughout the design, implementation and analysis of the pilot study, I made notes about my thoughts and observations. I reflected and commented upon these notes as part of the analysis and comparison of the different data sets, and this has contributed to the research outcomes. Chapter 5, which discusses the interpretation of the research data, includes many
comments and insights from my personal observation notes and reflections. The other world music teachers were also engaged as participant observers. Their suggestions and feedback about how to facilitate the workshops and their views on the children's displays of creativity were part of the full spectrum of data sources for the study—their contributions are recognised in the workshop lesson plans and in the world music teachers’ interview responses.

**Thematic analysis**

The various qualitative data sources that were used in this study required a structure to help direct the analysis of these data. Thematic analysis was a relevant method to provide this structure as it can identify, analyse, and report patterns (themes) within data (Braun & Clarke, 2006, p. 79). This method has provided an insight into the derivation of the main themes, assumptions, and the synthesis of the research data and outcomes. An overview of the thematic analysis process is described aptly by O'Reilly (2009):

> Data are coded into categories that suit the ethnographer's requirements, and these can be thematic or descriptive or both. How this is achieved involves a creative, reflexive and interpretive interaction between the researcher, the data, the literature, theoretical ideas that framed the research as well as those that emerge from close analysis of the data, and the researcher's feelings, emotions, experiences, and memory. (p. 34)

Braun and Clarke (2006) also point out that thematic analysis can take a variety of forms and is not dependent on any one research methodological approach (p. 81). They also discuss how it may involve a great amount of flexibility in determining the main themes and their prevalence in the research data (p. 83). These points are useful to consider in relation to this study. As discussed earlier in this section, there are a variety of different research approaches that were applied in this study, each with their own contributions to the analysis. It was important to be able to search for themes across both the qualitative and quantitative data and to be flexible in the choice of themes, to consider the existing literature, the raw data, and the influence of my philosophy and interpretation in the overall analysis. I reviewed a large number of different works whilst developing this thesis and these works have helped to inspire my thinking. I have therefore chosen to include in the thesis both the references, which include the authors’ works directly cited within the thesis and in a separate bibliography, the authors’ works that have helped shape my thinking on my topic at large.

The thematic analysis in this study mainly took an inductive approach. This meant that the themes identified were strongly linked to the data themselves and were analysed from a
grounded theory, "bottom-up" perspective (Patton, 1990). It was important to consider the responses to the interview questions and participant observations in all their detail and to determine if any patterns were revealed. However, in my analysis, I was also influenced by various themes I had identified in the existing literature—in this way there was also a "top-down" aspect to the analysis. Specific themes that were originally identified in the literature directed the focus of the analysis. There may have been other themes, not related to children's creativity, that were apparent in the data, but these were not the focus of this study.

My thematic analysis was in what Braun and Clarke (2006) describe as a latent style, which goes "beyond the semantic content of the data, and starts to identify or examine the underlying ideas, assumptions, and conceptualisations—and ideologies—that are theorized as shaping or informing the semantic content of the data" (p. 84). In much of the research data, it was useful to consider why the children responded to a particular question or how their behaviour and thoughts were influenced by their environment and background. This style is consistent with an interpretivist paradigm as described earlier.

The analysis to determine the main themes in the data followed six steps:

1. Review and familiarisation with data.
2. Initial coding, to identify key features.
3. Searching for themes, including collation of data relevant for each theme.
4. Reviewing the themes, comparing to literature themes, and determining strength of evidence for data themes.
5. Refining themes, including considering correlations and overlap between themes.
6. Analysis and writing, relating back to research questions, and choosing specific examples to highlight from the data. (based on Braun & Clarke, 2006, p. 87)

The complexity, and the amount of data and time for analysis of the data required that the process was recursive to ensure a thorough and perceptive analysis.

**Quantitative research methods: Creativity tests**

As this thesis sets out to draw on both a qualitative set and a quantitative set of data, well-established tests using a set of measurable criteria to assess creativity were employed in this research, in addition to the qualitative methods previously discussed. By utilising these different types of data, it enables a comparison and a contrast of the different and multifaceted data, with the aim of providing a deeper insight into the questions about musical and general creativity in children.
Two different creativity tests were used in this study. The first was Webster’s Measures of Creative Thinking in Music II (Webster, 2002), used to assess the children’s musical creativity and the second was the Torrance Tests of Creative Thinking—Figural and Verbal (2007a, 2007b), used to assess the children’s general creativity.

Webster’s MCTM–II (2002) analyses four elements of musical creativity: flexibility, fluency, originality, and syntax. These elements are defined (Webster, 1994) as:

- **Musical extensiveness**—the amount of clock time involved in the creative tasks.
- **Musical flexibility**—the extent to which the musical parameters of high/low (pitch), fast/slow (tempo), and loud/soft (dynamics) are manipulated.
- **Musical originality**—the extent to which the response is unusual or unique in musical terms and in the manner of performance.
- **Musical syntax**—the extent to which the response is inherently logical and makes musical sense. (p. 4)

Given that views of flexibility, fluency, originality, and syntax in music are inevitably subjective, any determination of these four elements is likely to substantially differ from any other. For this reason, it is important to choose an assessment method that provides a defined benchmark to assess these elements, all of which contribute to determining a view on musical creativity. While the scoring for Webster’s MCTM–II (2002) test involves both objective and subjective techniques, it has a long history of usage in musical creativity studies (Barrett, 2003b; Fung, 1997; Koutsoupidou & Hargreaves, 2009; Kratus, 1989) and has a high measure of reliability and validity (Swanner, 1985; Webster, 1983). The measure consists of a series of 10 scored tasks, divided into three parts: exploration, application, and synthesis. The tasks have a varying level of difficulty to express divergent behaviour and are conducted in the form of a game. The tasks are video recorded and then scoring is done by at least one evaluator aware of the scoring criteria. The scores can then be standardised against a set of normative tables, if required (Webster, 1989). In this study, there were three evaluators: Two other experienced music teachers and I independently scored each child’s test against the specified criteria. The three scores were compared and averaged to determine the final score for each child’s pre- and post-workshop test. More detail about the philosophy, implementation, and scoring criteria of the Webster MCTM–II (2002) is explained in Section 3.3 and in Section 6.1.

As described previously, the TTCT is the most widely used and proven method for assessing creativity. There is a both a TTCT–Figural and a TTCT–Verbal test and it was planned that both would be used in this study. The tests employ a psychometric approach to measuring...
creativity and allow evaluators to assess children’s creativity in an objective and scorable way. While there are various definitions and approaches to considering the concept of creativity, by choosing to assess it using the TTCT, this provides a clearly defined and quantitative assessment of various elements that are associated with creativity. The tests have a predictive ability over a very wide age range and over a long period of time (Cropley, 2001). Torrance (1987) suggested that the tests should be taken in a game-like and problem-solving manner to avoid the atmosphere of an exam, and that the administrators should encourage participants to have fun. The verbal test measures creativity by assessing against three criteria: fluency, flexibility, and originality (Torrance, 2007b), and the figural test measures creativity by assessing against the criteria of fluency, originality, elaboration, the abstractness of titles, resistance to premature closure, a checklist of creative strengths, and a creativity index. The different activities in each of the figural and verbal tests have elements which contribute to the scoring of each of these criteria. For example, activity two in the figural test asks children to add to a number of incomplete figures to make some interesting pictures, and activity three asks the children to do the same from a variety of pairs of straight line figures. Fluency is then measured by adding together the scores for each activity. The data from these tests is normalised against a set of benchmarks available per age group, so the analysis can be performed for different age groups (Torrance, 2007a). More detail about the philosophy, implementation, and scoring criteria of the Torrance TTCT (2007a, 2007b) is explained in Section 2.6 and in Section 6.2.

One of the other reasons that the Webster MCTM–II (2002) and Torrance TTCT (2007a, 2007b) were selected for this study was that there are some similarities in their approaches. As just described, both the Webster MCTM–II (2002) and Torrance TTCT–Verbal (2007b) measure against the criteria of fluency, flexibility, and originality, and the Torrance TTCT–Figural (2007a) also measures against fluency and originality. Webster's MCTM–II (2002) considers these criteria from the musical perspective, while the Torrance TTCT (2007a, 2007b) considers them in terms of general cognitive processes. These similarities have been identified and used for some interesting comparisons in the analysis of the quantitative data in Section 6.3.

Participants in the study were asked to undertake the Webster and Torrance tests before and after attending the workshops. These were conducted in the two weeks prior to the workshops and the two weeks following the workshops. Each child’s MCTM–II test was approximately 30 minutes, and each was conducted individually, with me acting as the administrator. The TTCT tests were conducted in a group, with the figural test lasting 30 minutes and the verbal test lasting 45 minutes. The implementation of the MCTM–II and
TTCT tests both followed the administrator’s guides and scoring methodology to ensure accuracy, transparency, and objectivity in the results. At the beginning of the TTCT, an introduction, as suggested in the administrator’s guide, was given to the group of children. Part of this introduction asks the children to use their imaginations and think of the “most interesting and unusual ideas they can” (Torrance, 2007a, p. 4). The figural test was taken first and then the children had a half hour break to allow them to relax and refresh, before commencing the verbal test. Two people, Dr. Susie Garvis, senior lecturer in Early Childhood Education at Griffith University, and I conducted the TTCT, so the scores could be monitored for reliability. As suggested in the administrator’s guide, the parents of the younger children were present during the TTCT, to assist the children with their writing requirements, as required. The TTCT were sent to Scholastic Testing Service, Inc. for scoring and a report was then received of each child’s results and their comparison against an age-based national average (these averages were calculated using U.S. data). This ensured that the complexity and knowledge required to assess the various components of the TTCT was achieved and that the results were scored as accurately and objectively as possible.

A detailed description, the administration procedures, and scoring guidelines for the Webster MCTM–II (2002) is in Appendix B, and a sample of the Torrance TTCT (2007b) is in Appendix C. Due to the limitations of the scope of this study, I was not able to administer creativity tests to a control group for the purpose of comparison with the children in this pilot study.

**Workshop design and implementation**

Three world music traditions were chosen for the pilot program; Hindustani tabla, Javanese gamelan, and West African djembe. A number of factors influenced the choice of these three world music traditions. It was deemed important to include a diverse spectrum of musical cultures in the pilot program and choose ones that had the potential for children to demonstrate their creativity. The use of improvisation was therefore an important component for all of the world music traditions to employ. Consideration was given to the availability of world music teachers, the facility in teaching and learning each instrument’s individual rhythms, melodies, structure and understanding their meanings, and the availability of appropriate instruments. With a pilot program designed for children aged 5–10 years, percussive instruments were chosen, as the children would be able to achieve a relative level of skill with these instruments in the available time period. Children are able to create music with a level of rhythmic complexity (Marsh, 2008, pp. 305–306) and the use of percussive instruments would provide an environment that could enable this rhythmic creativity to occur. For its improvisational characteristics, its complex rhythmical cycles and
rich instrument timbre, Hindustani percussion was explored. The Javanese gamelan—with its different scale tunings, colotomic timings, and its aural, group learning process—brought another dimension to music learning for students. The West African djembe also provided a good medium, with its complex and diverse rhythms and the holistic approach to these rhythms, which can result in increased focus in children.

This world music program was designed for children aged 5–10 years, as this is an age group where some evidence shows that creativity declines (Kim, 2011; Torrance, 1967) and so the program may provide the opportunity for a development of creative skills.

**Aims and objectives of the pilot program**

The following aims and objectives were developed for the workshops at large:

- Children culturally engage, emotionally connect with, and develop a level of understanding of the diverse musics included in the program.
- Facilitators use a variety of different models of musical transmission to enable learning in a holistic style, as opposed to elements based approaches. Models include aural learning, oral/story-telling, visual imagery, memorisation, imitation, composition, improvisational performance, vocal and instrumental playing, and group collaboration.
- The workshops involve musicians and instruments from the selection of diverse musical cultures in the program.
- The sessions build the children’s understanding of the cultural and social influences behind the diverse musics.
- The pedagogical approach creates a supportive, encouraging, exploratory, and creative group environment to enable children to develop their imaginations, develop skills and understanding and build self-confidence.
- The overall experience enhances a child’s overall development, in particular their thinking and creative imagination.

**Pedagogical approach**

As one of the objectives of the program was to facilitate creativity in children, the program was structured using some of the components of the creative process, as identified by Torrance (1972b). These components are:

- Fluency—generating many ideas.
- Flexibility—shifting perspective easily.
• Originality—conceiving of something new.
• Elaboration—building on other ideas.

All of these are supported by:

• Imagination—a form of playful analogical thinking that draws on previous experiences, but combines them in unusual ways, generating new patterns of meaning.
• Motivation—which generates reasons, incentives, enthusiasm, and interest in exploring, understanding, and participating in world music. To ensure that immersion in the diverse musics was not transmitted in a compartmentalised way, the program integrated musical examples from the proposed cultures within a structure built from these creativity components.

The chosen class size for each program session was 8–10 children, and the workshops were conducted via 12 weekly sessions over a period of 4 months, commencing in mid-July 2013. There were four sessions for each world music genre. The sessions were held at Queensland Conservatorium on Saturday afternoons. Participants were drawn from a variety of different cultural and musical backgrounds. A small fee was charged to attend the program, so that teacher, marketing, and venue costs could be covered. The musicians in these various musical cultures collaborated with me to facilitate the program. Through the program design and delivery, it was planned that the children would have a rich learning experience. Each of the different music workshops was facilitated by well-respected teachers of the various musical instruments, as described in the previous section.

I had a number of planning sessions with each of the world music teachers followed by a group discussion. I highlighted the main aims of the workshops with the other teachers, and there was agreement that the workshops should ultimately aim to promote creativity. We discussed how this would be implemented in the learning of their respective musical traditions. We emphasised the importance of the new way and approach to learning music employed in these world music traditions, which would show the children that music can be learned in a different way from what they had experienced before. This could enable them to see that there are multiple ways to perceive, approach, and perform music and, in fact, this also can be extended to their other activities. The teachers agreed that they needed to first assist students to “know” a piece of music, such as the sounds, rhythm, and structure. This allows it to become memorised and implicit knowledge. Elaboration can then follow from this knowledge. In this case, the teachers do not tell the students what to do. The student directs his/her learning through their experimentation. The teachers’ influence is still important for
children to explore different creative alternatives for a specific task and Swanwick (1988) also advocates this balance. He promotes the idea that music education should be “a dynamic relationship between encounter and instruction” (p. 135). We agreed that the activities in the workshops would not be planned to a great degree, but that we would be spontaneous in our teaching and react to class involvement as the workshops progressed.

Finally, promotional activities were undertaken to find appropriate participants for the program. Marketing material was developed to assist with this process. A promotional flyer and short video was produced to describe the workshops and their objectives to potential participants. The promotional flyer is included in Appendix F of this document, along with links to the website and video. During May and June 2013, I approached a number of Brisbane schools to generate awareness and interest in the program. I also discussed the program with my own music students. This led to the pool of participants as described in Tables 1.1 to 1.3.

Following is a summary of the lesson plans for each of the three different world musical traditions used in the pilot study.

**Tabla Lesson Plan:**

**Introduction (10 mins):**

Using music and narrative which combines the elements of rhythm and rhyme, imagery, and movement, children are encouraged to develop focus, clarity, enjoyment, relaxation, and even, if possible, “creative flow” states of mind. The introduction is designed to prepare for the succeeding session by relating the images, sounds, and narrative to the Hindustani culture.

**Tabla Introduction (15 mins)**

Introduce the instrument and the music. Explain the basics of playing and the different sounds produced in an interactive manner supplemented by demonstration.

**Tabla Basics (30 mins)**

Use a combination of vocal percussion (*bols*) and strokes on the tabla to introduce the different possible sounds made by the tabla. This is taught by demonstration, imitation, and repetition in an interactive manner with the children.

An initial *kaida* is learned first. A rhythmic seed or theme is introduced, which is then used as a basis for elaboration through improvisation. *Ke ke te te* is the first example that the children learn.
A *tala*, a rhythmic cycle of a certain number of beats, is introduced. The 16-beat *tintal* is the first example that the children learn.

**Tabla Story (15 mins)**

Through the telling of the folk tale, *The Rabbits and The Elephants*, accompanied by the world music teacher on tabla, children are encouraged to imagine and associate their thoughts and feelings about the story. They then explore their own musical improvisations for different aspects of the story.

**FollowingTabla Workshops**

Children reinforce their learning with repetition of the various *kaidas* and *talas* and different combinations of these basic patterns.

Further improvisations are explored using the basis of *kaidas* and *talas*, as are the improvisations with the folk tale. Another improvisation activity uses the piano and tabla together.

The specific *kaidas* and improvisations used in the four workshops are detailed in Appendix E.

**Gamelan Lesson Plan:**

**Introduction**

Using music and narrative which combines the elements of rhythm and rhyme, imagery, and movement, children are encouraged to develop focus, clarity, enjoyment, relaxation, and “creative flow” states of mind. The introduction is designed to complement the succeeding session by relating the images, sounds, and narrative to the Javanese culture.

**Gamelan Introduction (15 mins)**

The gamelan with all its different instruments is introduced—where it comes from, its background, its role in Javanese culture, and the etiquette of playing it. The basics of playing are explained and the different sounds produced are demonstrated in an interactive manner. All the instruments are played individually.

**Learning Gamelan First Piece (30 mins)**

A simple piece *Lancaran Ricik Ricik* is taught by demonstration, imitation, and repetition in an interactive manner with the children. The *balungan* is taught first on all the instruments. Then the other parts are added (*kenong, gong, peking, and bonang*). The children rotate to different instruments for various repetitions.

*Ricik Ricik* is notated as follows:
The emphasis on the 4th beat, the different layers of sound produced by the gamelan and playing collaboratively are highlighted as part of learning this piece.

**Javanese Story (15 mins)**

The story for the gamelan workshops is *Kancil and the Magic Gong*, which tells of the adventures of Kancil, the mouse deer. The children are encouraged to try different improvised elements relating to the narrative of this story, performed at the appropriate moments in the gamelan piece.

**Following Gamelan Workshops**

The *Ricik-Ricik* piece is revised.

The improvisations for *Kancil and Magic Gong* are refined and extended. Further group improvisation activities, where one child conducts and different dynamic levels, tempos, and timbres are explored. A pattern on the *bonang* = 6 3 6 1 2 6 1 6 1 2 is used as the basis for an improvisation.

Further information on the four gamelan workshops are detailed in Appendix E.

**Djembe Lesson Plan:**

The overall plan for the djembe workshops is a focus on the use of rhythm games, dance, song, and storytelling as avenues for personal and interpersonal development. Traditional African performing arts emphasise relationship. They emphasise their capacity to stimulate a child’s cognitive, emotional, and social development and, in particular, their creativity.

**Introduction**

Same as the tabla and gamelan introductions, but with the music and visuals relating to west Africa and Malinke culture.

**Djembe Introduction (15 mins)**

Introduce a variety of instruments, first through demonstration and then with experimentation by the children. Introduce the djembe with a “call and response technique”. First, a simple rhythm—5 even strokes, followed by variety of different rhythms with 5 or 7 strokes (e.g. long, long, short, short, short) are introduced.

Discuss the three basic sounds of djembe: bass, tone, and slap. Highlight the importance of playing together as a group.
**Djembe Rhythms (30 mins)**

Teacher introduces two songs *Che che le che* and *Kilale* (meaning “welcome”). The children learn by imitation.

The class learn a rhythm on the djembe called *Bashiba*, which means “energy”.

First the introduction:

```
pa-te-pa-te-pa, boom, boom
boom, boom, pa-te-pa-te-pa
```

followed by:

```
pa-te-pa-te-pa, pa-te-pa-te-pa, boom, boom, boom
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Both these rhythms are then put together – two times the *Bashiba* rhythm with one beat in between, followed by the second rhythm. Vocalisations are used with the children to reinforce this rhythm.

**Variety for the Finale (15 mins)**

The world music teacher shows the class the three *dunun* drums: *kenkene* (small), *sambang* (medium), and *dunun* (large). The teacher plays these drums while the class plays their djembes with a different accompanying rhythm.

Children have the opportunity to ask some questions at the end of the class about the music, instruments, songs, stories, country and culture of the djembe.

**Following Djembe Workshops**

The *Bashiba* rhythm is revised, refined and played in different combinations over the following weeks. A *jun-jun* accompaniment is added to the *Bashiba* rhythm, to give an extra rhythmical complexity. Other rhythms are also experimented with by the class.

Other songs are learned, including the words, movements and drumming rhythms. The world music teacher tells the class a number of stories through song, playing a variety of instruments to accompany these songs.

The storytelling activities with their accompanying instrumental improvisations are also part of the djembe workshops. The children create a variety of different sounds on their djembes to accompany the African folk tale *The Clever Jackal*.

Other improvisation activities include individual children leading the call by making up their own rhythms, with the class then responding and each child experimenting with a dance to a rhythm played by the group.

Further detail about the exact activities of the djembe workshops are in Appendix E.
Summary of research design

In summary, there are a variety of research methodologies and methods used in this study. Overall, the research process went through six main stages:

1) A literature review which informed the thinking for the study.
2) Design of the workshops.
3) Pre-workshop assessments and interviews.
4) Implementation of the workshops.
5) Post-workshop assessments and interviews.
6) Analysis and triangulation of the data.

1.4. Research Outcomes

Using the strategies outlined on the previous pages, this research aims to present and consider multiple perspectives from students and teachers, including my own observations and reflections. This, coupled with a review of the literature and a brief description of my own background, experiences, and philosophy, facilitates a holistic analysis and discussion on the main questions of this research study. Surveys, interviews, recordings, test results, and participant observations provide a rich basis for bringing the findings together and to explore what can be gleaned from across the broad range of data. In the process of performing the design, action research, and data analysis, I aimed to gauge the potential of world music education experiences for stimulating creativity, and to develop a framework to represent this. This translates into three main proposed outcomes:

Outcome 1—Linking thinking on children's general creativity with practical experiences of engaging with different forms of world music education. There are few studies that investigate the effect (world) music learning has on general creativity, and less attention has been focused on creativity development than on other types of non-musical benefits—this research develops knowledge about how music learning influences general creative processes and behaviours.

Outcome 2—The design of a framework for pedagogical environments based on world music traditions, where a blend of factors can contribute to the development of children's creativity. There is little consistency on insights and strategies concerning different aspects of fostering creativity—this research aims to explore these strategies to design a music pedagogical approach that supports and enhances children's creativity.
Outcome 3—A model for qualitative and quantitative assessment of world music workshops in terms of stimulating musical and general creativity. There is very little research to date to ascertain the success and outcomes from world music programs and the pros and cons of various methodologies—this research may develop some insight into creative ways for promoting world music education to young learners.

In this way, this research aims beyond mere effectiveness in music education, but tries to contribute to addressing a major challenge signalled in education. Research shows that younger children have become less emotionally expressive, less imaginative, and less open to new experiences. This research aims to develop a program that enhances children’s imaginations and offers them new musical experiences. As Pink (2006) puts it:

The future belongs to a very different kind of person with a very different kind of mind—creators and empathizers, pattern recognizers and meaning makers. These people . . . will now reap society’s richest rewards and share its greatest joys. (p. 1)
PART TWO:
APPROACHING CREATIVITY
While little has been published on the links between world music education and creativity in children specifically, there is a wide range of literature that can inform research on this topic, encompassing music education, world music education, ethnomusicology, music psychology, and the psychology of creativity. The next three chapters survey and discuss key aspects of this extensive body of literature and elicit key themes and ideas that I have used in the development, implementation, and analysis of the subsequent pilot program.

First, different perspectives on the multi-faceted nature of creativity will be explored. Many of the views and models of creativity focus on a process-oriented approach (Burnard & Younker, 2004; Finke, Ward, & Smith, 1992; Runco & Chand, 1995; Wallas, 1926), which concentrate on cognition aspects of creativity. Lubart (2000) summarises these as problem-finding, formulation and redefinition, divergent thinking, synthesis, and combining information and idea combinations through random or chance-based processes. The other category of creativity models focuses on systems-oriented approaches, which include factors of environment, socio-cultural background, and the individual (Amabile, 1996; Csikszentmihályi, 1988; Selby, Shaw, & Houtz, 2005; Treffinger, 1980). Then, to lay the groundwork for this research study, the characteristics of creativity that arise from cultural diversity and ways of measuring the creative phenomenon are explored.

Next, I will review aspects of musical creativity across cultures, considering some aspects of the creative philosophies behind Javanese gamelan, Hindustani classical music, and West African djembe, and exploring how these translate into a pedagogical situation in Western settings. Some comparison of other approaches such as those found in Orff, Dalcroze, and other Western models of music education is made to provide perspectives on cultural differences and similarities in music education. As part of this analysis of musical creativity, improvisation and composition are explored, as they are fundamental to many world music traditions. It is important to investigate, in particular, the specific characteristics of children’s free-song, as this has benefits for shedding light on the topic of children’s creativity. A discussion of the ways to measure musical creativity closes this chapter.

The final chapter in this section considers approaches to creativity in music education. Some common features are drawn from various world music education methodologies to demonstrate characteristics of pedagogy that may benefit creativity. Enabling students to experience uncertainty and exploration, learning music holistically rather than didactically, and the benefits of collective learning are explored. The role that imagination and analogy play in learning creatively, and their relationship to creativity, is another area I have chosen to highlight. As this research looks to understand the effect of world music learning on
children's creativity, it is also important to explore the effect of broader music education on this same area. Finally, in all these areas, the transmission and acquisition of knowledge is explored across different cultures; that is, how musical enculturation and acculturation affects children's creativity.
2. Exploring Creativity

Torrance (1988) argues “creativity is a multifaceted phenomenon which defies precise definition” (p. 43). The concept of creativity, however defined, can be approached in a multitude of ways. For example, it can be viewed from either a person, process, environmental (place), or product perspective (Runco, 2004, p. 661). In the following sections of this chapter, these views will be explored in some detail, leading to a discussion on integrated or confluence theories of creativity, which incorporate aspects from all the four perspectives mentioned, without the ambition of presenting a comprehensive overview of the vast literature on creativity. Rather, this section aims to highlight key concepts emerging from the corpus of creativity research that can shed light on how characteristics of creativity are manifested through children’s musical creativity in this study, how the world music traditions in this study may exhibit these characteristics, and how the world music education pedagogy and environment influences these characteristics.

2.1 Environment

Environmental influences on creativity are important for this study. A number of prominent researchers have explored the influence that environmental factors may have on creativity. Hennessy and Amabile (1988) put forward the view that social and environmental influences provide the main inspiration in creative thought and behaviour, even more so than personality attributes. With a focus on the environmental influences, Amabile’s (1996) research found that an individual’s creative behaviour can be improved, if provided with the right circumstances or environmental factors. These environmental factors may come from a variety of sources, such as the influence of the children’s family, friends, cultural background, school experiences, and the influence of the world music teachers and the other children in the workshops.

Csikszentmihályi’s (1988) well-known systems theory of creativity has also had considerable impact on the way creativity is understood. His approach emphasises the importance of the social and historical milieu in which the individual’s creative actions occur (p. 325). The key elements in his model are the individual (personal background), the field (society), and the domain (culture). He classifies it as a “phenomenon that results from interaction between these three systems” (p. 325). His theory highlights how creativity is primarily viewed or assessed by the environment in which it is created, and that creative individuals may be judged differently depending on their surrounding environment:
A set of social institutions, or field . . . a stable cultural domain, that will preserve and transmit the selected new ideas . . . the individual, who brings about some change in the domain, a change that the field will consider to be creative. (pp. 325–326)

Csikszentmihályi's (1988) theory is a basis for the three componential model from Amabile (1983). The theory also emphasises social and environmental impacts on creativity, although it could perhaps be classified as an integrated or confluence model. It looks at how cognitive abilities, personality characteristics, and social factors contribute to stages of the creative process. It maintains that three factors work together—domain-relevant skills (or expertise), creative-thinking skills, and motivation. This model is also useful to consider when assessing the impact of cultural diversity on creativity within a group, as this study aims to do. As James, Lederman, and Vagt-Traore (2004) point out, Amabile believes that displays of creativity from individuals or the group are enhanced through the diversity of a group. James et al. (2004) state that "a diversity of people means a variety in expertise, creative-thinking styles, and cognitive abilities" (p. 8).

Motivation has also been identified as an important factor for the development of creative potential by a number of researchers (Amabile, 1983; Lewis, 1999; Torrance, 1962). As this study is investigating children's development of creativity, factors that contribute to the development of this creative potential are important to consider. The influence of family, peers, individual interests, the need for expression, attention, and reward may all have an impact on the children's levels of motivation and, hence, their creative development.

These social and environmental effects are particularly relevant in the world music education context. I will elaborate upon this topic in Section 3.1 while referring to the influences specific to musical creativity, and in Section 5.5, which discusses the influences of the group and the world music teachers on the children's creativity during the workshop activities.

The influence of the teacher and the environment in which a child learns are also aspects worth discussing. Treffinger (1980) suggested that creativity is related to the discovery process. If students are encouraged to explore, experiment, and discover knowledge for themselves, it may allow them to gain new perspectives on a topic. The pedagogy of the world music workshops in this pilot is designed to allow students this opportunity of discovery. Feldhusen and Treffinger (1980) advocate this view and state that "experience with discovery learning enhances creative performance by forcing the learner to manipulate the environment and produce new ideas" (p. 34). This is also supported by F. Alter (2010) who says that "creative thinking is encouraged and developed through establishing the environmental conditions in schools that encourage curiosity, complexity, risk taking and
imagination” (p. 5)—all possible elements in a study of world music for children who have not experienced these musical traditions before. A pedagogical approach incorporating these aspects has also been found to enhance fluency, flexibility, elaboration, and originality (Feldhusen & Treffinger, 1980), characteristics of creativity which will be measured in this study. It will be an important focus of this study to explore how a pedagogy that supports creativity by incorporating these aforementioned aspects may actually impact on the children’s creativity in the world music context.

As this study will be using experience in one domain (world music) to explore if there are any benefits for children's creativity in other domains, the topic of “domain specificity” is relevant. This is an area in which there is a great deal of discussion and disagreement amongst researchers. For example, the approach of Ward, Smith and Finkes (1999) found that if individuals demonstrate creativity in one domain, then they are likely to be creative in other domains as well. A study by Chi (1997) found that it was possible to increase flexibility in individuals across different categories of knowledge. In contrast, other researchers argue that creativity tends to be specific to a particular domain or task (Baer, 1998). Lubart and Guignard (2004) believe that it is "partly a generalised ability, partly a set of domain-specific abilities, and partly a set of task-specific abilities" (p. 43). There is also a view which is increasingly proposed by researchers that individuals’ general creative capacity is developed in specific domains as a consequence of their education and interests in these areas (Kaufman, Cole, & Baer, 2009; Plucker & Beghetto, 2004; Simonton, 2007). The jury is still out on this important aspect of creativity research.

2.2 Cognitive Process

The extensive number of studies and theories about the cognitive process of creativity highlights the complexity in this field, but also illustrates the fascination by human beings to explore and understand it. There are both similarities and differences in the various approaches. In this section, I refer to a number of these process models that may be relevant to creativity that is generated from world music education.

Many of the theories that relate to the cognitive processes involved in creativity are based on the Wallas (1926) model. This theory states that the creative process involves four stages: preparation, incubation, illumination, and verification. Preparation is about problem identification and definition and gathering of information. Incubation is about the “unconscious processing of information . . . associative processes may be at work” (Runco, 2007, p. 19). Illumination refers to insights or, as Schilling (2005) describes it, “unexpected connection between disparate mental representations” (as cited in Runco, 2007, p. 22), which
may not happen suddenly but be a process of slowly restructuring. These last stages are particularly interesting if considered in the context of learning a new skill and new knowledge. Students who are learning how different musical traditions are represented and structured may make connections with their mental representations of their existing musical knowledge. These associations and connections may then result in students creating and developing a completely new structure, which in some way draws on these combinations. This may result in novel musical behaviour and outputs. The Geneplore model (Finke et al., 1992) also refers to these associations, combinations, and analogical transfer between domains. Ward et al. (1999) describe it as "Initial generation of ideas or solutions, followed by extensive exploration of those ideas... retrieval of existing structures from memory and formation of associations among these structures... combinations, transformations into new forms or analogical transfer from one domain to another" (p. 191).

Burnard and Younker (2004) present a view which also takes its basis from the Wallas model. They say:

The creative thinking process involves stages that are dynamic and, at times, non-linear. These stages include sensing, defining, clarifying or understanding the problem, moving between divergent and convergent thinking, while generating and evaluating solutions, and converging on a final solution – a solution that may be used in other situations (Davis, 1986; Guilford, 1967; Sternberg, 1999; Webster, 1987a, 1987b). (p. 69)

Runco and Chand's (1995) model shows many of these concepts in a clear graphical representation and emphasises the characteristics of fluency, originality, and flexibility, which will be measured in this study.
Weisberg (1988) describes a process model similar to that of Runco and Chand (1995) in many ways, but viewed as finding creative solutions to problems (p. 152). He says that multiple searches are performed, each time reformulating the problem slightly, based on interaction of a person’s knowledge and the problem itself, solved recursively, which “uses remote analogous relations as the basis for memory search” (p. 159). The “use of selective encoding, combination, and comparison are important for creative thought and discovery” (p. 169).

The elements in these cognitive creativity process models may provide a very good description for the cognitive process involved in improvisation, although in this case, it may happen almost subconsciously and instantaneously in the moment of improvisation. The elements also highlight the importance of both convergent and divergent thinking being involved in the creative process. The children in the world music education pilot will most likely need to employ convergent thinking as they comprehend, assess, problem-solve, and make decisions on how to use their new knowledge, but will also need to employ divergent thinking as they come up with new ideas and combinations in their improvisations/compositions. Although not expressed in the context of world music education, it is
interesting to point out the view of Pressing (1988), who also likened the process of learning to improvising with the problem-solving process (p. 151).

Learning a different and new musical tradition, as the children will be doing in this pilot, may provide an opportunity for the children to develop new combinations of knowledge. Wan and Chiu (2002) call this “novel conceptual combinations” (p. 227). Their study predicted that those who received training in novel conceptual combinations would exhibit higher levels of creativity on subsequent tests of creativity than those who had not received such training. Their research confirmed this and found that “solving novel conceptual combination problems can indeed enhance creativity in a subsequent task” (p. 228). A number of researchers have also explored the benefits to creative thought that come from exposure to new experiences. In a recent television interview, Ritter (2013) discussed how “new, unexpected, unusual experiences can boost your creativity. Experiments where people are put into virtual environments that are unexpected helped them to make new associations between ideas, think more flexibly, new and original ideas formed, increase in divergent thinking”.

This is an important concept which underlies my design of the world music workshops; children participating in the workshops should have new and unexpected musical experiences, which may help them to develop more flexible and original musical ideas.

Another important aspect of the creativity process to discuss is the use of analogy and metaphor. The significant role of analogy in creative thought has been highlighted by many researchers (Finke et al., 1992; Runco, 2007; Weisberg, 1988). The use of analogy and metaphorical thinking is related to the concept of transformation, connection, and combination of ideas across different domains, as described in many of the models just discussed. A similar concept is perhaps that of mental imagery, where it is important to “create” a picture in one’s mind that relates to an important idea. Gardner (1983, pp. 323–325) discusses how mental imagery is required in creative thought. One of the aspects that will be explored in this study is this use of metaphorical thinking and mental imagery, and its role in children’s creativity. Various stories will be used in the workshops and children will be encouraged to create combinations of sounds that relate to these images during their improvisatory experiences.

2.3. Personality

Sternberg and Williams (1996) promote the view that a creative attitude is at least as important as creative thinking skills, and that it is something that can be fostered by education. One of the interesting questions to ask in this context is how much of this creative
attitude is due to inherent personality attributes, and how much can be attributed to environments and pedagogies that are supportive of creativity. Selby et al. (2005) conducted an extensive review of creative personality studies, finding that many of these studies identified numerous characteristics of creative people. Their review highlights and discusses these various characteristics, and it is interesting to note that many of the characteristics are indeed similar across many decades of research and different studies. Despite these findings, Selby et al. (2005) believe that all people have creative potential, and that the focus should be on how to help students to identify, nurture, and “appreciate their creative style” (p. 308). If students’ different creative styles of learning are catered for, then they can improve their creative productivity. They also highlight the important influence that environment and cognitive ability have on the creative personality. This supports the idea of an integrated theory of creativity, where a multitude of factors work together to support creativity.

To emphasise some of the similarities of these creative personality attributes, I have drawn on a few notable studies. Feist’s (1998) opinion is that “a creative personality does exist and personality dispositions do regularly and predictably relate to creative achievement” (p. 304). However, he also argues that creative personalities may also need a supportive environment in which to flourish. In several studies, he found that openness to experience and extraversion, which are two of the big five personality types (Digman, 1990), positively correlated with creative performance. Sternberg and Lubart’s (1996) investment theory of creativity discusses five essential personality attributes that enhance creativity: tolerance of ambiguity, perseverance, willingness to grow, openness to experience, and willingness to take risks. Barbot et al.’s (2011) belief is that the:

- core factors include perseverance (the tendency to overcome obstacles surrounding problem solving and the process of accepting change);
- tolerance for ambiguity (tendency to consider solutions, as ambiguous as they are);
- openness to new experiences (the tendency to be open to the unknown);
- individualism (characterized by a search for independence, allowing the emergence of unconventional solutions);
- risk taking (proposing a new idea contains a risk that this idea be rejected);
- psychoticism (involving a tendency to develop distant or eccentric associations, if mastered, can lead to original ideas). (p. 61)

The first five of Barbot et al.’s (2011) characteristics would all be very applicable in a situation when faced with learning new skills and within unfamiliar and diverse environments; an example of which could be the children participating in the world music workshops in this study.
Selby et al.’s (2005) comprehensive analysis of the numerous and varied theories of creative personality provides a list which divides these characteristics into two categories—those associated with openness and courage to explore ideas, and those associated with listening to one’s inner voice.

Table 2.1: Personality characteristics associated with two patterns of creative individuals

<table>
<thead>
<tr>
<th>Characteristics Associated With Openness and Courage to Explore Ideas</th>
<th>Characteristics Associated With Listening to One’s Inner Voice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity to problems</td>
<td>Self-awareness of creativeness</td>
</tr>
<tr>
<td>Aesthetic sensibilities</td>
<td>Persistence</td>
</tr>
<tr>
<td>Curiosity</td>
<td>Independence of thought</td>
</tr>
<tr>
<td>Sense of humor</td>
<td>Self-disciplined</td>
</tr>
<tr>
<td>Playfulness</td>
<td>Self-directed</td>
</tr>
<tr>
<td>Fantasy thinking</td>
<td>Autonomous</td>
</tr>
<tr>
<td>Risk-taking</td>
<td>Self-confident</td>
</tr>
<tr>
<td>Tolerance for ambiguity</td>
<td>Reflective</td>
</tr>
<tr>
<td>Tenacity</td>
<td>Introspective</td>
</tr>
<tr>
<td>Openness to experience</td>
<td>Internal locus of control</td>
</tr>
<tr>
<td>Adaptability</td>
<td>Rejecting of stereotypes</td>
</tr>
<tr>
<td>Intuition</td>
<td>Energetic</td>
</tr>
<tr>
<td>Willingness to grow</td>
<td>Hard-working</td>
</tr>
<tr>
<td>Openness to feelings</td>
<td>Absorption in work</td>
</tr>
<tr>
<td>Unwillingness to accept authoritarian assertions without critical examination</td>
<td>Sociable</td>
</tr>
<tr>
<td>Integration of dichotomies</td>
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</tr>
</tbody>
</table>


Selby et al. (2005) point out that most of his research focused on adult males. However, studies by Starkweather (1964, 1976) found that curiosity and nonconformity in children were also important characteristics for creativity.
Many of the characteristics detailed in the table above will feature in the world music pilot program. A tolerance for ambiguity was required, as the children embarked on learning new music traditions that were unfamiliar to them and they needed to draw on attributes such as curiosity and adaptability. The world musical traditions in the pilot included improvisation, which also requires some tolerance of ambiguity and a level of autonomy. In learning these new musics, characteristics such as tenacity, self-confidence, and persistence were required, as the children encountered aspects that were difficult for them to master and that required some effort to achieve. Their engagement with the new musics required an openness to feelings, so they could understand the emotive power of the music they were learning. The pedagogy in the pilot program encouraged inquiry-based learning and allowed for exploration and play to nurture some of these creative attributes.

In this study, there was no scope to undertake any formal assessment of the children's personality attributes, so it was not possible to determine if these attributes were inherently part of their personalities prior to the study commencing. However, through the personal observations in the study and children's interview responses, some of these attributes were considered to determine how the world music experience may have contributed to the display of these characteristics. The focus was on how these attributes could be nurtured in the pilot program, and if there were any benefits from the world music experience which were displayed through the children’s development in creativity.

2.4. Product

According to Mumford (2003) “creativity involves the production of novel, useful products” (p. 107). This is a product definition of creativity—it considers the outputs that may be produced by an individual and measures them in terms of novelty and usefulness, and this then determines how creative the individual may be. James et al. (2004) discuss the distinction made by researchers in the field between product-oriented and process-oriented creativity. They state that "novel refers to original work; . . . appropriate simply concerns the usefulness of the product towards a certain need" (author italics, p. 2). So product-oriented creativity considers the output of the creative process, as contrasted to a process-oriented creativity, which has been discussed in Section 2.2. The assessment of product creativity has been considered an important way to understand creativity by many researchers over a number of decades (MacKinnon, 1978; Runco, 1989; D. W. Taylor, 1960). Runco (1989) makes the point that an approach that focuses on the assessment of product creativity may avoid the inconsistency that often occurs in psychometric tests and rating scales.
Product creativity is usually measured by ratings from experts in the field, who assess the output or product of an individual, such as that performed in the Consensual Assessment Technique (Amabile, 1983). This technique is described in Section 2.6. An interesting perspective on product creativity comes from Horn and Salvendy (2006), who emphasise the dependency on an integrated theory of creativity, with the influences from the environment and person:

Product creativity is not solely an objective or physical attribute of the product, but is dependent on the judge and context in which the product exists. Therefore, product creativity only exists if there is a judgement of a product (based on a set of criteria), and products cannot be inherently creative (without judgement). (p. 396)

They base their view on Csikszentmihályi’s (1988) system model of creativity. They state that “judgement of product creativity is constrained to the interactions between the product, consumer and domain” (p. 397). To measure this creativity as they have defined, they constructed a measurement against criteria in three categories: attribute (the perception of product creativity), affect (the emotional impact of product creativity), and preference (the individual’s choice of product creativity). Their belief is “product creativity may be seen as an outcome measure of the creative process, person or environment . . . . Thus, measuring the dimensions of the final creative product can lead to better understanding of the roles and results of the creative process, person or environment” (p. 409).

Although these measures were developed in by the authors in research on product development strategies and related consumer behaviour, it is useful to understand and is relevant for this study. In the musical context, there has also been a focus on product creativity and its assessment. Sarath (2013, p. 8) summarises how musicology has focused on musical product creativity by largely concentrating on the musical works and related structural and historical aspects. This is discussed further in Chapter 3. However, similar to the view taken by Horn and Salvendy (2006), product creativity in the musical context will also take into account the perspectives of the social environment in which it is produced, and the perspectives of the “consumers” of the musical product. These perspectives are the frame of reference for the musical improvisation or composition produced.

In the pilot, there was some opportunity to analyse this product creativity by assessing children’s musical outputs in the workshops and through Webster’s MCTM–II (2002), which involves the assessment of musical product. Although in this study my focus is on the process, person, and environment, they all have a relationship with product creativity. The musical improvisations that were produced by the children as part of the social group


environment in the context of an West African djembe workshop were assessed by myself and the other world music teachers. The novelty of the children’s improvisations was considered primarily as newly-created music in the context of Western music education. The context of the musical tradition they were learning was also taken into account, but the assessors were acutely aware of the modest level of acculturation that was possible in the timeframe of the pilot. The usefulness of the children’s musical products was also viewed in the context of the specific educational setting in Australia in 2014, with the assumption that the children’s improvisations were useful for their learning and this study.

2.5. Confluence

While many of the perspectives of creativity discussed in the previous sections focus on a single aspect to explain creativity, there is a growing consensus that we, in fact, need to approach an understanding of creativity in a more integrated way. Isaksen (1987) states that creativity is “a multifaceted phenomenon rather than a single unitary construct capable of precise definition” (p. 8). Hennessey and Amabile (2010) argue that “creativity arises through a system of interrelated forces operating at multiple levels, often requiring interdisciplinary investigation” (p. 571). A number of researchers have proposed models to describe creativity which consider it as a multifaceted phenomenon.

Sternberg and Lubart’s (1996) confluence model is described as a “confluence of six distinct but interrelated resources—intellectual abilities, knowledge, styles of thinking, personality, motivation and environment” (Sternberg, 1999, p. 11). Their work in this area may have influenced Barbot et al.’s (2011) approach, which describes well how the various elements are classified and can interact. They assert that creativity involves a combination of cognitive (information processing), conative (personality traits, motivational aspects), and emotional factors (affective state, trait) that are interacting dynamically with the environment (which stimulates or inhibits the expression of creative potential). (p. 59)

These authors emphasise that creativity can be developed and “assessed properly by assessment tools tapping into the multidimensionality of this ability” (p. 59). Another recent study from Fürst, Ghisletta, and Lubart (2016) relates both personality and cognition to creativity. These authors identify three “super-factors” of creative personality types that include plasticity, divergence, and convergence. Plasticity is about the personality traits of openness to experience, extraversion, high energy, and inspiration; the common factor here is a high drive for exploration. Divergence is about non-conformity, impulsivity, low agreeableness, and low conscientiousness and convergence involves high conscientiousness,
precision, persistence, and critical sense. These studies make the case for different factors that can influence creativity interacting with each other. This is also the approach that this thesis takes, in line with Barbot et al.’s (2011) suggestion to use a variety of assessment techniques to allow for different perspectives of creativity, and thus endeavours to explore the influences on creativity that may come from personality, cognitive process, and environment. In the pilot, different factors that influence children’s creativity and how they blend and interact were explored.

2.6 Creativity Across Cultures

The influence of society and the environment has been touched upon in Section 2.1. Such a perspective of creativity acknowledges the impact of interactions between individuals and others, as well as between individuals and their environment. That supports the argument for strong influences of individuals’ cultural environment and interactions on their creativity. A number of scholars have tried to determine how creativity may be influenced and viewed differently depending on the cultural milieu. Feldman (1974) believes that “all creative thought springs from a base of cultural knowledge” (p. 68) and Shweder (1990) posits that “cultural traditions and social practices regulate, express, transform, and permute the human psyche” (p. 1). Glăveanu (2010) explains these statements by relating that “all creativity requires, at least at certain points in the process, some form of communication or social exchange” and that we are “engaged in dialogue with internalized ‘parties’ such as our mentors, our audience, our critics, etc... This dialogue is made possible by the use of cultural elements and it is these elements that constitute the substance of our creative acts” (p. 89).

Glăveanu (2010) also emphasises that creativity relies to some extent on existing knowledge and that this knowledge is accumulated in a particular culture, so it is therefore dependent upon it. This point becomes relevant in the context of this study, as the children learned musical knowledge from cultures other than their own, so how they express creativity may partly be inspired by constructs and practices from these cultures.

If an individual’s creativity is dependent upon his surrounding culture, then the way creativity is defined in this scenario is dependent upon this culture. Part of the difficulty in defining creativity is that it can be viewed differently, according to the culture in which it is expressed. Herbig and Dunphy (1998) discuss how creativity resonates with what is already culturally valued in the society if it is to be accepted. A wealth of ethnomusicological literature deals with this topic from single culture perspectives (see, for example, Agawu, 2003; Brinner, 1995; Kippen, 2006; M. E. Nzewi, 1991; Perlman, 2004; Wade, 1984).
However, few discuss creativity across cultures, and very little on “world music creativity” in essentially Western music education settings.

Westwood and Low (2003) point out that most of the literature on creativity still defines, researches, and explains creativity primarily from a Western cultural perspective. Westwood and Low (2003) discuss some of the different perspectives of creativity in non-Western cultures and state that “Eastern cultures have been less concerned with outcome or product and more with the role of creativity in providing personal fulfilment and enlightenment, or connection to an inner realm of reality” (p. 239). While laudable in intention, such statements run the risk of being generic and naïve, with little consideration for differences between Chinese, African, Indian, and other “Eastern” cultures’ viewpoints. Wellesz (1957) states that an “Eastern musician likes to improvise on given patterns, he favours repetition, his music does not develop, does not aim at producing climaxes, but it flows; and the listener becomes entranced by the voice of the singers, by the sound of the instruments, and by the drumming rhythms” (p. xviii). However, Schippers (2010) points out that in fact:

...what Wellesz describes here is not the way an “Eastern musician” (if there is such a creature) approaches music, but how a Westerner may [mis]interpret music from other cultures. To take one example: a professional Indian musician will not recognise his own music making in the description that we read above. Indian ragas are not given patterns but highly abstract melodic organising principles, improvisation is not a choice but the core of the performance practice, the Indian musician does not favour repetition but subtle variation that cannot easily be discerned by untrained ears, and a raga performance develops according to a well-defined pattern, including fairly spectacular climaxes, most of which should be hard to miss even by lay listeners. And the knowledgeable listener—Indian classical music is a musique savante par excellence—actually responds not to the pleasant humming of the instruments, but to the dexterity the musician displays in producing new and unexpected variations within the constraints of the chosen raga and tala, the melodic and rhythmic organising principles in this music. (p. 33)

Such generalisations persist, however. Researchers have indicated that some cultures, such as the Chinese, are more inclined to perceive and to cognitively organize things holistically (Hwang, 1982; Westwood, 1986; Yang, 1986). This suggests that Chinese people see and interpret things in terms of wholes and context, which contrasts with an Anglo-American tendency to fragment, decompose and de-contextualise. There have been some
indications that a holistic cognitive style is fruitful for creativity. (Westwood & Low, 2003, p. 245)

Hofstede’s (1980) model of cultural dimensions proposes that innovation is more likely in high individualistic and small power distance cultures (such as the United States, Britain, and Sweden). However, cultures such as Japan that have more collectivist values, it is argued, are more conducive to incremental innovations, especially in processes based on consensus and compromise (Lampikoski & Emden, 1996). It is reasoned that although the cultural orientation discourages individual expression of ideas that deviate from the norm, people will work collectively to improve the processes of the collective entity. (Westwood & Low, 2003, pp. 248–249)

Rudowicz (2003) points out that in “eastern culture the concept of creativity may not necessarily contradict conformity. Creativity here may take the form of modification and adaptation” (p. 276). This is another generalisation, in contrast to the Western emphasis on novelty and originality of ideas. As there is still little research on cross-cultural creativity, many of the views expressed by all these authors may be too broad and do not necessarily consider the multicultural nature of many societies and the individualities that exist within a culture. Nevertheless, the differences in cross-cultural perspectives of creativity are worth exploring further.

All these points about how different cultures view and exhibit creativity are worth considering in this study, although the limited time frame, multiple cultures, and single geography means that the analysis needs to be viewed in the context of my case studies. If indeed there is more of an emphasis on incremental change and modification, rather than a completely new approach in some cultures, then this should also be reflected and encouraged in the culture’s musical traditions. For example, using existing structures and modifying them may be the way musical improvisation and composition is expected to be done in certain cultures. Rather than dividing music into its component parts of melody, harmony, rhythm, and form, a more holistic approach may be taken to learning music. Group creativity versus individual creativity may have a different balance and importance across cultures.

Some of these differences and their impact on music pedagogies and expression will be explored in this study, through comparing the three world music education experiences and how the children exhibit creativity in each musical tradition. Some of the studies discussed previously have demonstrated that although there are many factors to consider, there are some indications of cultural differences in creativity. It is relevant to explore if this is also
indicated in this study. It may be difficult, however, to draw any clear or conclusive differences for the relationship between creativity and cognition and also between creativity and personality factors across cultural environments, a point also made by Westwood and Low (2003, p. 245). This is due to the multifaceted nature of creativity, the inability to make generalisations for individuals in different cultures, the “Western” perspective of my observations and tests, and the level of acculturation that the children can hope to achieve in the timeframe of this study.

In a discussion about the effect of culture on creativity, it is interesting to refer to some studies which show that exposure to a variety of cultural experiences can be beneficial for creativity. The first group of studies refer to the benefits of bilingualism. An example is Kharkurin’s (2010) study, which revealed an interactive influence of bilingualism and sociocultural context on creative potential, suggesting that the contribution of bilingual development to creative potential differs across cultures. . . . Psychometric research provides evidence that bilingualism is positively related to the creative potential of individuals. In particular, a number of studies demonstrate the advantages of bilinguals on various divergent thinking tasks. (p. 777)

Another group of studies show the benefits of multicultural experience more generally. Chang, Chin-Chun, Nai-Hua, and Hseuh-Chin (2014) state that a number of studies support the idea that multicultural experiences directly influence creative performance, although most of these studies have been done with adults. Chang et al.’s particular study involved 700 adolescents in Taiwan. They found “support that young adolescents from multicultural families were more creative than those from monocultural families. Moreover, this effect remained when controlling for the adolescents’ family background factors and their personality traits” (p. 1293). This is relevant for the present study, as many of the participants came from culturally diverse backgrounds. Leung et al. (2008) reviewed numerous studies and found that extensiveness of multicultural experiences was positively related to creative performance. The benefits and improvements to creativity came from a number of aspects that have been found to have a positive connection with creativity. Specifically, they found that multicultural experience improved:

- remote association.
- insight learning.
- idea generation. (Leung et al., 2008, p. 169)
- retrieval of unconventional knowledge.
• direct access to novel ideas and concepts from other cultures.
• destabilisation of routinised knowledge structures, thereby increasing the accessibility of normally inaccessible knowledge.
• creation of a psychological readiness to recruit ideas from unfamiliar sources and places.
• fostering synthesis of seemingly incompatible ideas from diverse cultures. (Leung et al., 2008, p. 173)

Leung and Chiu (2010) also advocate that multicultural experiences may foster creative expansion of ideas:

An individual who has extensive experiences in both cultures may be able to retrieve both ideas spontaneously, cognitively place them in juxtaposition, and through creative insights integrate the two ideas into a novel idea. . . . Consistent with this idea, creative cognition research has shown that original ideas often result from combining two or more seemingly non-overlapping concepts. (pp. 724–725)

Their study measured performance on two creativity tasks immediately after exposing European American students to a foreign culture, and again 5–7 days after the exposure. They found that creative performance following either dual cultures exposure or fusion culture exposure was significantly higher than that in the control condition. Their results indicated "that a creative mindset will be activated in a situation where dissimilar ideas from different cultural sources are presented simultaneously" (Leung & Chiu, 2010, p. 736). While their study did not involve direct participation by people in the creative activity, it is nonetheless very significant in the context of this research. The pilot program involved children having exposure to a multicultural experience when they learn the three world musics. They were exposed to dissimilar ideas regarding music in these different traditions, when compared with their ideas of Western classical music. They chose to juxtapose these different ideas when they were then asked to musically create. Through the interviews and observations in this study, I looked for evidence of this behaviour from the children.

2.7 Training

There is much discussion in the literature about whether creativity is an innate quality or whether it is something that can be developed through training and educational programs. Torrance (1972a) was a strong advocate for the latter view. Pyrty (1999) reaffirmed previous findings from a meta-analysis of studies by Rose and Lin (1984) that found school-age children who receive divergent thinking training then improve in creative thinking. Barbot et
al. (2011) also refer to many empirical studies on the development of creativity and creativity-relevant attributes that also support the view that an individual’s creative productivity can be improved through instruction. However, their assessment is that the “most effective training programs will be those tailored to enhance creativity in a specific domain” (p. 64). Others, such as Hunsaker (2005), take the alternative view and claim that there is little evidence that creativity training programs are useful to improve creative personality (p. 294). However, some researchers combine the different viewpoints and propose that while everyone has some creative capacity, there are varying degrees of creativity in people (Ward et al., 1999; Weisberg, 1988; Westwood & Low, 2003). The growth in creativity training programs and the focus on creativity skills in education and the workplace point towards a general acceptance that this may indeed be the case. Further to this point, there has been a recent focus on trying to foster and develop creativity in schools (Amabile, 1996; Feldman & Benjamin, 2006).

Many Asian countries, in particular, have recently recognised the benefits of an approach that values creativity in education. For example, in Hong Kong “creativity is recognized as one of the three generic skills to be developed in education, and several general principles for developing creativity are suggested in curriculum documents” (Cheng, 2010, as cited in Lin, 2011, p. 150). Traditionally, many of the Asian countries’ education systems value an adherence to rules and structure, rather than favouring exploratory learning, so this current emphasis on creativity development opens up an opportunity to assess how effective some of the creativity programs may be. Meador, Fishkin, and Hoover (1999) performed research on a number of well-known creativity programs used in the U.S. education system. These programs were synectics training, Odyssey of the Mind (a program where teams solve complex, open-ended problems) and Future Problem Solving (problems are also complex and open-ended but are focused on future scenarios and involve both divergent and convergent thinking skills). Synectics training, which uses analogical reasoning to enable students to make connections between unrelated ideas (Meador et al., 1999, p. 390), is of particular interest to this pilot program—analogy and metaphorical thinking will be encouraged as part of the children’s world music experience. Meador et al.’s (1999) study showed that these programs were effective in showing improvements in students’ divergent thinking, problem-solving, and also against affective criteria measures. Hunsaker (2005) found further evidence to support this study by demonstrating that teachers have confidence in creative thinking training strategies to improve students’ abilities (p. 297). However, there still has not been much research done to compare creative development strategies. Hunsaker’s recommendation that more work needs to be done on understanding how all the aspects of
creativity (such as the confluence approach) interact in creativity training situations (p. 298) is a worthwhile point to note.

While the creativity development programs mentioned earlier do not involve the use of music instruction in any form, the findings of Meador et al. (1999) are interesting to consider for this study. They demonstrate that it is possible through a tailored education program to influence characteristics associated with creativity. This study will also consider if whether using a creativity education program as implemented in this pilot program can be effective in showing improvements in students’ divergent thinking and other creativity indicators, however, it also will consider the possibility of this happening across different domains. This study positions itself within the previous body of studies on creativity development, while also taking some steps to consider how various aspects of creativity interact, as Hunsaker (2005) suggests.

In considering the effectiveness of any creativity development models, the role of the teacher is paramount. Acknowledging this fact is important to the success of any training program. As James et al. (2004) suggest, "creativity develops when teachers encourage curiosity, exploration, confidence, risk-taking, and balance" (p. 9). The importance of the teacher’s role is evident in Lin’s (2011) framework for creativity development. He proposes a pedagogy which “embraces three features—creative teaching, teaching for creativity, and creative learning” (p. 153). His framework describes “the interplay between innovative teaching and effective strategies which facilitate and are responded by children’s creative and active engagement” (p. 153). Therefore, the role of the teachers in this pilot program is crucial to its effectiveness and success. This will be discussed further in Section 4.6, as well the pilot program’s pedagogical framework in the analysis of the findings and conclusions from this study.

2.8. Measuring Creativity

If we accept the multifaceted nature of creativity, then we can assume that measuring it will be a complex task. Given the multitude of definitions and perspectives of creativity, it can be argued that the validity of the tests is dependent upon how one chooses to define it. Treffinger (1996) refers to more than 100 different definitions of creativity from the literature. Further work shows that there are a multitude of techniques to assess it (Treffinger, Young, Selby & Shepardson, 2002). Cropley (2001) suggests that creativity tests are best thought of as tests for creative potential and not of creativity. I will discuss some of the well-known approaches to assessment in this section, and the reasons for my choice of
instruments in this study. Specific assessment techniques for musical creativity are discussed in more detail in Section 3.3.

Amabile’s (1996) view of the different approaches to creativity assessment explains how the wide variety of techniques can be thought of as belonging to three main areas. She refers to these approaches as creativity tests, objective analysis of products, and subjective judgements. The spectrum of creativity tests themselves also involves three broad categories: personality tests (Creative Personality Scale—Gough, 1979), biographical inventories (Creative Achievement Questionnaire—Carson, Peterson, & Higgins, 2005) and behavioural assessments (divergent thinking tests). Some of the following examples can be considered in terms of these different categories.

Gardner’s (1983) well-known theory of multiple intelligences considers that there are different modalities of intelligence—these are classified as musical–rhythmic, visual–spatial, verbal–linguistic, logical–mathematical, bodily–kinaesthetic, interpersonal, intrapersonal, and naturalistic. In keeping with his approach of different capabilities for different domains, Gardner (1993) also presents a framework for analysing the main characteristics of creativity. In this case, he analysed seven prominent people who could be considered geniuses in different domains, and classified their creative behaviours. This approach falls more into the subjective judgement category, as the classification is based on his assessment of their various capabilities. According to Gardner (1993), creative people are influenced by their adult role models in childhood and later by their social environment and the acceptance of their creative “breakthroughs” by the field in which they work. They also have certain personality attributes, such as retaining childlike characteristics, self-centeredness, and being exploitative of others. Such assessment acknowledges the diversity of people’s qualities that may influence creativity.

The Consensual Assessment Technique (Amabile, 1983) is a combination of approaches, both the objective analysis of product and subjective judgement. This technique involves a subjective assessment of creative product by experts in the domain. Barbot et al. (2011) discuss how other product-based approaches are assessed on a set of initial elements or constraints, such as “producing a story, a drawing, a musical composition, based on predetermined criteria” (p. 61). To some extent, they must all include some element of subjective judgement, since it is in someone’s opinion (albeit an expert), that the criteria are met. The Webster MCTM–II (2002) that will be used in this study has aspects that can be considered to fit into this category of assessments, although it also has aspects that are considered to be creativity tests.
The creativity testing approach to the measurement of creativity probably includes the greatest number of measures. Selby et al. (2005) refer to the multitude of creative personality tests (pp. 305–306). For example, the Renzulli, Hartman, and Callahan (1975) scale rates children on their curiosity, fluency, risk-taking, intellectual playfulness, humour, sensitivity to beauty, conformity, individualism, and tenacity. Kaufman's (2012) Domains of Creativity Scale is a self-reported measure that classifies creativity into five different domains—self/everyday, scholarly, performance (encompassing writing and music), mechanical/scientific and artistic. As creative personality has not been measured in this research, I have not elaborated upon the other numerous assessments in this area. However, this would be an area to explore in ongoing analysis of the relationship between world music and creativity.

Another creativity test that is worth referring to in the context of this study is the Remote Associates Test (Mednick, 1962). In relation to measuring creativity, Mednick (1962) believes that "several words from mutually distant associative clusters must be presented to the subject; his task must be to provide mediating links between them" (p. 227). Based on the idea that "the more mutually remote the elements of the new combinations, the more creative the process or solution" (Mednick, 1962, p. 221), this is a process that is being investigated in this study. As discussed in Section 2.2, the idea of associating and then combining knowledge from different areas may be possible when learning and practising different musical traditions. However, one of the criticisms of the Remote Associates Test is that it lacks discriminant ability, as its scores are often correlated with convergent thinking or verbal ability (Runco, 2007, p. 11).

There are also a number of measures that may span some of Amabile’s (1996) categories. I refer to the techniques that assess environmental characteristics, such as pedagogy and learning environments that may be beneficial to individual creativity. One of these for example, is the Class Activities Questionnaire (Cicchelli, 1988). While the pilot program will not include a formal questionnaire on environmental characteristics, many of the interview questions, observations, and analysis will focus on the impact of the pedagogical approach, as this is not assessed by the other process and product techniques.

A large group of creativity tests involves the assessment of divergent thinking, an important characteristic of creativity. While many researchers criticise creativity tests that only consider divergent thinking (Barbot et al. 2011; Runco, 1993), the belief is that divergent thinking is an important characteristic of creativity. "Divergent thinking tests are . . . very useful estimates of the potential for creative thought" (Runco, 1993, p. 16). The Torrance
TTCT (2007a, 2007b) involves the assessment of divergent thinking but is also more multifaceted, as explained shortly. Chand and Runco (1995) developed a technique which draws on the TTCT. This “discovery and solutions” test allows “examinees to select one of the problems they had themselves thought of and then think of solutions to it” (Runco, 1993, p. 19). This is an interesting modification, as it also allows for the discovery process to be included. Given the connection between discovery learning, which is experienced through improvisation in the world music traditions, and creativity, this would appear to be a useful technique for assessment of creativity. More recently, Barbot et al. (2011) have developed a technique that involves divergent thinking, but is broader in scope. They argue that their technique, the EPoC (Evaluation of Potential for Creativity), is a creativity measure which is multifaceted and domain specific, as it measures two sets of micro-process (divergent-exploratory and convergent-integrative), in diverse domains of expression (Barbot et al., 2011, p. 63). This could be a useful technique to explore the link between world music education and creativity in further research because, as explained in Section 2.2, both divergence and convergence are occurring during the process of musical creativity in this domain.

However, the Torrance TTCT—Verbal and Figural (2007a, 2007b) have been chosen for use in this study, in conjunction with the Webster MCTM–II (2002) and the other qualitative measures described in Section 1.3. With a combination of measures, the multifaceted nature of creativity is more likely to be explored due to the fact that various measures will assess different capabilities. While some have criticised the TTCT as being a measure that only assesses divergent thinking (Barbot et al., 2011, p. 60), these tests have shown evidence of reasonable long-term predictive validity with measures of adult productivity (Cropley, 1971, 2001; Torrance & Ball, 1984). Runco (1993) and Treffinger (1987) have shown that children’s creative potential can also be predicted by divergent thinking tasks. The Torrance TTCT (1966, 1974, 1990, 2007a, 2007b) is also more widely used and referenced than other measures of creative or divergent thinking (Kim, 2011, p. 285). In addition to the divergent thinking assessment, Torrance added some further indicators, which he called creative strengths measures (Torrance & Ball, 1984). These measures cover aspects of personality and training and are listed and described in full in Section 6.2. Therefore, it could be argued that the TTCT considers process, personality, and product to some extent. These are all reasons for choosing the Torrance TTCT (2007a, 2007b) for this study, although as can be surmised from the multitude of approaches and techniques, there are always strengths and weaknesses in any measure.
In the context of this study, it is important to highlight a distinction made between “Big-C” and “little-c” creativity. Beghetto and Kaufman (2007) define this as the “distinction between eminent creative contributions (referred to as Big-C creativity) and everyday creativity (referred to as little-c creativity)” (p. 74). They state the concept of little-c creativity is useful as it allows for recognition and examination of the “more ubiquitous forms of creative expression, including the creativity of school-age children” (p. 74). Beghetto and Kaufman (2007) further argue that this is essential to “highlight the importance of considering the developmental nature of creativity” (p. 76), and to “accommodate the personal creative processes involved in students’ development of new understanding and personal knowledge construction” (p. 75). This explanation is very applicable for this study. The assessment of the multifaceted nature of the children’s creativity is done in the context of their development of new knowledge and expression in a pedagogical environment. Their creativity would be considered to be of the “little-c” variety in this case.

Finally, it is important to recognise that all of these creativity tests and approaches have been developed for use in Western societies. As discussed in Section 2.6, there are many other perspectives and so the effectiveness of the tests should also be considered in other cultural settings, as Rudowicz (2003) points out. She is critical about the use of tools based on the Western concept of creativity to assess creativity in other cultural settings. She argues “the demands of such a measure might be irrelevant to motivation processes, knowledge and cognition inherent in other cultures” (p. 286). As the children in this study are enculturated in Western society and are effectively measured for creativity in terms of that culture rather than creativity in the terms of the three cultures the music comes from, this may not be an issue for the implementation of the creativity tests in this study. However, in observing and analysing the creative displays expressed in the different musical traditions, it will be interesting to keep this in mind and comment on these other perspectives.
3. **Musical Creativity**

Music provides a powerful medium with which to demonstrate the phenomenon of creativity. Campbell (1990) states that “musical language may differ in both syntax and context from one tradition to the next, but the human need for music as a channel of creative thinking knows no cultural boundaries” (p. 43). Many authors discuss the concept of music being a medium that is open to syncretism or, in other words, it encourages the combining of different principles and practices (Aparicio & Jacquez, 2003; Lomax, 1976; Nettl, 1978; Reynolds, 1998). Such a characteristic of music “facilitates borrowing and assimilation between genres and musical cultures as a source of novel structures” (Merker, 2006, p. 29). In essence, this makes music a medium in which creativity can flourish and in which novel structures can evolve. Music education can provide a forum for imaginative, metaphoric and creative thinking in experimenting with different sounds and structures.

As with general creativity, there are many views on what actually constitutes musical creativity. Odena's definition of musical creativity provides only one way to approach the topic. “The development of a musical product that is novel for the individual and useful for the situated musical practice” (Odena, 2012, p. 203). Should musical creativity be thought of as a subset of general creativity? There will surely be aspects of creativity that are uniquely displayed through the medium of music. However, there is still little research on how musical creativity, displayed through phenomena of musical composition and improvisation, informs the understanding of general creativity (Hickey, 2003, p. 31). There may also be aspects of musical creativity that relate to the creative process, the environment in which it exists and the personality of the individual or group who are the creators. Therefore, an “integrated theory” of musical creativity may be a fruitful way to approach it, in a similar manner to the confluence or integrated theories for general creativity. This chapter considers some of the aspects that comprise musical creativity, the social and cognitive factors that influence it, and how these appear in various world music cultures.

3.1 **Views on Improvisation, Composition, Performance, and Listening**

In many discussions on musical creativity, the topics of improvisation and composition arise, as these processes provide the opportunity for new musical material to be developed. Scholars have both similar and conflicting views about how improvisation and composition are distinguished, but all seem to agree that they contain creative elements. Campbell (2004) believes that composition and improvisation appear to overlap and are distinguished in that
new music is planned or pre-arranged (composition) as opposed to the spontaneity of its generation in the moment of performance (improvisation)” (p. 196). Webster (1992) distinguishes them as he points out that composing includes the opportunity for revision, whereas with improvising, the product or process is not reconsidered for change.

One component of the creative process is that it is often iterative (Resnick, 2007), as ideas get refined and often reformulated. This supports a link between musical composition and creativity. J. Wiggins (1992) also refers to composing involving a planned aspect in her definition of composing as “a pre-planned performance of original musical ideas”, whereas she defines improvising as a “spontaneous performance of original musical ideas within the context of a real-time performance” (p. 14). Barrett (2003b, pp. 3–27) views the distinction differently, arguing that composing encompasses a range of musically creative activities, including improvising, listening, and performing; in her view these other forms can be regarded as part of the composing activity. This view is interesting: while the actions of listening, performing, and improvising all require emphasis on spontaneous behaviour, and composing has a stronger emphasis on pre-planning, all of these forms of musical behaviour involve spontaneity and planning to some degree. This aligns with the view that the creative process in general involves both spontaneity and planning. Campbell (1991a) seems to agree that listening, performing, improvising, and composing all encompass musical creativity, but for her improvisation is the highest form. She states that:

Improvisation ranks near the top in the complexity of its cognitive components. It necessitates extensive listening and performance experience to develop familiarity with a musical style, confidence in the performance of standard works within the idiom, and an independence of spirit that will allow the individual to experiment with new arrangements of representative melodies, rhythms, and textural elements within the style. (p. 23)

Her description highlights the fact that the creative process employed in improvisation not only involves exploration or experimentation with new ideas, but also a reliance on existing knowledge and familiarity with the domain—and both are required in creative thought. "Musical creativity and musicianship are mutually interdependent and interactive," Elliott (1995, p. 227) states, so a level of musicianship is required in a particular musical culture before you can be creative. This is inevitably a challenge in short series of world music workshops, where only little time can be devoted to the development of genre-specific skills and understanding.
It can be argued that the reverse is also true, as a level of creativity is required before one can truly demonstrate a high level of musicianship. However, the importance of familiarity with the domain means that the approach to musical creativity is dependent on the musical culture from which it emerges, a point which I emphasise throughout this study and will be relevant for improvisation, composition, performing, and listening. Given that children’s initial level of musical knowledge in the various musical styles will be non-existent or minimal, and the timeframe for the world music sessions is relatively short, it may not be possible to demonstrate any significant advances in musical creativity. However, it is important to remember that the study is considering “little-c” creativity and be cognisant of the developmental nature of creativity. The children’s improvisations and compositions are considered in this context. Therefore, their examples of “little-c” creativity may not require a comprehensive understanding of each of the world musics, and this study can focus more on their creative expressions rather than their expressions of musicianship in the world musical genres. A further longitudinal study which allows children to develop more familiarity with each musical style may also be useful to conduct at a later time. This would allow for a comparison of creativity dependent upon musical knowledge, and could bring more insight into this complex relationship.

Going back to Campbell’s (1991a) description of musical creativity, I would argue that it can also refer to musical listening, performing, and composing, not only improvisation. All these musical activities involve some reference to existing knowledge and familiarity with the domain in which they are conducted, while at the same time allow for experimentation with new ideas. The existence of creativity in musical performance and in listening is also supported by other researchers. Merker (2006) points out that musical creativity is not only exhibited in performance (in improvisation as already discussed), but also in finding “nuances, expressiveness, new structures, different dynamics and timing” (p. 26). Clayton (2011) discusses how in Hindustani music (and also possibly in a similar fashion in other musical genres), the listener interprets the meter of the music from key musical parameters such as the patterns of intensity or duration. He emphasises how this interpretation may differ from listener to listener depending on their cultural backgrounds (p. 33), so this could then produce different creative interpretations of the music. J. Wiggins (2002) supports the view that listening can be a creative process “in that individuals hearing and interpreting a piece of music recreate the music in their minds as they listen, bringing personal interpretation to the experience” (pp. 79–80). Hargreaves, Hargreaves, and North (2012) also talk about listening to music being an active and creative process. The children in this study
were given the opportunity to listen to the world music teachers playing their instruments, and this engaged their creative process as they interpreted the music in different ways.

Does this mean a strong faculty of imagination is required for musical creativity, as it has been previously proposed for all creativity? And that listening, improvising, and composing are activities where imagination is utilised? Adolphe (2001) discusses the importance of imagination for creative musicians, which allows the emotions of the music to be represented in the mind and then transmitted to the audience. Supporting this point is Altenmüller (2003) who believes that the most important element in the creative process is imagination. Elliott (1995, p. 228) also highlights the role of imagination with his statement that “imagining can play an important role in musical creating in several ways through the existence of an aural image, which enables composers, improvisers, performers and listeners to envisage new possibilities in their mind’s ear”, and Webster (2002) talks about composers’ “need to imagine sound combinations” (p. 19). As discussed later in this study, imagination is an important component of analogical thinking and both are integral to the creative process. This point further strengthens the argument for considering music as a useful medium to demonstrate creativity, given its frequent use of analogy in musical composition, as Dèliege (2006, p. 66) points out.

As discussed, there is opportunity for musical creativity in a performance which may not include improvisation. While Western music performance is more defined and has little room for improvisation, it facilitates creativity through interpretation. However, for many world musics, the processes of exploration and improvisation are key components (Campbell & Kassner, 2006, p. 382). In fact, the line between improvisation and composition does not exist at all in many musical cultures. In many African cultures, there is certainly an overlap. “A musical composition is a dynamic and changing sound creation” (Strumpf, Anku, Phwandaphwanda, & Mnukwana, 2003, p. 121) and a piece of music is almost re-created each time it is performed, and is dependent on the social and environmental factors. In this situation, it is difficult to make a distinction between performing, listening, improvising, and composing, as they all take place in the course of a musical performance. This raises a question about the extent of musical creativity in many world musics; do they provide the opportunity for even greater creativity, given their emphasis on improvisation and overlapping of performing and listening?

Whatever the distinction, improvising, composing, listening, and performing all involve the exploration of sounds, musical structure, and the nuances of musical style and, thus, can be considered to engage the creative process through this exploration of the new. Improvisation,
composition, listening, and performing can be all positively influenced through greater exposure to different sounds, musical structures, and musical styles. If we take Elliott's (1995) description of envisaging new possibilities, it could lead to a greater imagination though a multitude of different aural images, which would influence all the avenues for musical creative expression. Blacking (1973) expresses it another way by referring to this ability to imagine different aural possibilities as a more open mind, which then leads to greater creativity. He says that “people with open minds, who are low in ethnocentrism, reveal a comprehensive cognitive organisation, which potentially may be more creative” (p. 105).

In considering musical creativity, it is also important to think about its contextual influences. Many authors discuss the effect of sociocultural factors on musical creativity, in a similar manner to the sociocultural influences on general creativity previously discussed. Blacking (1973) believes that “musical creativity can be described in terms of social, musical, and cognitive processes” (p. 99). Elliott (1995) also considers musical creativity to be due to the individual as much as the contextual, following the aforementioned systems view adopted from Csikszentmihályi for general creativity, which considers the individual, the domain, and the field. Campbell and Kassner (2006) state that the development of musical creativity is a result of an interaction of factors, including “environment, musical thought or cognition and individual intellectual and personality traits” (p. 249), and the authors believe that as children build their musical experience, they move to higher levels of creative production. Burnard (2007) also believes in this model of musical creativity, where it is a product of an interaction of factors from the personal, social, and cultural, but she points out that more research is needed to understand “how” these factors influence the model (p. 1209). If the sociocultural has such a significant influence on musical creativity, then the context of learning music and the cultural background of teachers of different musics will shape the perception and output of musical creativity. What constitutes a creative musical performance in some cultures may be different in others. This is demonstrated by the need to adhere to certain rules and structures. For example, improvisation is an essential part of Hindustani classical music, yet the improvisation must remain within the melodic and rhythmic structures of a particular raga and tala (Lavezzoli, 2006; Napier, 2006). A knowledgeable audience in this culture will expect this from the performers and judge their musical creativity accordingly. So how musical output is judged—and hence the expectations of what is musically creative—depends on the domain and the field, a point also supported by Elliott (1995, pp. 215–219).
Hickey (2003) also promotes a model of musical creativity which comprises multiple sociocultural influences. Her model of musical thinking is based on Amabile's (1983) Componential Model of Creativity (developed for general creativity). It is dependent upon the social, is task-based, and measures levels of motivation, domain relevant skills and creativity relevant skills. Hickey advocates that “opportunities for sound manipulation” (p. 38) should be made available in the composition process to enable students to store different ideas. Csikzentmihályi and Rich (1997) talk about how in a performance situation (such as one that demonstrates musical improvisation), “what we call creativity is a phenomenon that is constructed through an interaction between producer and audience” (p. 46). Using Hindustani music as an example again, Rao (2009) comments that this is certainly true. She states that:

Audiences are expected to participate actively in the performance with interjections and gestures communicating their positive responses. A knowledgeable audience knows how and when to appreciate, while the performer is expected to be receptive to the audience reaction and be inspired, and rise up to the expectations of the audience. (p. 1)

In this case, the sociocultural influences listening, performing and improvising. These are just some of the numerous examples from the literature that refer to the sociocultural influences on the mechanics and perception of musical creativity. While we now move to consider some of the more cognitive influences, it is important to remember that sociocultural influences are ever present.

It is essential to point out in this context that the widely-held conception that improvisation is completely free is a fallacy. As Wade (2004) points out, in most world music traditions musicians use existing and often complex rhythmic or melodic patterns as a basis for improvisation. The improvising musician “exercises relatively great flexibility with given material during a performance” (p. 109). Similarly, Tillman's (1989) work with children's improvisations and compositions found that as children develop in their musical understanding and awareness, they swing between producing novel material and material that is based on existing conventions. These observations can be viewed in terms of the spontaneous and the planned, as previously described. Existing patterns and structures are required for both planned musical expressions but also for spontaneous ones. Lerdahl (1988, p. 248) discusses how without repeated exposure to set patterns and structures (such as diatonic or chromatic intervals), listeners cannot spontaneously organise new musical input in terms of these structures. Blacking (1973) gives support to this argument when he says
that “the creation and performance of most music is generated first and foremost by the human capacity to discover patterns of sound and identify them on subsequent occasions” (p. 9). Kippen (2000) discusses how this knowledge of existing patterns and phrases is relied upon in much of the improvisation in Hindustani music. This supports the case for learning new musics, as this means it is worthwhile to have exposure to a variety of new and different structures, so a degree of spontaneity can be achieved. Merker (2006) discusses how music consists of a number of discrete and non-blending elements, such as different pitches and different rhythms. She describes how “combining them allows for infinite pattern diversity” (p. 31) and a “limitless scope for creating qualitative novelty” (p. 32). Pressing (1988, pp. 152–166) presents a model of musical improvisation that utilises the various types of schemata (different rules, frameworks, stereotypes) that is used as a reference during improvisation. His model defines a set of arrays derived from different combinations of musical features or characteristics and shows the different ways existing musical references can be combined to produce novel material during the improvisatory process. Again, the different combinations could be infinite. Music provides an excellent medium to exhibit this infinite diversity. However, this infiniteness is usually constrained by historical and cultural factors, as it is important that composers and improvers adhere to the rules of their musical culture to be judged as successfully creative musically; what is deemed musically creative in one culture or era may not be understood or appreciated in another.

Another way of considering the infinite diversity of possible musical combinations that allow for musical creativity to emerge is to consider the type of models presented by Collins (2005) and Burnard and Younker (2004). Collins conducted a noteworthy, in-depth study of a professional composer’s process and perspectives, with a three-year single case study of a composer, undertaken in order to track his compositional process in real time. From this analysis, Collins developed a model which views the compositional process as a synthesis of stage process models of general creativity (Wallas, 1926) and Gestalt theory. “The composer at the outset appeared to possess a mental ‘picture’ of his composition” (Collins, 2005, p. 203), which acted as a loose framework within which the ideas needed to fit. This model involved restructuring the musical problems to solve them and sometimes also encompassed Gestalt moments of insight to consider how a theme needed to fit into the overall whole (p. 208). While there are elements of linear development at a micro level (such as changing harmonies to fit the melody better), the overall process is different from a traditional linear stage process as it is recursive—“each subsequent moment of ‘illumination’ or restructuring and its corresponding verification/implementation is only one step in an overall constructive process and may occur any number of times, although it is not always as a recognizable
Gestalt insight” (p. 210). World music has many examples of iterative processes and therefore it may be that children learning in this environment can draw on these moments as a catalyst to engage with this process model.

Burnard and Younker’s (2004) model is also a stage process one, based on Webster’s Model of Creativity (2002). Webster describes creative thinking as a “dynamic process of alternation between convergent and divergent thinking, moving in stages over time, enabled by certain skills (both innate and learned) and by certain conditions, all resulting in a final product” (p. 26). Burnard and Younker’s (2004) study involved a comparison of student composers, aged between 11 and 20 years. They found that “thinking convergently and divergently across stages of the creative act are integral parts of creative thinking” (p. 71) and there appear to be universal characteristics, albeit across three similar cultures, of creative thinking, specifically with regards to the presence of problem-solving in composition. With both Collins (2005) and Burnard and Younker’s (2004) models, the diversity of musical combinations come from the recursive nature of the models, the constant alternating between convergent and divergent thinking. Finally, it is important to mention the effect of motivation that stems from the creative process. Creativity can be a motivating force, which in turn can encourage greater creativity. As Lowe (2002) asserts, “creativity operates as a gateway to a deeper understanding in music, as long as the student maintains a degree of ownership, and therefore a greater personal stake, in both the process and the product” (p. 94). In his research, Lowe found that students engaged more readily with activities involving creativity.

These discussions indicate that musical creativity has strong parallels with general creativity. As the systems view of creativity emphasises the importance of knowledge and familiarity with the domain, most music research points to a similar requirement in order for creativity to emerge. The elements of pre-planning and spontaneity are both evident in musical creativity, as is a strong role for imagination. To what extent an improvisation is planned or is spontaneous, and how this relates to the degree of musical creativity, is an interesting concept to explore. If the improvisation draws on mainly planned material, does this make it less creative? The amount of planning and structure that new students use will be explored in the world music case studies; as the musical traditions selected incorporate improvisation, they can provide a useful vehicle to assess some of these concepts. What is certainly shown by the literature is that the combining and association of different structures and patterns (a characteristic of general creativity) is evident within the musical field, perhaps even in a more obvious fashion than in other domains.
3.2 Children’s Creativity: Play, Spontaneity, and Free-song

Now that various aspects of musical creativity have been examined, it is worth considering some specifics that relate to children's creativity. Many educators and researchers acknowledge that childhood is a period when creativity flourishes (Jalongo & Stamp, 1997), but are there differences with adult behaviours in how children approach and demonstrate creativity? Psychologists have observed parallels between creativity and children's play (Mottweiler & Taylor, 2014; Sawyer, 2003) and it is certainly evident in the musical domain. Much of the literature on musical creativity highlights the importance of children's use of play. Duffy (2006) illustrates how imagination and creativity are essential elements of play, and says that “play promotes the flexibility and problem-solving skills that are needed to be creative” (p. 25). There is something distinctive about musical play according to Duffy (2006); how it inspires imagination with its unique access to body, sense, and affect, and that musical play has a unique way of inspiring imagination. Campbell (2010) describes how children learn as they engage in creative play through a “type of free exploration” (p. 7) and E. Harwood (1998) discusses how children are able to create their own musical variants through playing musical games. In other words, using play, children can experiment with different options and combinations and try new experiences to see what works best and what they like best. As the play activity is enjoyable, children feel more confident, relaxed and more open to this exploration. Burnard and Chu (2006) describe how children instinctively explore concepts and discover meaning, and this exploration of ideas allows their worlds to be seen in new ways. Through the activity of play, children are able to create their own free style songs. Campbell (2010) believes that these children’s musical utterances and spontaneous songs are “just the starting points for more creative expressions to come” (p. 252).

As playfulness is a characteristic that decreases with age (Csikszentmihályi & Nakamura, 2006, p. 244), children have a theoretical advantage over adults in its use towards greater creativity. An interesting point is that there is evidence that these free and spontaneous musical expressions and behaviours of children may be quite similar across cultures (Bjørkvold, 1992; Brailoiu, 1954; Campbell, 1998; Marsh, 2008; Riddell, 1990). Marsh’s (2008) work showed that many children’s singing games—with their interplay of singing, dancing, and chanting that occurs in playgrounds across the world—are similar, despite culturally distinctive repertoire. From a cross-cultural perspective, aspects of children's play and the resultant musical activities may therefore share similar creative processes.

Elliott (1995) also talks about the creativity and spontaneity that is particularly evident in childhood rather than in adults (p. 221). He advocates that spontaneous originality ought to be treasured and nurtured in children, as it may play a role in creative achievement later.
However, Elliott (1995) does make a distinction between the conscious and subconscious development of musical material. However, he does not classify spontaneous or subconscious activity as creative, as his view is that "creative efforts are intentional" (p. 222). If we assume that spontaneity is involved in children's free-song, then Elliott's view is that while novel musical material may be produced during this activity, it does not constitute creativity. This does not align with the view that the creative process in general involves both spontaneity and planning.

Using the Consensual Assessment Technique (Amabile, 1983) to measure creativity, Howard-Jones, Taylor, and Sutton's (2002) study with 6–7-year-old children showed that preceding a task with a session of free-play (involving the same materials to be used in the task), compared to preceding a task with a highly structured and didactic activity, can positively influence children's creative output. This is an interesting result, as it implies that engaging in a session of play prior to a creative task will enhance the subsequent creative output. While this study was not conducted in the musical field, this approach could be adopted prior to creative musical tasks.

One of the characteristics of musical and general creativity—the combining and association of different structures and patterns—is also evident in children's creative processes. Barrett (2006, p. 201) references numerous studies of children's invented songs (Bjørvold, 1992; Davidson, 1994; Davies, 1986, 1992; Dowling, 1984; Mang, 2005; Moog, 1976; Moorhead & Pond, 1941/1978), which suggest that children construct these songs by adopting and adapting the musical structures they have already encountered as listeners and singers. Barrett (2012) also believes that children draw on songs and music from their own culture in their invented song-making (p. 76), and also says that this highlights the importance of listening to a range of musical forms and style for a child's development. This increased exposure may come from listening to and learning other world musics, which could contribute to their invented song-making at this stage. Barrett (2006) talks about the increasing influence of their own musical culture, which shows that "as children develop, they draw increasingly on the musical forms of their culture to make standard songs, where known songs are adapted and shaped to children's own purposes of play, expression, and communication" (p. 204). Barrett also describes another type of song identified by Bjørvold, called "song formulas" (Bjørvold, 1989, p. 64), which is more like chanting, and emphasises children's use of musical formulae in communicative/play interactions with others. However, other authors discuss how children are very capable of integrating material they may hear from cultures other than their own. For example, Chen-Hafteck (2013) discusses the "unique musical expression and creativity exhibited by Hong Kong children through the exposure to
Chinese and Western influences” (p. 415). Emberly’s (2013) study of the Venda children found that they adapted their “traditional music to a modern context, such as newly composed lyrics” (p. 92) and Whiteman (2013) presents the case of a 5-year-old boy who after learning a modern worship song in his school choir, “improvised with beat box vocalisations, new words and melodies and incorporated dance moves” (p. 471). These examples highlight the flexibility that children have for combining and integrating a variety of influences in their musical creations. Contradicting all these other authors, surprisingly, is Dowling (1988, p. 116), who says that spontaneous singing in early childhood does not use a pre-requisite of scales and pitch patterns, which have been learned from exposure to their own musical culture, or indeed any other musical culture. This position seems a little difficult to defend in the light of the evidence before us. I would agree with most of the previous researchers in that it makes sense that children utilise learned patterns in music and combine them in a variety of ways to create novel musical outputs.

A distinction in the creative process between children’s and adult’s improvisations is proposed by Kratus (1995). He suggests that while children can improvise, “most beginning improvisation students, especially young students, improvise with a process-orientation. In other words, they consider improvisation to be a doing rather than a making” (p. 28). So their focus is on the process, rather than the end result. Kratus (1995) states that:

The music created by students at the level of process orientated improvisation has moments of structure created by such means as a briefly repeated pattern or a short reference to a tonal centre. But the students’ process-orientation focuses their attention on the short-term present, and they do not organize their music in terms of larger syntactic structure of metre, tonality and tempo. It can be said that a process-orientated improvisation has some micro-structures but no macro-structure. (p. 32)

If this is the case, then perhaps children do not have a more overall or holistic understanding of the music they create, but rather focus on the individual, smaller elements and take an atomistic approach. It may be that children cannot relate to Gestalt moments of insight, as Collins (2005) previously described of adult composers.

Regardless of whether children’s processes are more atomistic or holistic, they do employ other elements associated with general creativity. The use of repetition and elaboration are evident, together with development of new material, according to Barrett (2006). She refers to her own and other author’s studies that demonstrate “repetition and/or re-working and elaboration of familiar material such as children’s songs, rhymes, and songs from popular culture, and the generation of original material through spontaneous improvisation,
repetition, and development in the performance of song" (p. 204). Barrett (2006) further suggests "that for children their focus in invented song-making is one of elaboration, of using this practice to explore ideas and possibilities" (p. 216). Key characteristics of elaboration, repetition, accentuation, theme and variation, anticipation, surprise, building to a climax, and resolution may be developed through careful attention to and valuing of invented song as it occurs in children's individual and joint music making (Barrett, 2006). With Barrett's (2006) strong promotion of the importance of elaboration as a characteristic of creativity, this will be an essential element for this study to assess, to determine how it is demonstrated in the world music context. Will the focus on improvisation in many of these world musics allow for an even greater emphasis on elaboration? And will the children's skills in elaborating strengthen even further by combining with their natural ability in this area? If so, this is another point to support the learning of world musics to enhance creativity.

There is a large amount of support from previous research for the influence of sociocultural factors on children's musical creativity. Piscitelli (2012) follows Vygotskian theory that posits children's creative growth occurs when engaged in collective activities, via collaboration with more capable peers and through adult guidance. Burnard (2006) emphasises the importance of “sociocultural situatedness and contextual perspective” (p. 114) in understanding children's musical creations, and Shehan Campbell and Wiggins (2013) present many studies that show how children's musical outputs reflect their environmental influences. Hargreaves (1999) points out that research of children's creativity should be conducted in a sociocultural context, which provides a more natural educational environment, rather than in a more isolated school environment. In this way, it captures the potential sociocultural influences on children's creativity. Barrett (2003b) says that children's "compositions are responses to the social and cultural contexts in which they work and through which they generate meaning" (p. 23). Finally, Gordon (1989) feels that the sociocultural is perhaps the most influential factor when he says that "the quality and extent of one's early musical environment, which will affect one's overall music aptitude, is perhaps the most powerful factor in determining the extent to which one can become musically creative" (p. 79). This point certainly makes sense, when you consider the musical influence of certain cultures on their next generation; for example, the encouragement and emphasis placed on learning music in Rom culture, where children usually follow the elderly family musicians, imitate their playing, and are exposed to music making in numerous social contexts from an early age (Petrovic, 2009).

Taking all these views into account, it was important for this research to understand how the environment in which children learn the new world musics plays a part in their musical creativity. As they were learning in a group situation, this impacted on their musical
creativity (the dynamics of group versus individual learning will be discussed in a following chapter). The workshops strived to create an atmosphere which imparts a sense of belonging and confidence, conducive for musical creativity to occur. As the world musics were learned out of context to the social environment from which they are usually performed, there were evident constraints on how readily children could feel part of these new musical cultures.

If sociocultural contexts provide either a limitation or a stimulus on children’s creativity, then this fact needs to be considered when using a measurement tool such as Webster’s MCTM–II (2002) to assess the children’s musical creativity. This assessment will not be undertaken in the world musics’ sociocultural contexts, as it is conducted on an individual basis and even out of the traditional context. Furthermore, the measurement criteria may be different from the children’s own perception of creativity, as Barrett (2005) describes. She makes an interesting point when she suggests that adopting the systems view of creativity means that children’s musical outputs, which include their free-song/improvisation, are part of their own children’s culture and as such should be judged by them, not adults (p. 189). In essence, the children have their own standard of musical creativity. I will endeavour to assess the sociocultural factors using interviews, observations, and feedback from the children and the world music teachers, and this can be used in conjunction with the MCTM–II to build a picture of musical creativity which incorporates some reference to important sociocultural influences.

In assessing children’s creativity, it is important to understand how it can differ across age groups. Swanwick (1988, p. 67) describes the loss of creativity and spontaneity that occurs as children become more aware of a shared world of musical ideas and structures, which they then use in their musical activities, rather than their own unique ideas and structures. He says that this stems from a desire to become conventionally proficient (p. 78). However, once a greater level of cognition is reached, there is a return to characteristics that promote creativity. Imaginative deviation or speculation begins to occur from ages 9–11 in a more conscious way, with “considerable experimentation, a desire to explore structural possibilities, looking to contrast very established musical ideas” (p. 78). So while the spontaneity that is shown in earlier years and that is important for the development of free-song may diminish, another factor takes its place, which contributes to creativity in a different way. The creative process may be more calculated than previously, but with the increased level of knowledge and a more deliberate, iterative approach, creativity is still achieved. This highlights a key difference in children’s and adults’ creative processes.
Another age consideration that impacts creativity is in children's representational abilities. Davidson and Scripp (1988, p. 214) describe how by 7 years of age, children have a dramatic increase in representational skills, which allows them to represent rhythmic and melodic patterns or structures. Using this premise, there is an implication that children may now more easily access, record, memorise, and associate these structures, using these mental representational skills. Association of different musical structures is certainly a facilitator in creating new musical material. However, the ability to do this means that children may be more likely to apply to existing structures than explore original ideas, which emphasises Swanwick's point.

Elliott (1995) believes that all children can learn to be musically creative. However, as I will argue in the Chapter 4, the instructional method influences children's creativity. Tafuri and Baldi's (1999) study of 132 children, aged 7–10 years, found semantic or meaning-based instructions from teachers generated more creative musical output than a rule-based instruction. Various authors (Brophy, 2001; Coulson & Burke, 2013; Scott, 2007) advocate that teaching musical improvisation to students can provide the opportunity for the expression of musical creativity in the classroom. This is one of the reasons that world musics, with their focus on improvisation, can be a useful tool to achieve this objective. Further analysis of the influence of the teacher and the pedagogical approach on children's creativity will be looked at in Chapter 4.

In understanding children's creativity in a world music context, it is very useful to consider work done by Fung (1997). This study examined the effect of a sound exploration program on children's creative thinking in music. The curriculum included “extensive activities on the nature of and experimentation with sounds, critical listening, improvisation, related arts, and knowledge about the orchestra” (Fung, 1997, p. 15). Webster's MCTM–II (2002) (discussed in more detail shortly) was used in this post-test only study. The results of Fung's study showed significant differences for the three groups of children in musical flexibility, musical originality, and musical syntax (the extent to which the response is inherently logical and makes musical sense), but not in musical extensiveness (the amount of time involved in the creative tasks). The group that participated in all the activities increased their levels of musical creativity, according to the MCTM–II criteria. This study showed that children may become more ready to fulfil their potential for music creativity after participating in a non-traditional sound exploration program. However, this study did not involve specific learning of different musical styles and structures, as I am proposing to do with the case studies in this research. It will be interesting to see if similar increased creativity results and findings are also demonstrated after this participation.
A number of the ideas discussed in this section have important implications for my research. It will be important to create a learning environment where free and spontaneous expression is encouraged, in addition to a more structured and guided improvisation. This will enable inquiry into the degree of spontaneity and the degree of planning that is used by children in the case studies while improvising, composing, listening, and performing in the new world music styles. During these musical activities, I want to know whether the children rely on learned patterns and how they may elaborate the musical material. I also want to understand what inspires them during these improvisations. Do the children consider themselves to be demonstrating musically creative processes? To what extent does the influence of the group alter their musical ideas and activities? Investigating these questions can contribute further knowledge on the ideas discussed in this chapter.

3.3 Measuring Musical Creativity: Webster’s Model and Other Ways of Measurement

In considering any measure of musical creativity, it is important to remember that such measures inevitably depend upon the definition of musical creativity and its context. As Burnard (2012) says, “musical creativity manifests itself differently in different spaces” (p. 333). This means that the views of people from different cultural backgrounds about what they believe to be musically creative need to be considered. What is considered musically creative in Hindustani music, or in Javanese music, or in children’s social groups, may differ. As already discussed, there are also different perspectives of what comprises musical creativity. How we assess the level of musical creativity as demonstrated through improvisation may be different to the assessment of musical creativity as demonstrated through listening. There is also the issue of whether to assess the musical output, the musical process, or the musicality of the individual or group. As discussed in Chapter 2, the same key argument holds for musical creativity as for general creativity: whether the creative process is ultimately the key factor in determining creativity. Given the different perspectives, any assessment method chosen to measure musical creativity must be understood for its suitability, its assumptions, and its limitations. It is also important to consider the validity and reliability of different assessment methods and how well they have been established.

As with many assessment methodologies, it is possible to take a qualitative or a quantitative approach. Auh (2000) discusses these two different styles and refers to a number of studies, showing examples of both styles. Some examples demonstrating the qualitative approach to measuring musical creativity are:
1) interviews (e.g. Barrett, 2000; Collins, 2005; Freed-Garrod, 1999b) observations in music classes by teachers over a period of time (e.g. Freed-Garrod, 1999a; Levi, 1991), 3) researchers’ work with children for composing music in informal settings, 4) students’ work on computer composing music by themselves, which is saved on computer and examined by the researcher (e.g. Folkstad et al., 1998; Hickey, 1997). (as cited in Auh, 2000, p. 2)

Another qualitative example is Amabile’s 1983 Consensual Assessment Technique for rating the quality of art products. Hickey and Lipscomb (2006) present evidence of its use and success in measuring the creativity of musical compositions and improvisations. The advantage of using a qualitative approach to measurement is that it allows for different perspectives and contexts to be considered and all influencing factors on musical creativity can in some way be gauged. However, it is a more subjective way of assessment, and can therefore exhibit variations due to the bias of the assessor.

Purely quantitative approaches to measure creativity may appear counter-intuitive. However, studies can use various ways that employ quantitative methods to collect and analyse data on musical creativity. Auh (2000) suggests some examples of studies that utilise quantitative methods, while still involving some qualitative aspects are:

1) composition tests followed by expert judges’ evaluations of the compositions using scored criteria (e.g. Auh, 1999; Kratus, 1994; Webster, 1994), 2) measures of creativity in music devised by researchers (e.g. Baltzer, 1988; Webster, 1987) and 3) videotaping students’ behaviours in composing music, aspects of which are codified using computer programs, such as the NUD•IST computer program (e.g. Brand, 2000; McPherson, 2000). (as cited in Auh, 2000, p. 2)

Another interesting quantitative study of musical creativity was undertaken by Simonton (1987). Using his computer analyses of compositions by Mozart, Beethoven, and others, he investigated musical creativity and musical aesthetics by assessing levels of musical originality (Simonton, 1987, 1993). While the purely quantitative approach taken by Simonton may bring an understanding of the correlation between the popularity of Beethoven’s compositions and their melodic and rhythmic originality, it is only considering one aspect—originality. This analysis does not comment on or demonstrate composer creativity necessarily. Nevertheless, an advantage of the quantitative approach is that once the assessment criteria are established, there is little room for subjectivity, rendering results more easily comparable. However, it is important to understand the assumptions used in the assessment criteria, otherwise the results may be incorrectly interpreted.
The field of creativity makes a distinction between the product-process-person-environment approaches to assessing creativity, as described in Chapter 2. To assess musical creativity, these different approaches could also be taken. I argue that a research study that involves all these different approaches will be able to explore the influences on musical creativity in a more holistic way, and may raise some interesting contradictions, and/or reinforce findings and highlight any inter-related complexity in the data. Using Kincheloe’s (2004) terminology of a bricolage that provides for multi-perspectives in research, qualitative and quantitative data can be brought together to assess the influences of musical creativity from the product-process-person-environment perspectives. This multi-perspective approach to explaining creativity is also supported by Sternberg and Lubart’s (1996) confluence theories of creativity, as described in Chapter 2.

The product approach in terms of the musical domain is the assessment of musical output. Webster’s MCTM–II (2002) takes a product approach, as does Auh (1999), who uses the criteria of originality, structure, and expressiveness for assessing creativity in musical compositions and Kratus (1994), who uses the criteria of tonal coherence and rhythmic coherence (a criterion that may fail to assess the creativity expressed in free jazz or similar styles, it should be noted). Webster’s MCTM–II (2002) is probably the most well-known and thoroughly researched tool for assessing creative thinking in music and this is one of the reasons I have chosen it for this study. Webster’s view was that musical creativity is dependent on musical aptitudes, conceptual understanding, craftsmanship and aesthetic sensitivity and is an interplay between divergent and convergent thinking. There are also non-musical factors which contribute such as “motivation, subconscious imagery, personality and environment” (Webster, 1989, pp. 68–69). He considers improvisation an important component of musical creativity and he uses improvisatory tasks in the MCTM–II. In his own words, his measure “engages children in improvisatory and quasi-improvisatory musical activities with simple but expressive musical instruments. Musical imagination is encouraged through divergent thinking tasks, but there is also a sense of structure that allows for measurement of musical order and meaning” (Webster, 1989, pp. 59–60). Webster’s model used earlier quantitative approaches to assessing musical creativity, developed by Vaughan (1977) and Gorder (1980), as a basis for developing his approach. A set of psychometric tools, Vaughan’s measure was to “play along with rhythmic and melodic ostinato, to answer rhythmic and melodic patterns and to improvise an original piece of music” (Webster, 1989, p. 59). The criteria used to assess musical creativity measured fluency, rhythmic security, ideation, and synthesis. Gorder’s measure used a similar approach and assessed fluency, flexibility, elaboration, originality, and musical quality.
The creative process is described as consisting of four stages, according to Wallas (1926): preparation, incubation, illumination, and verification. While this thesis discusses a variety of creativity process models such as association (I. A. Taylor, 2007), others, including Collins (2005), and Webster (1987) have applied Wallas' (1926) model in their approach. Wallas' (1926) theory is still praised even after many decades (Auh, 2000), and can provide a useful basis for a process model of musical creativity. Webster (1987) used Wallas's four stages for his conceptual model of creative thinking in music. Webster's MCTM-II (2002), therefore, also considers the musical process involved in creativity, not just the musical product. The following is a diagram of Webster’s model of the musical creative process which shows the four stages and their relationships.

**Figure 3.1: Webster’s Model of Creative Thinking**

A more detailed explanation of the tasks in Webster's MCTM–II (2002) and how it is implemented follows:

The measure uses three sets of instruments: (1) a round "sponge" ball of about 4" in diameter that is used to play tone clusters on a piano (either in a rolled fashion or as individual clusters), (2) a microphone that is suspended in front of the piano and is attached to an amplifier and speaker, and (3) a set of five, wooden resonator blocks (temple blocks) that produce different pitches when struck by a mallet. (Webster, 1989, p. 60)

The tests ask children to enter into a kind of musical question and answer dialogue with the mallet and temple blocks, and the creation of songs with the round ball and the piano and with the voice and the microphone. Children are then encouraged to use multiple instruments in tasks whose settings are less structured and finally to create a composition that uses all the instruments.

There are four criteria that are measured in the MCTM–II.

These are: Musical extensiveness, musical flexibility, musical originality, and musical syntax (explained in some detail in the discussion of creativity tests in Section 1.3).

As the process and product perspectives have been discussed, it is also important to consider the person and environment perspectives. The influence of sociocultural factors will be assessed using interviews, surveys, observations, and feedback from the children and the world music teachers. The effect of their learning environment and their musical backgrounds will be determined using these methods. As the different world musics will be taught in a group environment, questions can be asked about the effect of the group on their creativity. Factors related to the personal characteristics required for musical creativity have been investigated in previous composition studies (such as Auh, 1995; Kratus, 1994) and include musical achievement, musical aptitude, informal musical experiences, formal musical experiences, music self-esteem, academic grades, IQ, gender, and age. Children’s attitudes to their musical expression, considering the aspects of listening, improvisation/composition and performing, will be assessed both pre and post-participation in the world music sessions. A broader understanding of the children’s musical processes whilst in a creative mode can also be elicited in a similar manner, so the assessment is not only reliant on the MCTM–II. The issue of different views of creativity across cultures can be explored by understanding how the world music teachers view the children’s musical expressions. Will the Hindustani music teacher value improvisation as the highest level of creativity and how important is the
performance aspect within the West African djembe teacher's view? These will be some of the questions to explore.

In summary, for this research study, I will take a combination of both the quantitative approach with Webster's MCTM–II (2002) and the qualitative approach with interviews, surveys, and observations for the assessment of musical creativity. Using these methods of assessment in conjunction with each other, the research study aims to build up a picture of musical creativity observed from different perspectives.

### 3.4 Cultural Differences and Similarities in Music

Regardless of the style or genre, creative thinking in music requires command of the language of music, as Campbell (1990) comments (p. 44); inevitably there is a reliance on existing knowledge and familiarity within a specific domain for creativity to occur. Chernoff (1979) suggests this is compounded when we cross cultural boundaries:

> When we try to understand the music of a different culture or historical period, we must be prepared to open our minds not only to the certainty that people will have different standards for judging musical quality but also to the possibility that they may have an entirely different conception of what music itself is. (p. 31)

I have described how children depend upon learned melodic and rhythmic patterns in their musical creativity, a theme also emphasised by Gordon (1993). Musical creativity requires a degree of familiarity with melodic, rhythmic, and formal elements.

As I will briefly explore in this section, there are many differences across cultures, as well as similarities, in the way music is structured and processed, in music’s role in the sociocultural environment, and in the way that creativity is perceived across musical cultures. Understanding these similarities and differences across different musical cultures and acquiring these in our musical memories can contribute to the development of a broader and maybe more flexible musical knowledge. It may allow for an individual’s musical creativity to flourish across a variety of musical styles. This is illustrated by the world-renowned cellist Yo-Yo Ma, whose performance and educational career has spanned the spectrum from Western classical music to a variety of world musics.

Working across cultures, one has to be aware of the tendency to generalise from a single cultural perspective. For instance, the discrimination of consonance and dissonance is often cited as a human universal, with dissonance treated as displeasing (Fritz et al., 2009, as cited in Brandt, Gerbian, & Slevc, 2012, p. 1). However, these authors point out Bulgarian
folksingers “consider such interval combinations as representing a beauty which is likened to the sound of ringing bells” (p. 2). They also mention that “playing in tune is something Westerners frequently take for granted: the beating created by out of tune notes is considered unpleasant. However, Javanese gamelan ensembles are deliberately de-tuned by small intervals to create beating; notes in perfect accord would be considered ‘wan and lifeless’ (Tenzer, 1991, p. 33)” (as cited in Brandt et al., 2012, p. 2).

Juslin and Sloboda (2010) describe the powerful ability of music to elicit and change emotions in the listener or performer. While this concept is similar across different musics, there are different ways employed to do this, such as the contrasts within a single mode in Hindustani music, or key modulations in Western music (Wade, 2004, p. 125). Brandt et al. (2012) discuss how in Western classical music “there is an established emotional attribution with the contrast between the major and minor modes: the major mode is associated with positive affects such as joy, triumph, and tranquillity; the minor mode is associated with negative affects such as grief and anger” (p. 2). However, there are examples of differences in the way some cultures use these emotional associations. For example, some cultures, such as Spanish and Slavic, use minor keys for happy music. There is a view that some emotional cues in music are cultural universals (Balkwill & Thompson, 1999; Juslin & Västfjäll, 2008), but in fact many studies report culture-specific diversity with regard to perception and cognition of structural elements of music (Morrison & Demorest, 2009; Stevens, 2012). Balkwill and Thompson (1999) demonstrated in their study that people are sensitive to musically expressed emotion in an unfamiliar musical system, so emotional cues can sometimes be identified cross culturally. In a recent study involving Swedish folk music, Hindustani classical music, and Japanese traditional music, Laukka, Eerola, Thingujam, Yamasaki, and Beller (2013) found that “the musicians’ expressive intentions could be recognized with accuracy above chance both within and across musical cultures, but communication was, in general, more accurate for culturally familiar versus unfamiliar music” (p. 1). They concluded that a combination of both universal and culture-specific factors contribute to the communication of emotion in music. While there are differing views amongst authors on this topic, it seems plausible that it is a combination of some more or less universal, and many culture-specific factors.

While entrainment to a steady pulse is frequently cited as a universal feature of ensemble music across the world (Cross, 2012), there are some exceptions. Mongolian khoomi throat singers chant in groups without a steady beat (Levin & Edgerton, 1999) and a distinctive feature of much Bulgarian folk music is its asymmetrical meter (Rice, 1994). Bartolome, wa Mukana and Oehrle (2011, p. 7), also discuss the difference in rhythms across cultures. They
describe how African rhythm has a different set of principles from Western rhythm, as the former is mostly linguistically derived. Bartolome et al. (2011) states that "the impact of the language is also felt in the instrumental rhythmic structure" (p. 10). Instrumental music is divided into units of time, that is, organised patterns referred to as a timeline. "The final rhythmic tapestry of a piece stems from the relationship created by its combination with other patterns" (p. 10). A time-line pattern is recycled, not repeated—part of the development that occurs in the performance/composition process—and this is different to Western linear rhythmic patterns. Similarly, the Javanese colotomic rhythmical structures are cyclical in nature (Brinner, 2008). Kwami, Akrofi, and Adams (2003) discuss how there can be limitations in "imposing an understanding predicated on a linear conceptualisation on musics that are cyclically structured" (p. 268), as are the African, Indian, and Indonesian traditions. In a similar way, one of the hallmarks of African rhythmic organisation is additive patterns (Nketia, 1974), a characteristic that Hindustani music also displays. This distinctive characteristic cannot be translated to other musics so easily, although Western composers such as Glass and Messiaen have been influenced by it and incorporated the concept into their compositions. The interlocking kotekan rhythms of Balinese gamelan, where different instruments play different parts of the melodic pattern to create the rhythmic texture (Tenzer, 1991), is another distinctive rhythmic style.

The description of key musical concepts can be perceived differently across cultures. In Western music, the different frequencies of notes are notated on a stave, where pitches are perceived to increase from low to high as one progresses up the scale. However, in Javanese music, lower pitches are referred to as being small and higher pitches as large and the gamelan music is notated using a set of recurring cycles of numbers for each instrument (Brinner, 2008). The same applies for much sub-Saharan African music (Tracey, 1948).

The use of improvisation is an element that characterises many of the world's musics. Campbell and Teicher (1997) describe how "across historical eras and cultural regions, improvisation is a common thread that unites many of the world's musical practices" (p. 29). Both south and north Indian traditions "place the highest value on imaginative extemporization, within the parameters of tradition, as an ideal of musical culture” (p. 30). Although much of this spontaneously improvised music may in fact be based on memorised or rehearsed material, there is still the highly-regarded skill needed to reference a particular phrase or sequence of phrases at a given moment in the performance (Kippen, 2000; Slawek, 1998; van der Meer, 1980). The emphasis on this ability to improvise means that in the Indian musical culture:
The profile of an accomplished, improvising musician... undoubtedly includes aural and kinaesthetic abilities to hear and then play (or sing) standard patterns within the musical style, and a capacity for creativity in knowing which patterns to insert (or invert, fragment, or otherwise vary) at what musical moments. (Campbell & Teicher, 1997, p. 38)

However, most improvisation is quite structured in that it "requires appropriate and acceptable invention within the style" (Campbell & Teicher, 1997, p. 38), using new permutations from the music they have already acquired. This is in contrast to Western classical music, which today concentrates more on the acquisition of reading and notation skills, rather than this improvisational ability. This was not always the case, however, as the early practice of Gregorian chant, the ornamentation used in a wide variety of music during the early Baroque period, and the cadenzas of pieces for solo instruments and concertos during the Classical period all promoted the importance of improvisation (Bailey, 1992, p. 19). In African music, the social dimension of music is stressed, and this "bears greatly on the nature of improvisation" (Campbell & Teicher, 1997, p. 33) and a drummer's improvisations are a demonstration of his involvement with the social situation (Chernoff, 1979). A drummer's improvisations may change the melodic pattern, while still keeping the tradition of the piece. This means that the drummer may "revitalise it and adapt it to the new situation" (p. 65), and the listeners appreciate this creativity in terms of the success of the social occasion. Chernoff (1979) also discusses how the master drummer's "varied improvisations will isolate or draw attention to parts of the ensemble more than they seek to emphasise their own rhythmic lines" (p. 60).

Improvisation can be both of a melodic and a rhythmic nature. In musics where rhythm is the predominant element, improvisation may focus on this. To explore this further, in much sub-Saharan African music, the drums play individual patterns which are first fixed and then allowed to vary (Agawu, 1995). The initial patterns and their relationships are established and repeated, and:

improvisations may include adding a suffix, extending the pattern, changing accents, introducing new and more intricate patterns, shifting the alignment of a pattern with the referent time line, or increasing rhythmic density... Musicians keep time not by following a stressed beat but by perceiving rhythmic relationships. The beat and tempo must be internalized by the musician in order to know where to position an individual rhythm pattern correctly and create new relationships with other patterns. (Campbell & Teicher, 1997, p. 34)
The listener, as well, must be able to identify these patterns in order to appreciate the creativity (Chernoff, 1979).

While there are myriad musical structures employed in the world's musics, many researchers have considered the question of whether all humans perceive musical structures in a similar way. That does not seem likely. “Similarities are rare and unsystematic” in musical structures, states D. L. Harwood (1976, p. 528). For example, musical structure is different in that many traditions in west, south and east African music emphasise rhythmic complexity, in contrast to the predominant Western emphasis on tonal harmony. However, Clarke (1988, p. 2) does point out that musical structures which are hierarchical in nature are common across different musics. D. L. Harwood (1976) feels that there are certainly some universals in how humans process music:

- Pitch perception, scale construction, and melody perception are all affected by the particular musical tradition in which the music perceiver and performer operate.
- Even though function and structure of music may vary across cultures, similarities however do occur in perception of pitch and melodic contour. (p. 527)

D. L. Harwood (1976) says that elements such as inversion and transposition are evident in different musics, but this is all due to the need for pattern recognition, which is a universal characteristic (p. 528). His ideas are also supported by Swanwick (1988, p. 100), who discusses how the basic processes of repetition and contrast and the devices of variation and transformation are common across musics of the world. D. L. Harwood introduces the concept of how we perceive these various patterns by stating that “humans chunk information into meaningful patterns” (p. 531), which can be stored in our memories and makes for easier recall. Dowling (1988) also talks about the “pattern invariants that shape our cognition of music” (p. 114). There are similarities in the way we cognitively process music according to Lerdahl and Jackendorff’s (1983) theory. Their theory utilises a hierarchical structure, which involves four components: groupings (phrases), metrical (pattern of beats), time-span (relative importance of events), and prolongational (pattern of tension and relaxation).

The cognitive process similarities exist even at the formative stage, according to Brailoiu (1954), who found that there are consistent patterns in children's songs across diverse cultures and languages. His intercultural study of children’s songs provided empirical evidence to show that rhythmical, metrical, and formal textual qualities of children's play songs are based on four main models and their variants. It is conceivable that if this pattern recognition ability is developed through learning one music, it could be transferred to
another and therefore makes the learning process of the new music easier. These ideas can be considered for their significance to musical creativity. If this understanding of patterns is essential to our musical recall, then it will be required when involved in all aspects of musical activity, listening, performing, improvising, and composing; it will facilitate the creative process. There are both similar and different pattern groupings observed in different musical cultures but the similarity for pattern recognition ability seems to be common across cultures. Clarke (1988) believes the ability to improvise music requires an understanding of the hierarchical, associative, and existing repertoire structures (pp. 8–9) and so this improvisational ability certainly draws on pattern recognition. An interesting question to then consider is whether it is easier to learn a music that has a similar structure to another music when you already have existing knowledge of the original music? Does this enhance musical creativity in the new music?

In discussing similarities and differences across musical cultures, it is important to consider views of the definition of creativity and the origins of creativity. Hill (2012) points out the 19th century Western notion of musical talent and giftedness being rare still persists, and this restricts encouragement of young composers and creativity. He states that in order to “enable a greater range of creative activities amongst a larger population” (p. 101), we need to challenge many of the notions that restrict musical creativity. While he is speaking in the Western context, this may also be relevant in the context of many of the world musical cultures. He says that “cultures that value preservation and authenticity to historical traditions may limit individuals’ permission to creatively alter or innovate” (p. 98). This may be the case in Western classical music but also to some extent in the Hindustani and African musical cultures. In African musical cultures, it is important that a musical piece “reflects and resonates with traditional patterns and values” (Herbst, Zaidel-Rudolph, & Onyeji, 2003, p. 142). Cultures that value novelty and individuality are more likely to promote individual creativity and ones that value communal ownership will promote collective creativity. Using this argument, many African musical cultures will promote collective creativity, more than the individual. Tying this point together with the importance of motivation in creative development, it will be more likely that there is a preference for group creativity over the individual in African societies.

Views about the origins of creativity also demonstrate some similarities and differences across cultures, and will have an influence on creative output through the shaping of peoples’ beliefs and behaviours. Hill (2012, p. 92) points out how “depending on cultural context, ideology of divine musical origins may greatly restrict musical creativity”. He discusses Seeger’s (2004) study on how the Suyá from Brazil believe that music originates from the
supernatural and divine, so they impose limits on what can be created unless people receive their inspiration via a spiritual connection. Hindustani musicians also have a belief in the inspiration from the divine. "Music is a means of acquiring and expressing power; it is a method for achieving Supreme Bliss; it is also a means of devotion" (Neuman, 1980, p. 60). He discusses many examples of musicians' beliefs that certain ragas have magical powers derived from the spiritual (pp. 64–68). Some feel the creativity that emanates from a musician's brilliant and novel performance can be partly attributed then to the influence of the divine, not just the human. Chernoff (1979) discusses the effect of religion on African music, given their concept of a multiplicity of spirits which represent a single supreme being. He says that "there is a clear parallel, certainly, between the aesthetic conception of multiple rhythms in music and the religious conception of multiple forces in the world" (p. 156). "The beat (an analogy for God in this context) emerges from the way these rhythms engage and communicate with each other" (p. 157). While this is an appealing idea, it does not hold in the context of Christianity—here a single God has still inspired multiplicity in the form of polyphony. Consequently, there are different perspectives about the influences on spirituality on creativity in music.

Swanwick (1988) discusses how music is continually being refashioned, adapted, and reinterpreted, the evidence of which is seen in new composition or improvisations (1988, p. 111). Aubert (2007) also reinforces the point that music is in a constant state of change. He discusses how the creative dimension is always present when listening to music of another culture "the individual imprints the mark of his or her own subjectivity" (p. 10). This unconscious tendency to project ourselves onto others means that different perspectives evolve and, through this, different perspectives of music arise. Music can then be considered to be in a constant state of mutation and change. Nettl (2005) refers to a similar point when he discusses how all cultures and all musics involve change: through combinations of different elements of rhythm, melody, performance practice and instruments, new kinds of music emerge. These three eminent musical theorists refer in different ways to the dynamic processes that underlie music creativity. Differences between musical cultures can create a curiosity for the diverse. Aubert (2007) points out how this is vital for the renewal of creativity and how various musics have evolved from this interaction, such as Algerian rai and Andalusian flamenco-rock for example (p. 57). Yehudi Menuhin's introduction of Ali Akbar Khan playing and recording Raga Bhairavi on the first LP of Indian music in 1955 is considered by some as the "dawn of Indian classical music in the West" (Lavezzoli, 2006, p. 3), but others such as Ravi Shankar's collaboration with the indo-jazz compositions of Glass, Previn, Mehta and Menuhin, and John McLaughlin have also influenced the development of
musical integration and fusion. More recent examples from Ghanaian musicians demonstrate how "traditional Ageshe dance from the Ewe area now has a section where the lead drummer imitates reggae rhythms" (T. Wiggins, 2016, p. 155). Indeed, almost all musics are a result of interaction and influences in some way. Musical sharing across cultures can provide the environment for creative outputs, as musical cultures borrow and integrate new elements from other musical cultures. Schubert and Joubert (2016) discuss how understanding what elements are shared and what is different or distinctive across cultures is how newness and creativities can emerge (p. 333). In this way, the differences in musics are important to identify and understand, as they present the opportunity for expressions of musical creativity.

Some of the differences in music education and the transmission of music across cultures will be considered in more detail in the next chapter, but it is useful to point out here the dependency that all musics have on their style and method of learning. There is a cross-cultural similarity in that the process of learning is critical in defining both the music and culture in many world music practices. For example, the interaction between participants is important in Javanese gamelan and in Bulgarian polyphonic song (this is also true of Western classical ensembles) and this interaction is consequently an important part of the music educational process (Campbell & Kassner, 2006, p. 382). Many world music cultures are transmitted aurally, as opposed to the Western style of music education which relies heavily on reading and notation (Schippers, 2010). Consequently, in aural music cultures, musicians’ abilities in terms of memorising, reproducing, analysing, and reapplying musical sound are likely to be stronger. As Campbell (1990) states,

many traditions are orally preserved and transmitted, the creative process may require keen aural skills, an ability to retain general schemes and structures, and sometimes the high level of precision necessary to know minute details of pitch and rhythm within a style. (p. 44)

In African musics, the ability to learn relies almost entirely on listening, the oral and aural (Strumpf et al., 2003, p. 119), while in Western classical music, learning is a combination of visual and aural skills. This results in a greater importance being placed on the acquisition of aural skills in the African musical cultures. There is an emphasis on direct and indirect learning by observation of improvisation in the African musical cultures, as well as an acceptance that improvisation also stems from spiritual inspiration (Berliner, 1993). This results in the respect and value that is given to the role of improvisation in the African musical arts. It should also be mentioned that the emphasis on learning in an improvisatory
fashion is not exclusive to world musics. There is an emphasis on improvisational techniques in learning Western classical music, using the Orff and Dalcroze methods, which include improvisation as a deep part of developing musical vocabulary and imagination (Campbell & Kassner, 2006, p. 254). Even the Kodaly method, while relying on order, sequence, and process, can be highly flexible, and was designed to incorporate “creativity as a normal consequence of good teaching” (Bacon, 1993, p. 141). The use of improvisation in jazz is also another important example of learning styles, and will be discussed later in this chapter.

While Blacking (1973) states that the essential difference between music in one society and another may be social rather than musical (p. 102), there are nevertheless many musical similarities and differences that can be observed, as discussed earlier. Brown and Jordania (2013) have recently researched the most common characteristics across the world’s musics and suggested that the most universal characteristics are “use of discrete pitches, octave equivalence in unison singing, transposability of music, phrase organization of music, emotional intensity factors in performance, and functionality of musical forms” (p. 241). While this may be true, the question for this research is how these similarities and differences can contribute to broaden children’s experiences and knowledge of possible musical structures, characteristics, and beliefs. Through the exploration and understanding of these similarities and differences, children may reflect and bring new concepts into their thinking processes. Once points of difference are picked up in one new music, this may assist with further acquisition of other new musics. All three musical traditions in the pilot program include improvisational techniques, so does this mean the children will improve on their improvisational skills in general, irrespective of the style of music that they are playing? Additionally, a knowledge of the similarities between musical structures, characteristics, and beliefs may also assist with the further acquisition of other new musics. Once a pattern has been recognised, it can be applied in new contexts. By applying this pattern recognition ability, it will be interesting to see if children in the pilot find it easier to learn the subsequent world musics, after having learned the first style of music in the program.

Three world music genres and creativity

The following section aims to bring to the fore some of the creative aspects of the three world music genres used in the pilot, with the aim of giving some background on how these aspects could be explored in a music education context. The objective here is not to demonstrate the full range of complexities and characteristics of each individual music (for this I refer to Clayton (2011), Nooshin and Widdess (2006), and Slawek (1998) on Hindustani music; Agawu (2003), Chernoff (1979), M. E. Nzewi (1991), and O. S. Nzewi (2010) on African percussion; and Brinner (2008), Perlman (2004), and Supanggah (2011) on Javanese
gamelan), but rather to briefly point to some specific characteristics in each music relevant to understanding and nurturing creativity. This will also provide a glimpse of the vastly different perspectives on creativity between various world musics.

**Hindustani classical: The nature of improvisation**

As discussed previously, a set of musical practices referred to as improvisation forms a large part of Hindustani classical performance. Depending on one's perspective on what constitutes improvisation, 60 to 90% of a performance of Hindustani music can be seen as improvised to some extent. The way the musical material is taught in India (Schippers, 2010, pp. 160–162) provides an effective platform to scaffold the creative processes, by firstly drawing on a variety of known melodic and rhythmic patterns, which can then be extensively varied through different combinations and distinctive patterns of notes within the raga and tala of the piece being performed. To understand its application of the creative process, some of the ways that improvisation can be learned and exhibited in Hindustani classical music will now be discussed.

In light of previous discussion on the overlap or blurring between composition and improvisation, it is also important to consider Indian musicians as composers, not just as improvisers, although their creativity is labelled more often as improvisation (Mutahkar, 1987, p. 96). In the case of Hindustani music, the lines are certainly blurred between improvisation and composition. Nooshin and Widdess (2006) iterate this point, saying that the “Indian performer is also a composer, who composes his or her performance using a combination of memorized materials, reusable compositional strategies and spontaneous inspiration” (p. 112). Clayton (2011) describes succinctly the structure of Hindustani music in general, highlighting the use of improvisation within a specific structure. He describes it as “structuring of performance as ‘fixed composition + extemporized development’, the episodic organization of that development, and the general tendencies to increase *laya* (tempo and/or rhythmic density), expand and vary material, and intensify affect” (p. 93). The explanation of the use of the *tan* exercises (fast note patterns using *sargam*, the Indian equivalent of solfege) fits into these categories, with an element of spontaneity that is required to vary and recombine the *tans* in different patterns.

The differences in various types of improvisation/composition within Hindustani music could be considered along a spectrum. On one side, there is the strict reproduction of material handed down. Then there is the purely ornamental variation of certain notes. Further along the spectrum is improvisation which only uses different arrangements of the ‘building blocks’ specific to individual ragas. This is followed by improvisation that uses the
reapplication of various patterns in different contexts. Finally, on the far side of the spectrum is an improvisation/composition which is completely free, although it is still within the bounds of the raga and tala of the piece. All of these points along this spectrum require differing levels of creativity.

There are different styles of Hindustani classical music and they display differing amounts of freedom within improvisation. Khyāl is a more recent style of music that evolved from Dhrupad during the Moghul rule of India in the 17th century. Khyāl, (literally meaning imagination) combines facets of Dhrupad styles, techniques, and structure. A wider variety of ornamentation is used in khyāl, and the improvisation takes place within the confines of a tala. The structure of a performance is less restricted and the artist has more freedom in structuring and improvising the performance (Wade, 1984). Slawek (1998) makes the point that an important part of performing khyāl is to have the ability to "keep it going" (p. 336), that is, to have the fluency to create existing and new material throughout a musical performance. There is also a great amount of flexibility required according to Slawek. He discusses how Hindustani music includes a balance between the fixed and the flexible, specifically it includes "pre-composed fixed pieces; rehearsed patterns; spontaneous creation of new material" partially inspired by “interactive creativity involving feedback between soloist and accompanist and between performers and audience; and self-reflexive awareness” (p. 363).

Considering the ancient Dhrupad style, Nooshin and Widdess (2006) describe how improvisation can be partly understood by a small number of fundamental processes of development (p. 111). These processes are used not only in the alap (the slow development of the tonal material in the raga) but in all stages of an instrumental or vocal raga performance. The alap section shows the raga’s creative characteristics; it involves an “imaginative elaboration of the raga, with its characteristic patterns and mood” (Campbell & Teicher, 1997, p. 32). An example of melodic improvisation is demonstrated via modifications to the notes of the raga such that “certain notes in the raga are sometimes associated with particular gamakas, ornamental manipulations of pitches by way of shakes, slides, slurs, and graces” (p. 31). Campbell and Teicher (1997) also state that

there are also short melodic motifs that characterize a raga. These distinctions are not made up at the discretion of the performer, but are inherent in the raga and must be observed during improvisation so that the raga does not lose its identity. (p. 31)

Examples of rhythmic improvisation demonstrate "manipulation of the accents, tempos, and rhythmic patterns within the tala" (Campbell & Teicher, 1997, p. 31). Clayton (2011)
describes some of the ways rhythmic improvisation or development of rhythm (called *laykārī*) can occur. He states that "*laykārī* techniques are used to create interest in different ways in different contexts, depending on rhythmic density. At low densities, interest is created by the combination of *bols*, by rhythmic variety, ornamentation, syncopation, and rubato. At higher densities, this is accomplished by speed itself, and by placement of accents" (p. 153). The children in the pilot program will be encouraged to explore these techniques, albeit at a basic level.

In Dhrupad, the processes of melodic and rhythmic development used in improvisation can be classified in the following way:

1. **Melodic expansion (*vistar*)**—the gradual widening of range to include successively higher, and/or lower, pitches. This process can be seen both in the development of an individual phrase, and in the structuring of each large section of a performance. The reverse process, a gradual contraction of melodic range, can also occur, for example in the final descent of an *alap* or the descending phase of a *tan.*

2. **Rhythmic intensification**—on the large scale, there is a gradual increase in tempo or rhythmic density, with different technical procedures becoming available at each new tempo. On the small scale, an individual motif can be progressively reduced in length at successive repetitions.

3. **Permutation**—repetition of a limited set of pitches or melodic motif, with some re-ordering of pitches, so far as the constraints of the raga permit.

4. **Development of individual pitches**—a single pitch may for a time be treated as the focus of attention or "subject of discussion"; such a pitch may be repeated, emphasised, prolonged, and/or taken as the concluding note of successive phrases. The development of successively higher scale degrees in *vistar* (see item 1) can overlap rather than following in rigid succession. Typically, the next higher pitch is hinted at during the development of the previous pitch, before becoming the focus of attention in its turn.

5. **Sequential transposition (*alankar*)**—a melodic motif is repeated several times, starting on successively higher or lower degrees of the scale. An *alankar* pattern usually has to be modified as it unfolds to conform to the melodic grammar of the raga, and for this reason sequential transposition tends to be less prominent in Indian music than in Iranian music. (Nooshin & Widdess, 2006, p. 111)

These classifications of some aspects of the improvisatory process demonstrate many parallels with the creative process. Instead of notes and rhythms of a raga, it could be viewed as knowledge in a specific domain that undergoes a similar improvisatory process. Exploring
different permutations of existing knowledge or material, shifting perspective to highlight a
different aspect of knowledge, and expanding on a particular aspect of knowledge are all
examples of the creative process. Van der Meer (2008) describes "any way in which formulae
are combined, recombined, modified, adapted, extended, and transformed is part of the body
of the raga" (p. 29). He could be speaking of the creative process of developing knowledge in
general.

The ability to improvise depends strongly on the educational process in Hindustani music,
and Campbell (1990) describes how this ability “demands a strong educational foundation
based on rigorous exercises, extended periods of practice, a remarkable memory, and a
capacity for creativity within the limits of raga and tala” (p. 45). She continues by pointing out
that “although improvisation is not isolated as a separate skill within the lesson, students
base their musical expression on the recreation of small units of pitches and rhythms,
memorized and developed through earlier exercises” (p. 45). A. B. Alter (1989) discusses how
the improvisation technique is developed, through exercises based on fast note patterns
called tan (p. 178), with transferrable formulaic construction that allows them to be applied
to different ragas. A. B. Alter (1997) stresses that, unlike other forms of improvisation that
are learnt by copying the teacher, tana exercises are designed to stimulate the student's
individual creativity. She asserts that they represent a dual importance for students, being
firstly “useful in developing his or her technical and creative skills”, and secondly “designed
to enhance the student's ability to formulate improvised phrases in a variety of contexts” by
learning “a series of formulas which may be recombined unconsciously or consciously during
performance” (p. 68). A. B. Alter (1997) emphasises that as students learn and practice these
tana exercises, they are learning a process of variation through recombination that allows for
improvisation to be undertaken.

Despite the focus on improvisation in the Indian music educational practice, some musicians
believe the ability to improvise well may not be teachable. Ravi Shankar states that
"improvisation, which is something you really can't teach . . . should be spontaneous as well
as within the rules and be as free as possible" (as cited in Lavezzoli, 2006, p. 425). It is a little
difficult to agree on this point, as there are many techniques—some described in this
research—about the process of improvisation, and much of this thesis focuses on the factors
that contribute to learning how to be creative. It is more likely that the mechanics of learning
the techniques and processes of improvisation remain largely unexplained, particularly in
traditions where the music is transmitted from a very early age from parent to child, as is the
case with Hindustani music.
West African djembe: group creativity

In contrast with Hindustani music, Campbell (1990) discusses how in West African musical cultures, all of the community, not just professional musicians, are encouraged to participate in performance, and that creativity grows out of this shared experience (p. 46). Therefore, one of the characteristics of this “performance composition” is its dependence upon the group and the context and, in this respect, it emulates the criteria for the systems view of creativity. M. E. Nzewi (1991) points out that “music organisation and creativity are informed by social factors” (p. 122) and a musical group demonstrates “a common factor, a recurrent pattern, by which the musical group is known” (p. 122). Variations and deviations occur from a known and significant model. Different instruments have various degrees of freedom of creativity in improvisation. An assessment of the creative originality (by the audience) is determined by “how performers extend or elaborate on the recognisable framework” (M. E. Nzewi, 1991, p. 131). Chernoff (1979) discuss how “a drummer relies on the multiplicity of possible ways to cut and combine the rhythms” (p. 113). Different groups display their own unique style, as well as their regional style, and these differences are understood by the audience. How well the group improvises within their particular style is a measure of their success and their reflection on the particular social situation during their performance (Chernoff, 1979). Chernoff (1979) therefore states that the “community dimension is perhaps the essential aspect of African music” (p. 33). O. S. Nzewi (2010) confirms this with his statement that “whenever music is created or composed in indigenous Africa, the creation process is not complete until the community has sampled it” (p. 31).

Kwami (1996) states that “in traditional African music, the ability to do is followed by the ability to think” (p. 72). This does not necessarily mean that these musics are less creative; in fact, just the opposite view will now be put forward. However, it does stress the importance of the practical and being focused in the moment of playing and performance. The idea of being in the moment is also an important one to the concept of creativity. Csíkszentmihályi's (2009) idea of flow, in which a person performing an activity is fully immersed in a feeling of energised focus, full involvement, and enjoyment in the process of the activity, can be related to the musical performance activity. One of the factors that encompasses an experience of flow has been identified as an intense and focused concentration on the present moment (Nakamura & Csíkszentmihályi, 2009, p. 195). The emphasis on the moment in the performance activity, which is evident in African musics, could then facilitate a state of flow, which is conducive for creativity.
There is a creative process taking place in the action and moment of a performance. M. E. Nzewi (1991) describes how this process is more than purely improvisation, and discusses the meaning of what he defines to be performance composition:

In improvisation, one creates with a theme spontaneously. Developmental creativity is guided by the music culture and type, the recommendations of a piece and also, group/audience sensitisation. In performance composition, one re-creates a piece spontaneously in order to fulfil the demands of an extra musical or a non-musical context. (p. 67)

M. E. Nzewi (2003, p. 14) also expresses this activity of performance when he describes that, “in the African sense, learning is an interactive performance experience”. An artist “re-composes a known piece of musical arts on every occasion that it is performed in public” (p. 24). In talking about the music of the Igbo, M. E. Nzewi (1991) says that “a musical creation becomes a past referential framework for a new creative experience every subsequent performance occasion” (p. 12). So, while there are important structures, patterns and rules that must be adhered to, the musicians are encouraged, and in fact expected, to develop something new during the performance. The performance composition then exhibits both spontaneous and planned elements. This again demonstrates the dual nature of spontaneity and planning in the creative process.

If one of the predominant characteristics of sub-saharan African music is this group creativity, Agawu (2003) asks an interesting question: “Does the communal approach to composition inhibit creativity?” (p. 5). However, he then argues that feedback within group performance before an audience may strengthen the process rather than weaken it. Sawyer’s (2006) theory of group creativity identifies “improvisation, collaboration and emergence as three characteristics of group creativity” (p. 148). This will be discussed in more detail in the next chapter. However, the nature of African performance composition, as described by M. E. Nzewi and Chernoff, appears to display these characteristics. A good example of the benefits that this type of group creativity brings is exhibited in the reciprocal relationships between the drums in many African ensembles. A drummer who plays variations within his rhythm must be acutely aware of the other drummers. Therefore, his creativity is dictated to some extent by the dimensions of the other players: there is an ongoing rhythmic dialogue between the drummers. As Chernoff (1979, p. 60) highlights: “A master drummer’s varied improvisations will isolate or draw attention to parts of the ensemble more than they seek to emphasise their own rhythmic lines”. Chernoff discusses how “though the master drummer is the one who chooses the patterns and puts the most pressure of the beat, the other drums
enable him to play his variations” (p. 121). The creativity exhibited by the master drummer would not be possible then, without the interaction and support from the group. Oehrle (1991) also discusses a similar concept when she describes how inherent in all aspects of African musical aesthetics is a “sense of balance, from both an individual and a community perspective” (p. 171). The community’s or group’s comments and criticisms are offered as a gesture of support to help the individual achieve his purpose (p. 172). A community’s behaviour such as this stems from the African philosophy of ubuntu. It could be translated as “I belong, therefore I am”, and embodies the significance and meaning that individuals bring to each other. It is the basis of not just music making, but much of African societal values (Bartolome et al., 2011, p. 8).

As mentioned previously, there is a strong association between language and African rhythms and this is one of the most important factors in constraining the freedom in improvisation. In most situations, “melorhythmic tunes derive from the tonal structure of text in tonal languages” (O. S. Nzewi, 2010, p. 22). Similarly, the relationship with the dancers during a performance composition will dictate the rhythmic improvisations: the drummer will drum according to the pace, movement, style, and rhythm of the dancers. The dancers themselves are part of a creative process, their dance steps and body movements conveying the rhythms of dance patterns as visual music (M. E. Nzewi, 2007, p. 51). A group of drummers from the Mande culture, from where the West African djembe originates, “set up short interlocking patterns over which the lead drummer plays phrases that interact closely with the dancers” (Charry, 2000, p. 15). The influence of these other artistic media on the music has the effect of maintaining a certain structure, but also at the same time, it may present opportunities for manifestations of joint creativity to occur. An expressive dancer could inspire the musicians, or a beautiful piece of poetry could enhance the rhythms.

A philosophy of the Dagomba musical culture, from north Ghana, is interesting to consider in the context of creativity. The Dagomba say that “music cools the heart” (Chernoff, 1979, p. 140) and this calls for “mediated involvement rather than concentrated attention, collectedness of mind rather than self-abandonment” (p. 140). It is almost as if the musicians must step back from the process, not become caught up in the frenzy of cross-rhythms, and decide when and how to contribute in a considered manner. The emphasis on repetition in African rhythm and the way in which one rhythm leaves room for another to be heard, provides the space and time for the master drummer to then improvise in a controlled and creative manner. This ability to step back, reflect, and consider the entirety of a situation before contributing has been shown to be an important component of the creative process. As
Dawson (2003) expresses, “creativity, like thought, takes quiet time and a sense of space to encounter it with our full attention” (p. 38).

The process of learning music in many African cultures is central to the enabling of the creative process that is exhibited by members of the community through their participation in the musical arts. Improvisational skill is developed at an early age and highly regarded. Many authors have highlighted the importance and value of African indigenous music in education (Campbell, 1991b; Floyd, 1999; Sloboda, 1985) and believe that African indigenous music develops children’s creative ability, particularly during the improvisation process. Chernoff (1979) believes that “ultimately, precise and impressive control of improvisation style distinguishes excellence in African musical idioms” (p. 122). Nketia (1974) discusses how all sub-Saharan African traditions emphasise singing, and that through song, children’s language and vocabulary are developed. Children listen and hear these songs from birth and later participate in singing, dancing, and drumming through the social dimension of their lives. Campbell (1990) states “the rich use of improvisation in African music is a result of long-term exposure to the sound patterns of the style” (p. 46). Children mainly learn via oral/aural transmission and this enhances their memory skills (Nompula, 2011, p. 373). T. Wiggins (1996) discusses the musical pedagogic process of Ghanaian children and how the transmission process is more informal. Knowledge of different pieces of music is acquired by listening and copying, and mistakes are not corrected, as there is no “rigidly defined norm for the music” (p. 22). “The nature of variations of the tune are the choice of the player” (p. 22). Kwami (1996) also makes the point about this degree of informality in learning African musics. He suggests that teaching to emulate the African musical skills can be organised through a combination of listening and performing with improvisation, emphasising the practical nature of African music. One of the challenges of my research study was trying to transmit the knowledge of African music in a similar way to how it is done in African communities. Even with an oral/aural transmission methodology, the long period over which skills are developed and the resulting comfort with improvisation will be difficult to reproduce.

Chernoff’s view of African musical creativity as re-creating, bringing time-honoured traditions to new life, and interacting with them in new ways, is one that I will explore in my case studies. If participants learn some of the basic rhythms of West African djembe and then try to improvise on these in a group performance composition situation, some insights may be revealed. The aim will be to explore the creativity that occurs in the moment of performance, group flow creativity, improvisations that derive from the re-creation of known structures and rhythms, and the interplay of musical rhythms and dance.
Javanese gamelan: Kinaesthetics and creativity

Gamelan refers to a set of instruments that make up an ensemble in Javanese music. The instruments are mainly "idiophones with a metal sounding element, shaped as either round gongs, or slab-like keys" (Brinner, 2008, p. 3). The gamelan also usually includes drums, bowed and plucked strings, a xylophone and end-blown flutes. The instruments serve different functions in the gamelan and can be grouped in four different categories: (1) those which carry the main melody (balungan); (2) the accentuating instruments; (3) the elaborating instruments; and (4) a set of drums. "Gamelan music is played in a wide variety of settings for various purposes, including entertainment, ritual, education, meditation or commemoration of special occasions" (Brinner, 2008, p. 4).

One of the key elements of Javanese music is flexibility. Brinner (2008) discusses this theme in depth. He states that "the music and the ensemble are flexible constructs that can be augmented, diminished or otherwise altered according to the situation" (p. 22). The musical compositions in gamelan are simply frameworks, which can alter depending on the context and the musicians. There is an amount of melodic flexibility in Javanese gamelan, which is dependent upon the context, the instruments in the gamelan, the contour of the melody, the irama and the colotomic cycle (p. 61). While many of the instruments in the gamelan can play the balungan (melody), there is a concept that it is more of a melodic guide (Perlman, 2004, p. 115), where there are "many simultaneously sounding melodies that are interdependent manifestations of the melodic essence or potential of the piece" (Brinner, 2008, p. 73). This makes possible multiple interpretations of a piece. Another example of the creative process at work is in the use of patterns with Javanese music. Elaborating parts in the gamelan, which are played on instruments such as the gambang, gender panerus, or rebab, utilise a number of known patterns, which musicians can then employ in other pieces. These patterns are transformed and used in different contexts, according to the situation and musician's sense of what is appropriate to the new piece (p. 93). This flexibility is also manifested in the rhythmic relationships of a gamelan. The cyclicity that pervades the music is part of the importance in Javanese culture to find meaningful patterns (p. 13). This cyclical nature is delineated by different gongs in the gamelan, which punctuate the music to define the different cycles; this is termed colotomic structure (p. 29). Brinner (2008) discusses that while the colotomic structures may appear rigid at first, they are "malleable, flexible sets of relationships in time, which the musicians can stretch and compress under the guidance of the drummer" (p. 45). Both the tempo and the irama (a term that describes the amount of rhythmic density or different subdivisions of the beat by different instruments), can vary and can contribute to the creative process.
To what extent some of these aspects of Javanese music have a direct correlation with aspects of the creative process is an interesting idea to explore. Perlman (2004) refers to this idea as well, when he explains how a new musical concept can be linked in “more ways than one to our existing musical concepts” (p. 200). Through this link within the domain of musical knowledge, multiple interpretations of musical ideas are possible. The idea of many possible manifestations of a melodic concept represents an example of the creative process at work—it is an example of the many possible ways to interpret a concept and consider it in diverse ways. The use of patterns also has a direct correlation to the creative process, as has already been discussed in the generic sense. While there may be an infinite diversity of possible patterns, knowledge of the traditions of the music dictate which patterns are acceptable in Javanese music. In some situations, it may be playing a set piece with minor variations or in others cases, the elaborating instruments will produce something which is new, although still keeping within the confines of the accepted possible motifs or patterns. This implies that varying levels of creativity are exhibited in different situations. Through using techniques such as elaboration, combination, differentiation, and transformation, these patterns can create new ways for playing and understanding the music. The fact that elaboration, combination, differentiation, and transformation of patterns are part of the creative process was an idea suggested almost 50 years ago by Guilford (1967). His view was that an improvement of transformational abilities leads to the production of more novel and creative ideas, and these are abilities that Javanese musicians undoubtedly display in the course of playing gamelan.

Campbell (2001a) cites numerous authors who discuss the importance of learning by imitation in Balinese/Javanese music, which relies to a great extent on the process of kinaesthetic learning. Bakan (1999), Brinner (1995), and Tenzer (1991) refer to the process by which gamelan musicians bypass notation and instead learn kinaesthetic gestures that they transform into the act of musical performance. They learn a movement vocabulary that emerges prior to the precision of individual pitches, timbres, and durations falling into place, fitting the specific elements into place after a general sense of the piece is known. (Campbell, 2001a, p. 221)

This approach can be thought of as similar to the Dalcroze philosophy in some ways. Frego (1998) presents the importance of rhythm in the Dalcroze method, stating that:

Dalcroze believed that as music moves, so should musicians; therefore, rhythm is elemental to this philosophy. He taught that through rhythmic movement, musicians
could experience symmetry, form, tension and relaxation, phrasing, melody, and harmony. Experience should teach the musical elements. (p. 22)

An important part of the Dalcroze approach is experiencing spontaneous movement to music to encourage improvisation and creativity (Johnson, 1993). It is possible that the Balinese and Javanese musicians’ learning processes, which draw heavily on the kinaesthetic, help to consolidate their knowledge of the music through a sense of bodily feeling, which then contributes to an ability to be intuitive and spontaneous in combining melodic and rhythmic patterns in an appropriate, interconnected, flexible, and creative way.

Brinner (2008) states that a Javanese musician is “constantly adapting to both the circumstances at hand and to fellow performers in this essentially collaborative endeavour” (p. 22). Gamelan playing then creates a context for socialisation and group creativity. Some of the aspects of group creativity highlighted in the sub-Saharan African musics also apply here. As with the benefits that this group creativity brings through the reciprocal relationships between the drums in an African ensemble, there are reciprocal relationships within a gamelan. Although there is not a lead instrument in gamelan, there are for example, interactions between the elaborating instruments and the instruments playing the balungan. The gamelan is characterised by tight integration of individual parts (p. 24). While music-making in central Java is a social and communal activity, individual prominence is not encouraged (Brinner, 1995, p. 292). The need for maintaining harmony and balance in social interactions is also displayed in the music; leadership is rarely overt in a gamelan (p. 296). These customs will naturally have an effect on creativity. For example, a single performer cannot decide to develop a completely new improvisation during a performance which would upset the balance of the gamelan and distort the rhythmic cycle.

Other aspects of group creativity can be demonstrated through the important relationship and interaction between the music, the dance and the text in Javanese culture. For example, many of the patterns played on the drums, in particular the ciblon, are derived from dance drumming and therefore have close links to dance movements (Brinner, 2008, p. 35). The drums are following the improvisational movements from the dancers and so also need a certain amount of freedom and creativity to support the dance. Javanese poems are written to be sung and gamelan music can apply a variety of different texts to specific pieces of music (p. 77). Wayang, the Javanese shadow play, has a high degree of spontaneity and improvisation (p. 139) and gamelan accompaniment forms part of the performance. The dhalang, or puppet master, draws on a highly varied body of knowledge which still displays certain formulae. “Formulaity applies not only in language but to patterns of puppet manipulation and to
musical elements of the show" (p. 114). During a performance, both the dhaliang and the gamelan have the opportunity to guide the story and the balance often shifts between them. This obviously entails the need for great flexibility and communication from the musicians. In some situations, the music is shaped according to the story's requirements but in others, the dhaliang is bound by the structure and colotomic cycles of the piece of music. A good example of this interaction between dhaliang and musicians is demonstrated by the drummer in a gamelan. The drummer "plays standard drum patterns, appropriate to the type of piece, but once the music is under way, he often abandons those patterns to follow the puppets' movements" (p. 139).

The relationship between the story, dance, and music in Javanese gamelan were explored in the case studies for this research. Using the interaction of the different media provides the opportunity for participants to demonstrate their flexibility (a component of creativity) in a variety of ways. An important part of this research is to understand the possible benefits this interaction can bring to the children's creative processes. It will be valuable to assess the varying degrees of individual versus group creativity in this context. This interaction also was a factor in the participants' experience of West African djembe, as the music also provided the context to a story and dance was part of the performance, as previously discussed. Imagining or visualising a story and using analogical thinking in the process have been shown to be a facilitating factor in creativity (Weisberg, 1988), and the Torrance TTCT (2007a) look at the contribution of "storytelling articulateness" as a measure in overall creativity. As with the other two world musical traditions in this pilot, the cyclical nature of Javanese music was an important factor for the children in their acquisition of musical knowledge, especially how they used this in their own improvisations. Their use of the elaborating instruments while others are playing the balungan melody constitute a way to analyse how children express new ideas while keeping within the confines of the learned patterns. Each of these aspects in gamelan music provide opportunities to discover more about the children's creative processes.

For the children experiencing their first forays into the three world musical traditions discussed in this section, the world music pilot program features three approaches to creativity, allowing the children to find their voice in one or more of them, inviting them to explore their own creativity in new musical realms. Drawing on the kinaesthetic nature of the three percussive world music traditions, their importance on aural learning and the challenges on their cognitive abilities arising from experiencing the unfamiliar, the children are able to explore improvisation in a variety of ways. This is done through the balance of
their individual and the group creativity, through a combination of learned patterns and their own, and through incorporating other art forms.
4 Approaches to Creativity in Music Education

4.1 Transmission Across Cultures

Transmission of knowledge is common to all cultures as a way to impart traditions and information that contributes to sustaining community. Different cultures have different philosophies of learning and ways of organising handing down skills and knowledge, which allow them to continue their traditions in a way they consider most appropriate. While post-Enlightenment Western education philosophies tend to be highly structured and elements based, many non-Western educational philosophies can be more holistic, informal, and communally focused (Merriam & Kim, 2008; Reagan, 2004). Understanding these different approaches is crucial for understanding educational practices in music across cultures. How music traditions are sustained and change and the associated methods of music transmission across cultures are important factors to consider when assessing strategies for effective, creative, music education (Schippers, 2010).

4.2 Musical Enculturation and Acculturation

Enculturation is the process by which a person learns the requirements of the culture by which he or she is surrounded, and acquires values and behaviours that are appropriate or necessary in that culture. (Grusec & Hastings, 2007, p. 547)

Childhood is a time when this process is important, as children learn from their direct environment and the way children structure and represent this learned information is culture-specific (Porter Poole, 1999). The relationship between music and the culture which produced it is a subject discussed in depth by ethnomusicologists such as Blacking (1973), Chernoff (1979), Merriam (1964) and Nettl (2005). Blacking (1973) notes the striking capacity of the human brain to identify and discover patterns of sound (p. 9) and puts forward the view that appreciation of a particular culture's music is largely dependent on belonging to that culture. The knowledge of a particular culture's music is a learned concept, which starts to occur at an early age, the learning shaped according to each culture's ideals and values (Merriam, 1964, p. 145). Blacking discusses how a number of elements in music
(rhythm, melody, harmony) are organised in a way that is dependent on the musical culture which they come from. According to this view, understanding this structure is a necessary part of learning a culture’s music. According to Lomax (1976) the structure of a culture’s music has even been considered to be correlated, somewhat controversially, with the culture’s social structure and ways of behaviour and thinking.

Musical enculturation occurs when children acquire culture specific knowledge about the structure of the music they experience (Morrison, Stambaugh, & Demorest, 2008). Gerry, Faux, and Trainor (2004) discuss how “children are open to a wide variety of perceptual organisations, but through exposure to the forms of a particular culture, their perceptual organisation narrows to become specialised for the forms of their culture” (p. 545). Similarly, Hannon and Trainor (2007) define enculturation as exposure to a particular culture’s music system, which means that children acquire “culture-specific brain structures and representations” (p. 466) or culture-specific cognitive processes to understand their culture’s music.

When do children start this enculturation process and how does this affect their preference and understanding for diverse musics? Hannon and Trainor (2007) conducted a variety of studies that suggest that while young children are readily able to encode complex rhythms and show “greater flexibility than older children in auditory-temporal input” (p. 468), enculturation has a strong effect on their musical development. A study by Hannon and Trehub (2005) that showed North American infants are able to detect changes in “Western, Bulgarian and Macedonian rhythmic patterns at 6 months, but by 11 months are able to do so only with Western rhythms” (Gerry, Faux, & Trainor, 2004, p. 550). Enculturation also affects flexibility in recognising pitch and melodic relationships but “it takes considerable exposure to a musical system before enculturation occurs to pitch structure (Trainor, 2005; Trainor & Trehub, 1992, 1994)” (as cited in Gerry et al., 2004, p. 545). These studies show that sensitivity and preference for consonance emerges early in a child’s development (that is, during infancy) and this is universal across cultures, but more system-specific musical knowledge of scale and harmonic structure develops later in childhood. The Morrison et al. (2008) study showed that both children and adults are better at remembering music from their own culture and also that enculturation starts in early childhood. They suggested that further studies be done to see if “students’ music schemata, like their preferences, can be altered with concentrated exposure to music of another culture” (p. 126). With the results of their study, Gerry et al. (2004) advocate musical training which “would enable people to be able to both produce and appreciate more complex meters, with an ideal musical training program for infants including a variety of metrical forms” (p. 550).
Barrett (2006, p. 202) discusses how enculturation in a school and music environment influences children. As most schools' music education practices are aimed at developing repertoire and skills rather than encouraging an improvisatory and a playful approach to learning music, the children's “free-song” is not usually valued or encouraged, so this practice starts to diminish as they reach school age. Campbell (1998, p. 185) also presents many examples of this encultrative learning that influences children's free-song, and she believes that there are differences in this learning across cultures. She also discusses that there is a strong enculturation effect at about 9 or 10 years of age, where children exhibit more sensitivity to peer culture and the media, often resulting in a “rejection on a surface level of music that is not endorsed by their culture” (Campbell & Kassner, 2006, p. 224). She believes that with teacher encouragement to be receptive to music they do not necessarily prefer, that a children’s attitudes can change.

Levi-Strauss’ (1963) theories of structural anthropology take a contradictory view to learning through enculturation by promoting the view that there are similar universal cognitive processes which are acquired through any enculturation process. According to this view, children may actually develop similar cognitive processes and representations of music across different musical cultures. I think it is interesting to consider how much of the enculturation process is similar across cultures. While the details of melody, rhythm, harmony, and musical form may differ across cultures, the cognitive processes that are acquired when learning music may be very similar across cultures, if Levi-Strauss’ view is correct. Musical transmission methodologies across cultures all appear to contribute to some level of enculturation, so comparing these methodologies to recognise similarities and differences and the impact on children's ways of learning is something to be explored in more detail. To what extent does enculturation influence children's ability to learn new music, and how much exposure to new music is required before they are able to recognise and understand the new music’s specific structures? If there is a significant difference between the structure of the new music and the music from their existing culture, does this make the children's learning more challenging but provide an opportunity for developing greater originality and flexibility in their music cognition abilities?

In answering some of these questions, the concept of acculturation needs to be considered. Acculturation is used to describe the results of contact between two or more different cultures. In this process, a new, composite, culture may emerge, in which some existing cultural features are combined, some are lost, and new features are generated ("Acculturation", n.d.). This is often called fusion in music. Herskovits (1938, p. 10) describes it as “a phenomenon that results when groups of individuals having different cultures come
into first hand continuous contact with subsequent changes in the original cultural patterns of both groups”. Earlier ethnomusicologists such as Merriam (1964) and Waterman (1948) were interested in general laws and principles that were common to acculturation in all situations. For example, Rice (n.d., “Acculturation”) describes Waterman’s (1948) study and theory that “acculturation would occur between similar traits in the musics in contact, because they would be easiest to understand” (para 4). If this is true, then learning music of a culture with very different structures would be more difficult.

Rice (n.d., “Acculturation”) states that more recently, ethnomusicologists have become interested in the concept of musical change (para 5). The opportunity for musical change has been caused to a large degree by the impact of globalisation on music, as there is now greater accessibility to different musics. In listening to and learning music of a culture different to one’s own, the phenomenon of a new emergent composite music culture can occur, as aspects of the different musics are often combined to result in a fusion or hybrid style of music. The results of a process of musical acculturation or musical change may then produce a new style of music, with emergent new characteristics and style. This process is a process of creativity.

From the points made in this section, it may be assumed that both enculturation and acculturation, as well as the mix of both these elements, will have some impact on the children’s learning of the new world musics, and may influence the children’s expressions of musical creativity.

4.3 Elements vs. Holistic Approach

There is a variety of approaches to teaching music. Some of these approaches can be described as holistic, whereas others utilise a “separate components”, “atomistic”, or “elements-based” approach to build knowledge. An elements-based/atomistic approach is one where the individual component parts of the music are broken down and taught separately. Western classical music is often transmitted via this methodology, with a focus on analysis of the different components that comprise a musical work such as rhythm, melody, and harmony (Volk, 2004, p. 101). This approach is demonstrated well by the Kodaly method, which is highly structured and sequenced, with well-defined skill and concept hierarchies in every element of music (Bacon, 1993, p. 77).

Even though the elements-based approach is deeply entrenched in most Western styles of music education, not all Western theories of musical education take this approach (Schippers, 2010, p. 81). Renowned music educator David Elliott’s “praxial approach” has as its central tenet the idea of holistic immersion, with the aim to develop all dimensions of students’
musicianship (Elliott, 1995, p. 266). The Dalcroze method, which is based on using movement to respond to musical characteristics, aims to “conceive music, emotion and movement as inseparable” (Flohr & Tрев Art, 2008, p. 72) and can be considered more of a holistic methodology. Music education in non-Western countries is not always holistic either. Some countries have developed indigenous structured ways of learning; others have been influenced by Western approaches. The Singapore music syllabus, which according to Cain (2011), is primarily based on the acquisition of Western music concepts with an emphasis on the elements approach, focusing on note values, pitch, and timbre, has adopted many of the music education principles of the Western classical approach. According to Wang (2011) the teaching methods for traditional Chinese Chaozhou daluogu music has changed over time. She describes how “the modes of transmission over time have a clear tendency away from the holistic and aural towards the analytical and notated. This is due to the notation of repertoire and the establishment of structured teaching influenced by Western classical education models” (p. 253).

In assessing the benefits of both the elements-based and holistic approaches for a creative music education philosophy, a holistic approach may appear to bring more opportunity to interpret music in an individual and creative way, but there may also be benefits to the elements-based method. Music psychologist W. F. Thompson (2009) describes how our brains interpret and learn using the elements based approach: “Various components of music (rhythm, intervallic pattern and contour) are analysed separately but we eventually experience a unified piece of music” (p. 226). Once the various components are analysed, there is a recombination process in our minds and this process can be imperfect. Without the right attention to this process, “novel stimuli reintegration is essentially random” (p. 228). Therefore, this may lead to a different interpretation of a piece of music for different individuals. Perhaps using the elements-based approach can then bring a more individual learning which may indeed not be completely structured and pre-defined. According to this psychological view, an elements-based approach may yield new perspectives and more creative outputs from learning music this way. Campbell (1990) also advocates benefits of the elements-based approach. She makes an important point that “musical creativity requires a familiarity with a style’s melodic, rhythmic, and formal elements” (p. 4) and that spontaneous musical expression is closely linked to the acquisition of these skills.

A holistic point of view can be defined as “emphasizing the importance of the whole and the interdependence of its parts” (“Holistic”, n.d.). With this approach, understanding the whole, rather than just the individual components that comprise the whole, is important, and may bring a greater understanding or insight. Interestingly, this is also true from a
neurophysiology perspective. For instance, Goleman (2011) has shown our brains employ something like a holistic method when in a creative state. Creative thoughts occur by accessing a large web of neural connections from across the whole brain, rather than just utilising one component. Takeuchi et al.’s (2010) study is congruent with this idea that creativity is associated with the integration of conceptually distant ideas held in different brain domains and architectures.

A holistic approach to learning music is employed by many different world cultures. One of the characteristics of such an approach involves transmitting the repertoire as a whole, rather than analysing its various components such as rhythm, melody, and expression individually (van den Bos, 1995). Schippers discusses how the Indian classical musician learns in this way: “Complexities of ragas (melodic structures) and talas (rhythmic structures) are slowly assimilated, aurally, holistically, with considerable emphasis on creating new music from existing structures and often on spiritual aspects of the music” (2007, p. 5). Campbell (2001a) talks about Balinese gamelan teaching that is “holistic and anti-analytical with no attempt to break a musical work into discrete and manageable segments but rather a start-to-finish progression” (p. 221). Similarly, the transmission of African percussion music is learned through immersion, where the individual musical characteristics are not necessarily explained to children, but learned by listening and playing along as part of a group performance as Agawu (2003), O. S. Nzewi (2010) and Schippers (2010) describe. In all cultures, the way children learn musically from each other and sharing music tends to occur in a holistic manner as Campbell (2001a) discusses with the “natural flow of the transmission and learning process appearing to be more holistic than atomistic in style” (p. 218).

It may be that both an elements-based and a holistic approach are required to develop musical creativity. The holistic approach derives a benefit from the fact that the student needs to construct new knowledge themselves, rather than explicitly having the knowledge explained in a preconceived manner. This provides an opportunity for a new perspective or interpretation of the music and, hence, an opportunity for creativity. The process of teaching holistically and its possible effect on creation of new knowledge and content could be explored further. Some of the research has also highlighted the importance of learning and understanding the component elements that comprise a particular music. Familiarity with known musical components and also the recombination process described by W. F. Thompson (2009) can stimulate musical creativity. A comparison of the elements-based and holistic methods of music transmission and their corresponding effect on creativity is, therefore, something to be explored. The pilot program in world music provides some
opportunity to assess how children are taught, acquire, and apply new musical knowledge in the three world music traditions.

4.4 Familiarity vs. Uncertainty

As tolerance of uncertainty or ambiguity is considered an important component of creative behaviour, as discussed by Zenasni, Besancon, and Lubart (2008) and others, it is interesting to analyse the importance of this component to music education. By providing the opportunity for children to experience music which is unfamiliar to them, and for them to develop a level of tolerance in listening to and learning unfamiliar musics, their level of tolerance of uncertainty may increase and, therefore, contribute to their overall creativity. Zachopoulou, Makri, and Pollatou (2009) point out that “creative behaviour is expressed more easily when a person is not aware of how to deal with a problem or an unknown situation” (p. 319). Uncertainty is experienced in such a situation, as is the case when learning an unknown music.

In his Twelve Continuum Model of Transmission, a framework for approaches and methods of music teaching and learning in culturally diverse environments, Schippers (2010) includes the “tolerance of uncertainty” as one of his model elements. At one end of Schippers continuum, when tolerance is very low, students prefer the familiar. At the high end, students are more comfortable with exploring the unfamiliar. The choice of promoting a greater level of uncertainty when learning music allows students to explore music that is new and different. It allows for challenges to the status quo and existing hierarchies of musical structure. A greater tolerance of uncertainty allows students to decide critically on what components of music they want to use as part of improvisation and composition. Schippers (2010, p. 162) discusses how music that uses an improvisatory style which is implicit rather than explicit can be ambiguous for students at first, but teaching this style can bring a new perspective for students. Hofstede’s (2001) work on comparing different cultures’ values and behaviours found that there were differences across cultures in “uncertainty avoidance” (p. 145), which he defines as the extent to which members of a culture feel threatened by unknown or ambiguous situations. Indian and Chinese cultures exhibited weak uncertainty avoidance, whereas German and Latin cultures rated strongly and therefore would be more likely to avoid uncertainty. These differences have implications for how receptive students from different cultures are to employing new perspectives and challenging existing structures.

The tolerance for uncertainty can assist students to consider different musical structures and sounds and, over time, their ability and willingness to consider these differences will
improve, enabling a broader understanding of music in general (Anderson & Campbell, 1996). These authors discuss how students can develop a greater "music flexibility" or "polymusicality" (p. 3) and are able to then study and perform other new musics with increased understanding and ease. They say that students are often "intrigued by the new and unfamiliar", and are "fascinated to compare the "known with the unknown" (Anderson & Campbell, 2011, p. 4), which enables this world music exploration. However, Demorest and Morrison (2003) suggest that listeners may attempt to accommodate culturally unfamiliar music styles through imposition of familiar organisational strategies, such as interpreting a traditional Chinese scale as Western pentatonic. Morrison, Demorest, Campbell, Bartolome, and Roberts (2012) suggest that "students' interactions with culturally unfamiliar music may more quickly lead to a general sense of style or a recognition of common patterns" (p. 371). Fung (1996) discusses that students may first need to unlearn inappropriate strategies before gaining fluency with a new musical system, particularly in cases where two systems appear to share a number of similarities. Morrison et al. (2012) point out that as a consequence of many of these findings, "there may be significant differences in how students of different cultural backgrounds process musical information" (p. 372). A study conducted by Chaffin and Logan (2006) found that Western classical music performers have a very structured, hierarchical and conceptual memory of musical pieces that they perform (p. 128). Performers in non-Western music may also rely on conceptual structures, but these may more closely align with the structure of their own specific musics. Students that have exposure to a variety of musics with different structures could possibly be able to hold different conceptual structures in their memories, and this could provide benefits for more flexible and creative thinking. Whichever way students conceptualise new musics—and as different world musics are varied in structure and sound, and students may not have had any exposure to them—a tolerance of uncertainty will develop almost naturally if their music education covers a broad spectrum of culturally diverse music. Jorgensen (2008) also promotes the tolerance of uncertainty in her philosophy of music education, although she expresses it slightly differently. She emphasises the importance of keeping "a mind open to new possibilities, unconstrained by dictums and ideology, and eager to learn" (p. 10). By considering various alternative approaches, the mind is not so constrained by a single way of thinking and recognising that there is a diversity of approaches is an aspect of divergent thinking (Guilford, 1950) and, therefore, creativity.

However, if music is perceived as too unfamiliar or too complex and the level of uncertainty is too great, then the learning may be impeded. Brittin (1996) discusses how familiarity with music affects preference positively using research by Finnas (1989) that showed repeated
listening generally led to higher preference for the music. Other researchers, such as W. F. Thompson (2009) and Fung (1996), have also shown the relationship between familiarity and musical enjoyment. Brittin (1996) also discusses how complexity and familiarity are related, as “repeated listening generally diminishes subjective complexity” (p. 329). But familiarity and complexity can be described as inverted-U models, according to Brittin. This means that preference for a piece of music increases up to a point of optimal familiarity or optimal complexity, but then preference begins to diminish after this point. Fung’s (1996) study of preference for unfamiliar music used a variety of world music examples from eight different world regions, and indicated a significant relationship between preference and familiarity, and also a found a point of optimal familiarity and complexity. Fung points out that how people from other cultures respond to world musics is an issue largely unexplored. This can have implications for world music education, as introducing music that is too familiar or too complex may be greater than the students’ tolerance of uncertainty levels. Their diminished preference for the music may dampen their desire and motivation for learning and impact negatively on creativity.

Is there a difference in approaches across cultures to using familiar or unfamiliar music within music education techniques? With the increased opportunity to hear world music genres, there has been an increased opportunity to teach world musics in the West, as a number of authors have discussed (Anderson, 1992; Belz, 2006; Campbell, 1992; Elliott, 1998). Elliott (1994, p. 13) has promoted the benefits of introducing students to unfamiliar music practices, in that it teaches new ways of conduct, behaviour, values, and musical thought. The reality is, however, that many Western music teachers are still reluctant to explore and teach music that is unfamiliar and that has a different structure, as Cain (2011) and Westerlund (2002) discuss in their theses on this topic. Teachers who take the challenge to explore the unfamiliar, however, may also find new perspectives on music themselves, as Swanwick (1988) advocates. Kwami et al. (2003, p. 267) discuss how the South African music curriculum has embraced change to include both Western and non-Western musics. Jorgensen (1998, p. 85) talks about the cross-cultural appeal of Western classical music in the East (in countries such as China, Japan, and South-East Asia), which shows that people can develop an understanding and enjoy the unfamiliar.

While learning Hindustani classical music or West African djembe may take a holistic approach as described, they both still depend on understanding existing and familiar structures. Campbell (1990, p. 44) describes how the musicians need to learn a “fundamental solfege alphabet” which they can use in improvisation, where many years of familiar tonal exercises and rhythms are recalled in the act of improvisation. The familiar is needed to
create the unfamiliar. Similarly, in African performance composition, the audience is expecting that something new will be heard but it will be constructed from a known foundation. M. E. Nzewi (1991) describes how individual variations in a performance composition use “structural derivations from a known and significant model” (p. 122). This is not unlike the importance of the familiar in jazz music, which Jorgensen (2004) describes as “knowing the traditions, the rules, the repertoire, the performance practice, the ways of improvising, and the people associated with jazz” (p. 11). In this respect, jazz, Hindustani classical, West African djembe, and Javanese gamelan musics are all similar.

So while there are benefits in exploring the unfamiliar, it seems there is a strong predilection for employing known structures across musical cultures. Relying on familiar and known structures is of importance when exploring the new. The question becomes to what extent is this level of familiarity necessary to enable understanding of music and facilitate learning? The corollary to this question, then, is what is the optimal tolerance of uncertainty before it becomes detrimental to learning and creativity? The literature suggests that these are important questions to answer in the investigation of creative music education, thus they need to be explored further in the actual case studies that are part of this research. Learning some different world musics, as in this pilot program, gives students from different cultures the opportunity to explore the unfamiliar and experience levels of uncertainty in doing so, and therefore can provide the opportunity to explore these questions further.

4.5 World Music Teaching

Existing methodologies and courses

In reviewing existing world music teaching methodologies, there is much discourse on theoretical and philosophical approaches about bringing world music learning to a wider audience. While there has been a marked influence of well-informed resources, there is still a significant lack of practical world music courses and materials developed to enable students from different cultures to explore these musics (Hebert & Karlsen, 2010; Nethsinghe, 2012). Campbell (2004) supports this point with her view that while musical diversity is valued in principle, “curricular infusion of musical expression of the world is yet in its infancy” (p. 13). Westerlund (1999, p. 94) discusses how there is an increased focus by many school systems for culturally diverse musics, but “there has been little interest in becoming involved with different cognitive systems of so-called non-Western cultures”. Schippers (2010) also discusses the hegemony of Western art music which “still pervades global thinking on music and music education” (p. 35) in which the dominant Western culture is “the only frame of reference for most institutes, programs and methods throughout the Western world” (p. 30).
This means world music courses may be taught using a method of transmission which may not be appropriate for imparting the meaning, or gaining an understanding of the music. Schippers (2010, p. 164) found that world music education in Western conservatories and schools is “usually more analytical or atomistic than holistic in approach”. In this case, teaching Hindustani music with an elements-based approach rather than more holistic approaches may prevent the student from gaining the skills and ways of thinking that an Indian music student would acquire in a traditional environment.

Many theorists and music educators have encouraged learning of a diverse range of musics (Bartolome, 2011; Campbell, 2004; Hood, 1995; Schippers, 2010). Bartolome (2011) even suggests exploring a wide range of music cultures through guided listening activities and performance on classroom percussion instruments. While such activities do not necessarily advance musical mastery or cultural depth, Bartolome believes it is important to use classroom instruments to “actively engage students and spark interest in world musics” (p. 29). However, Cain (2011, p. 259) found in her research that most world music education approaches support the “teaching of several musics in depth in preference to a general survey of the world’s musical regions”. As one of the pioneers of cultural diversity within music education, Swanwick (1988) advocated an in-depth and emic experience with diverse musics and proposed teaching a “set of sounds” consisting of different intervals, scales, ragas, chords, amongst others, which can then be “transformed inter-culturally through composition and performance” (p. 116). Schippers (2010, p. 129) advocates a “transcultural, music-in-schools program where many different musics and musical approaches are featured on an equal footing with sounds, principles and ideas from a wide variety of cultures”. For instance, he refers to the Rotterdam Conservatory program which aims to be intercultural, but is predominantly multi-cultural in focusing on individual traditions which are taught separately. So the question of how deep and how varied the different music learning should be should be explored in order to determine the most beneficial approach for creativity. To enhance creativity, is it most effective to explore a wide variety of approaches, or gain greater expertise in just a few? Does a more holistic approach, which brings together and compares a variety of musical traditions rather than separate and distinct learning of each of these musics, bring a greater understanding and a more creative approach? Irrespective of which approach is employed, it is important to be open to change and difference in order to learn, as Schippers (1993, p. 138) points out: “It is important to integrate into teaching of world music an attitude of not being fearful of change.”

Flohr and Trevarthen (2008, p. 84), with their neuroscientific view on music pedagogy, believe that “there is no best music pedagogy for children”. While there are many approaches,
there is no “over-arching music learning theory that is accepted. Children learn differently and what works for one may not work others” (p. 84). Supporting this view, Cain (2011) feels that “music educators need to be flexible and open to a variety of methods of instruction in order to capture students’ interest and to make music relevant to their students’ lives” (p. 174). These are interesting points to consider in the context of world music education, given that young learners’ primary way of enculturation takes place through listening and imitation from music recordings and peers (Campbell, 2001, p. 218). Perhaps either the holistic or elements-based methodology may be more effective for different children, regardless of their cultural background, or is it that a blend of both approaches is the ideal way to learn creatively? If some styles of learning are preferred by children and teachers and are more easily transmitted, then does this improve the effectiveness of a world music program by contributing to students’ creativity? These are questions to be analysed further in this study.

In considering existing world music courses, Schippers (1995, p. 138) found that there were virtually no methodologies and books of well-developed lesson material for most forms of world music. In the first decade of the 21st century however, there has been progress in developing and integrating world music courses into the school curriculum in some countries. Anderson and Campbell (2011) support this view, and comment that music curriculums have broadened and now include resources to support a wide variety of musical cultures (p. 3). The United States, United Kingdom, and Singapore have included some world music programs into their schools, although there are limitations in their transmission methodologies and scope of world music coverage. Singapore has implemented a world music program that includes only music from the cultures that comprise the ethnic heritage of its society: Chinese, Malay and Tamil (Cain, 2011, p. 219); many other world musics are ignored. U.K. schools have a world music component available to study for music at General Certificate of Secondary Education (GSCE) level, which includes Celtic, African, Indonesian gamelan, Caribbean and Indian musics (Philips, 2002). U.S. school syllabi include world music such as folk, classical, and contemporary music from a variety of different cultures such as Africa, Peru, Tibet, India, China, England, Papua New Guinea, and Indigenous America (Petrova, 2005, p. 188). Australia does not yet have any official world music program in its school syllabus; however, the new national music curriculum is set to include the learning of music from a more diverse set of cultures than is currently taught. The proposed new arts curriculum includes criteria such as “identifying and discussing key musical features, social, cultural, and historical influences in music from different times and places, including Australia, the Asia region and other world cultures” (Australian Curriculum, Assessment and Reporting Authority 2012, p. 103) and “understanding and communicating how the elements
of music are interpreted and treated in a particular way within various musical styles, cultures and traditions” (p. 106). In addition, these world music programs in schools' curriculums work within a relatively narrow scope of methodologies and program structures. As already discussed, there is a dominant elements-based approach in teaching world music in many countries.

There are some world music courses that support these school curriculums. Anderson and Campbell (2011, p. 3) point out that a wider variety of material for world music courses is now produced in the United States and internationally. The U.S. school curriculum uses material from Silver Burdett’s Making Music books and CDs, which includes songs, percussion activities, information on instruments, and background information for a variety of different cultures’ music (Authors of Silver Burdett books, 2008). Campbell’s (2004) Teaching Music Globally in conjunction with Wade’s (2004) Experiencing Music, Expressing Culture, have many examples of different sound and rhythmic awareness activities involving a variety of different musical examples from China, India, Africa, Indonesia, the Caribbean, Latin America, and Indigenous American cultures. A U.K. primary school program designed by Jim Bernardin consists of a 68-track audio CD of exercises, rhythms, and songs which includes music from the Caribbean, Brazil, India, Africa, Japan, and China, background information on each culture, and music notation for more than 70 exercises, but designed for use with typical school percussion instruments (http://www.worldmusicworkshops.co.uk, 2012). Cain (2011) describes a new set of Singapore secondary schools’ text books, with accompanying compact disks, entitled Music Alive by Hilarian, Francis, and Lum (2008). This series of books “has been written specifically to highlight musical influences on local Singaporean music genres and introduce students to expressions of sound in both Western and Asian contexts” (Cain, 2011, p. 198).

**Benefits and challenges**

Jorgensen (2004) highlights the benefits that learning world music can bring to students. She refers to advantages that affect the emotional, intellectual, and social behaviour of children and are far-reaching in nature. As she describes the process of deconstructing the music of one’s own particular heritage and that of others she states that:

> The music teacher can help to develop qualities of curiosity, open-mindedness, respect, and empathy for different others, and imaginative reconstruction of how things might be different, not only musically, but in the larger society. One can, at the same time, enlarge students' horizons of understanding and construe identity more inclusively. (p. 12)
Wade (2004) also discusses these broader advantages when she says that “individuals grow more cognizant of their multiple, shifting identities” (p. 149). Multiple musical identities enable students to increase their flexibility and originality, which is part of developing creativity. More specifically, Volk (2002, p. 23) talks about how learning world musics demonstrates to students how other cultures “think in sound”. This is a way for students to explore new musical identities, as new musical choices “may enable students to find their own musical voices” (p. 23), in a way that they may not have done previously.

In considering some of the specific musical benefits derived from world music learning, Campbell’s (2004, p. 13) studies of high school students exposed to diverse musics found that their awareness of different structures was then reflected in their compositions and improvisations. This point is further emphasised by Anderson and Campbell (2011, p. 3) when they refer to students developing “greater musical flexibility and polymusicality”, which can contribute to a broader range of styles reflected in their musical creativity. They mention the importance of early exposure to a large array of musical sounds, so this polymusicality can develop. As well as discovering “different but equally valid ways to construct music”, students can also learn the “distinctive, inherent logic of each music” (p. 3). These benefits relate directly to the creative thought process, as it enables students to use both divergent thinking (exploring a variety of new and different musical structures and styles) and convergent thinking (using the new knowledge of different musical structures and styles to make more informed decisions and find the best solutions in composition and improvisation). Kwami (1996, p. 64) also expresses the benefits of world music learning in relation to the creative process, as he discusses how students attempt to solve the problem of bringing diverse musical traditions together. His terminology of the resultant “re-creations” that come from this problem-solving refers to a process where diverse information is brought together to recreate something new. In essence this is a way to explain the process of creative thinking.

Many authors refer to the creative process involving metaphorical thinking (Csikszentmihályi, 1996; Starko, 2005; Sternberg & Williams, 1996). Metaphorical thinking allows taking ideas from one context and “representing the idea effectively in a new context to create a new synthesis, transformation or perspective” (Starko, 2005, p. 104). Metaphorical thinking happens, then, when knowledge of Western music is reappraised and viewed in a different manner as a consequence of learning world music. Aubert (2007, p. 80) discusses this concept and how his many years of exposure to Indian music allowed him to “rethink my own field of musical perception”. Similarly, Perlman (2004) in his study of Javanese gamelan music found that these musicians employed a process of metaphorical
thinking in the creation of the implicit melody within the music (p. 170). He discusses how any new musical concept can be linked in a variety of ways to an existing and known musical concept, which then makes multiple interpretations and perspectives possible (p. 200). Perlman also points out that from his learning of Karawitan music, he was able to find a new understanding of Western music and to the use of metaphor in this music (p. 199).

There are also a number of findings of potential extra-musical benefits that can arise from music education in general, not just world music specifically. Swanwick (1988) points out that the arts are capable of contributing to the development of the mind at a conceptual level, as they allow for flexible ways of thinking (p. 48). Improvements in verbal and mathematical capabilities and IQ will be discussed in more detail in Section 4.6 of this thesis.

There are challenges in learning something that requires a different approach, especially when there are few proven teaching methodologies and courses. While generally advocating the benefits of learning world music, Elliott (1998) also raises some of the challenges. He suggests that while cultural diversity in music education is important, “people do not immediately understand, appreciate, or enjoy the musics of other cultures” (p. 11). While this statement seems a little too generalised to stand up to scrutiny, undoubtedly there are benefits in being familiar with a particular music, and there is a certainly a strong relationship between preference and familiarity in music, as discussed previously. So as students come to appreciate a style of music more, they should be able to learn it more easily. With this reasoning, the initial stages of learning a new music, whether it comes from a different culture or not, can be difficult, but the learning process becomes easier as the music becomes more familiar (Francois & Schön, 2011).

Dunbar-Hall (2006, p. 53) describes the disjuncture between music taught in a classroom setting and music taught as part of a cultural setting, within one’s own cultural background. In many Western classrooms, the students’ cultural backgrounds will be predominantly Western, so they will be more at ease with a teaching methodology that is more structured and taught through notation, rather than aurally, based on their previous experience. This learning style may differ from those delivered and expected by the teacher, if the teacher is coming from a world music cultural background. Schippers (2010) also highlights the importance of the skills and attitudes of the teacher to the success of cultural diversity in music education (p. 106). He talks about the reverse situation, when if the teacher is more comfortable and knowledgeable about Western teaching methods, then this can cause problems in delivering courses that require a more holistic approach. The hegemony of
Western methods in classrooms implies that Western approaches are assumed to be the best way to transmit knowledge, regardless of their cultural context (Cain, 2011, p. 214).

The issue of context also arises when discussing the challenges that students and teachers face in world music education. As Dunbar-Hall (2006), Campbell (2004), and Schippers (2010, p. 41) mention, teaching world music in a classroom situation inevitably means that the music is transmitted in a "non-authentic" environment. For example, Hindustani music performance and African performance composition, both of which thrive on vibrant audience interaction, cannot be experienced in the same way in a classroom as they can in performance contexts with an enculturated audience. Music whose primary function is social or religious loses some of its meaning when performed and taught in a different environment, as Cook (1998) suggests. On the other hand, many music practices survive recontextualisation quite well, as any performance of St Matthew's Passion in 21st century concert halls will illustrate.

As the discipline of teaching world musics across cultures is still in its fairly early stages of development, there are many challenges to be overcome, in addition to the many benefits it can provide to students. How to ensure transmission methods are optimal and that they can provide students with improved levels of creativity is something which warrants further investigation. There is very little research to date to ascertain the success and outcomes from world music programs and the pros and cons of various methodologies (Abril, 2006, p. 30; Cain, 2011, p. 25; Szego, 2002, p. 710). In 1998, Edwards found no quantitative studies which addressed either musical or non-musical achievement resulting from instruction in diverse musics. Unfortunately, this situation is still very similar, with relatively few studies (Abril, 2006; Fung, 1996; McCarthy & Stellacio, 1994; Shehan, 1984) addressing this topic. This provides us with the opportunity to address three important issues in this study, in order to further assess the benefits and challenges of different approaches to world music education. The first important question is whether it is preferable to teach a few world musics in more depth or give students a wider variety of choices, which may increase flexibility but not provide a strong enough opportunity for students to gain familiarity with each music. The choice of teachers and their approach also has a strong impact on the success of the learning, so choices regarding teachers’ effectiveness of their methodological approach are a second important issue to explore. Assessing how students’ perspectives and understanding on Western music changes after exposure to world musics is also important to investigate further.
4.6 ‘Learning’ Creativity

According to Cropley (2001), fostering creativity is “an integral part of education and should be a guiding principle for teaching all children” (p. 151). Anderson et al.’s (2001) view is that the cognitive process of creativity is the highest level of intellectual functioning. Critical and creative thinking are fostered through opportunities to use broad and adventurous thinking, reflecting on possibilities, and metacognition (Perkins, 1995), and can result from intellectual flexibility, open-mindedness, adaptability, and a readiness to experiment with new concepts (Gardner, 2009). Scott, Leritz, and Mumford (2004) analysed the effects of a diverse spectrum of creativity training programs that differ with respect to the particular type of processing activities stressed in training. They observed that “creativity training had noteworthy effects, not only on divergent thinking but also problem-solving, performance, and attitude/behaviour criteria” (p. 153). If the capacity for creativity is something that can be learned or at least enhanced, then what are the factors that contribute to developing this capacity? Can group learning and the level of teacher guidance and motivation stimulate creativity? In these situations, what is the importance of promoting factors such as imaginative thinking and discovery learning? How does music education specifically utilise these factors and influence creativity? In this section, the influence of teachers, parents, and peer group is analysed, together with the individual’s cognitive psychology processes that contribute to creativity. An investigation of music education’s contribution to learning creativity is then undertaken, while ultimately exploring if all these factors can be found in the context of world music education.

Group and individual approaches

One of the issues that emerges in much of the literature on creativity is the contribution of the group versus the individual in the development of creativity. As discussed in Section 2.1, the systems approach to creativity, as referred to by Csikszentmihályi (1999), essentially sees creativity as a social construct dependent upon the individual (and their personal background), the field (what Csikszentmihályi refers to as a particular social system), and the domain (the culture in which the individual operates). Within these parameters, there will be varying levels of influence from the group and from the individual on the resultant creativity. In my case studies, the children are the individuals, the field is the practice of world music, and the domain is an essentially Western culture of music education.

In her study of children’s musico-social interactions, Barrett (2006) discusses the influence of peer groups and families on children’s creative song-making. She talks about the use of “chant” or “song formulas” in these musico-social interactions within children’s play groups,
and how children use them as a basis for developing further individual songs (p. 204). Barrett refers to Dissanayake’s analysis of these children’s groups and their characteristics such as “mutuality, belonging to, meaning making, competence and elaboration” (p. 206). Interestingly, Barrett believes that these characteristics are what “underlie children’s independent development and use of invented song” (p. 207). So while the group has a great influence on the children’s creative output, it is the individual child that creates the songs as they become increasingly independent. Campbell and Kassner (2006) also discuss children’s song-making and the effect of the peer group on creativity. They refer to a study by J. Wiggins (1994), who found that working in groups facilitates musical thinking as children challenge each other’s ideas (p. 257). The variety of ideas that come from different children within a group then contribute to greater fluency and originality in the output of songs.

In analysing the individual versus group contribution to creativity, it is important to consider the views of Sawyer, whose work has focused on these aspects in the field of music. Through his investigation of musical collaborations, Sawyer (2006) found that it was possible to understand “the essence of group creativity” (p. 164). He identifies improvisation, collaboration, and emergence as three characteristics of group creativity (p. 148). He states that improvisation is found in most forms of group creativity, and that creativity happens in the moment of the encounter, so therefore group dynamics and relationships are important. He discusses collaboration and its contribution to the creativity of a group. Sawyer’s view is that “all members contribute and their interactional dynamics result in the performance” (p. 148). The third characteristic, emergence, refers to a collective phenomenon which Sawyer describes as “the whole is greater than the sum of the parts” (p. 148). The issue of structural elements also arises in Sawyer’s discussion of group creativity. He points out that the existence of these structural elements within music does not detract from the “emergent, collaborative nature of group creativity” (p. 157). So he emphasises the widely held view that creativity occurs within a known structure, as is the case with many world music structures.

Sawyer (2006) also discusses the phenomenon of “group flow” (p. 157), that is, when a group is performing at its peak. It is related to Csikszentmihályi’s concept of flow, but instead of representing a state of consciousness within the individual performer, “group flow is a property of the entire group as a collective unit” (p. 158). He states that “group flow can inspire musicians to play things that they would not have been able to play alone, or that they would not have thought of without the inspiration of the group” (p. 158), a concept that jazz musicians often experience when “the important role played by the emergent group flow propels their own performance to ever higher levels” (p. 158). Further supporting the group approach to music education is a study by Baloche (1994), in using the Torrance, Khatena,
and Cunningham's (1973) Sound and Images Test, who also found that children participating in cooperative groups in music education classes increased their creativity over that of others who did not participate in such groups. Therefore, in any musical environment where there is a benefit to be obtained from the group in promoting inspiration and originality, it is important to understand to what extent this translates into creativity.

If we extend the concept of the group more broadly by taking a systems view of creativity, then it is useful to consider the influence of other close adults on an individual's creativity. For children, the influence of their parents and teachers contributes to their perspectives and so these interactions should be part of understanding a child's creativity. Glaveanu (2010, p. 9) discusses the views of Vygotsky, who was interested in creativity as a process occurring in real-life collaborations, such as those between child and adult. According to Smolucha (1992), Vygotsky proposed “that creative imagination develops from children's symbolic play interactions with caregivers” (p. 51). Both teachers and parents can be classified as caregivers, so these interactions with children are important to develop creativity. If we think of music education as such an interaction, where communication, interactive dialogue, and certainly play occur between caregiver and child, then this supports a creative experience, according to Negus and Pickering (2004, p. 23). While not assessing world music education specifically, Duncan (2007, p. 20), in her study of children's creativity and how it is developed through participation in group music sessions using the Kindermusik program, found that parental involvement was an important asset. Using the Torrance TCAM Tests (1981), she found that the collaborations between parent and child whilst participating in this program enhanced children’s confidence, motivation, and knowledge, resulting in an increased level of creativity in the children.

The idea that a group of people can provide a diverse set of ideas and, thus, naturally manifest one of the elements of creativity, is one that has been explored in research of work environments. James et al. (2004, p. 8) refer to a number of studies that claim diversity in the team make-up will foster creativity (Amabile, 1999; de Souza Fleith, 2000; Simonton, 2000). When teams are comprised of like-minded students, they will reach their conclusions quickly but will fail to explore and debate other ideas (Amabile, 1999). Similarly, James et al. (2004) stated: "A diversity of people means a variety in expertise, creative-thinking styles, and cognitive abilities" (p. 8). Leung and Chiu (2010) also refer to numerous studies to come to the conclusion that “exposure to diverse normative views in groups or work teams consisting of culturally diverse members is positively related to the development of creative potential possibly because such exposure increases tolerance or expression of heterogeneous opinions in the groups or teams” (p. 724). Extending these ideas to the world music education arena, a
group may comprise students with a diversity of backgrounds, interests, and knowledge of different musics. When learning a world music together, the group’s different perspectives may assist students to grasp new concepts, develop different views, and learn new skills.

In many world music cultures, the learning is done in a group environment as part of the traditional learning environment. African music is closely associated with its social function and the cultural group it represents (Chernoff, 1979, p. 33) and learning is done by observation and participation, usually with guidance from a leader “sharing the music and reacting to the contributions of others around them” (Primus, 2002, p. 11). Javanese musical practice is “heavily weighted towards ensembles, with no context for solo instrumental performance” (Brinner, 1995, p. 5), the “primary mode of learning is participation in actual ensemble performance (p. 142) and takes place mainly through imitation and osmosis (p. 135). Although students will practice concepts individually and reflect on the music, this is peripheral to the main knowledge acquired from the group experience. Group learning is not always the norm in world music education, however, as in Indian music much individual learning occurs in the context of the guru-shishya relationship (Neuman, 1980).

In summary, there is evidence from the literature that group learning and participation are widespread and potentially have benefits that contribute to creative output. Sawyer (2006) states that “if music is a collaborative practice and if communication is central to musical creativity, then our educational methods should emphasize group interaction” (p. 161). While an individual’s own creative characteristics and cognitive processes obviously contribute to their creative output, the question is to what extent would these emerge without the presence of the group? As many of the world music cultures are taught through group learning, can we understand the benefits of this practice in the contribution to individual and group creativity? For many children learning instrumental music in a Western classical environment, the concept of musical group learning will be unfamiliar, although they may be familiar with classroom group music lessons. As they encounter this style of learning and the new styles of music, will their individual perspectives bring a greater diversity of views and so contribute to greater fluency and originality for the group? Group creativity that evolves within existing musical structures can be explored through world music to see the extent to which structure both supports and restricts creativity. These are some questions to be explored in this research through the world music pilot program.

**Role of the teacher**

How does the teacher’s role and approach influence children’s creative learning? As there is individuality in the different styles of children’s learning, and indeed in the process of
creativity, it is important that teachers give consideration to this point and allow for flexibility in their mode of teaching. That is not without challenges in group lessons focusing on three different world music traditions in an essentially Western teaching environment. Children’s learning styles, which are culturally embedded at an early stage (with a genetically-determined component that remains the subject of debate), can differ in their "openness and curiosity to new tasks and challenges, their task persistence and attentiveness, their approach to reflections and interpretations and their capacity for invention and imagination" (Kagan, Moore, & Bredekamp, 1995, p. 28).

There is discussion amongst education theorists and practitioners about the amount of input teachers should have in guiding the learning process. Bruner (1977), Elliott (1995), Montessori (2006), Swanwick (1988), and many others have views on whether a greater degree of teacher involvement and structure is positive in contributing to effective learning. McArdle and Piscetelli (2002, p. 15) discuss this in the context of early childhood art educators and how they “blur the boundaries between natural unfolding and guided learning, between creativity and technical training”. Bruner’s theories of education promote students' learning through discovery but require teachers to work in a cooperative mode with students (Siddiqui, 2008, p. 96), so teachers’ influence is still important for children to find creative solutions to problems. The Montessori approach to education promotes teachers giving direct instruction but still allowing children to self-correct, so creativity does evolve but within a given structure (Montessori, 2006). Swanwick (1988) discusses the concept of “framing”, referring to teaching style, the degree of control that the teacher possesses over selection, organisation and pacing of what is to be learned (p. 121). When the framing is strong, then the teacher is mainly instructing, imparting procedures, conventions, and skills to the student. On the opposite side of the spectrum is “encounter,” when music is presented as a whole, often in an immersive context (p. 128), which is the holistic approach. In this case, students have the ability to “speculate” on a multitude of structures and possibilities. Swanwick believes that music education should be “a dynamic relationship between encounter and instruction” (p. 135). Burnard and Murphy (2013) also promote the importance for teachers to work in a creative and collaborative way alongside children, so that children’s creativity can flourish. These views support the view that the amount of structure and guidance given to students versus the amount of self-discovery and exploration is an important factor in the effectiveness of creative teaching.

The required components of creativity need to be understood and facilitated by the teacher in order for this to be transmitted to the student. As the creative process involves both divergent and convergent thinking (Webster, 1990), it is important for teachers to utilise
both in facilitating creativity. Burnard and Younker (2004) discuss this point as “teachers need to promote component skills of divergent and convergent thinking as links between problem-setting and problem-solving” (p. 72) when facilitating children’s compositions. In this context, the authors advocate that “teachers need to perceive creativity in ways that resonate with students’ approaches to composing” (p. 72). Geake (2009) also discusses this concept, arguing that teachers should encourage students to use divergent thinking by considering alternative possibilities to solving problems through delaying closure (convergent thinking) in problem-based tasks (p. 100).

Motivation is one of the other prerequisites for creativity, as previously discussed in Section 2.1. In this respect, teachers perform a crucial role in facilitating creativity for their students. As teachers represent a strong influence upon children in a learning environment, it is obviously important that they motivate and encourage students to apply creative thinking (Amabile, 1996). This may be particularly important in world music education, where the area is very unfamiliar to students. Teachers who can promote creative approaches and show that they can lead to successful results provide motivation for their students. James et al. (2004) support this point as they discuss how creativity develops when “teachers encourage curiosity, exploration, confidence, risk-taking, and balance” (p. 8). However, in some music education approaches, teachers do not provide the opportunity for much verbal motivation. Campbell (2001a) discusses how in learning Javanese gamelan, a teacher’s feedback is rare and students of the gamelan must learn self-reliance, self-motivation, and self-evaluation (p. 221). Van der Bos (1992) also surmises the point that the teacher’s role tends to be more passive in the holistic approach to music learning (p. 169). In considering the different teachers’ roles and different levels of motivation provided to students, the question arises which is more effective for creativity, and whether there are there arguments for both approaches, or it being a blend of styles that is likely to be most successful?

In considering the role of the teacher, the importance of the group to learning is again emphasised by Sawyer. He discusses the concept of “guided participation” (Sawyer, 2006, p. 162). Here the role of the teacher is not the one that brings the knowledge to the child, rather it is the collective practice and group activity, which must be “skillfully facilitated by the teacher, of course. Each child appropriates the collective practice at his or her own pace, and to a different degree” (p. 163). This brings up some interesting issues in the context of world music education. Some world musics are traditionally taught in groups, and group learning is part of the process of acquiring the required knowledge. “African performance composition” is a learned process where the group dynamics are essential and the student is encouraged to
participate in the performance in some way from the beginning (O. Nzewi, 2010, p. 14). In such cases, it would be almost impossible to learn individually.

The concept of the teacher approaching his or her teaching creatively is one that also needs consideration. Leong’s (2010) belief is that educators should look for new ways to incorporate flexibility and exploration in their teaching and assessment to encourage an environment of creativity and imagination (p. 88). Greene (1995) makes an important point when she says that teachers who ask questions to which they do not know the answers are involved in a genuine educative enterprise. By using this technique in their lessons, teachers themselves explore the unknown and, as a consequence, participate in their own process of discovery. If the creative characteristics of exploration, curiosity, reflection, and risk-taking become part of the teacher’s own approach, this should then influence the students’ level of creativity. Unfortunately, it seems many teachers are still reluctant to take this leap in music education. Cain (2010) interviewed some music teachers in Australian private schools and found that while they were open to changing their teaching methods in principle, “they were not at all prepared to use philosophical inquiry and critical reflection to enforce change” (p. 163). This contradicts the ISME Musics of the World’s Cultures Revisited, which recommends that all music educators “continually examine their practices in terms of choice of material, ways of learning and teaching, and underlying values” (International Society for Music Education, 2010, p. 8).

Lin (2011), talks about the insights and implications in developing creativity through education. He discusses the concept of teacher ethos and presents his model which comprises a framework of creative pedagogy with three features: creative teaching, teaching for creativity, and creative learning. He notes how teachers influence and motivate students and refers to a similar perspective voiced by Lucas (2001, pp. 35–42), that “teachers encourage learners’ creativity by passing on their enthusiasm, imagination, and other talents” (Lin, 2011, p. 152). Fryer (1996) also discusses how in teaching for creativity it is essential that teachers create a learning context for problem-solving and to appreciate learners’ creative contribution. Lin refers to the pedagogical principles that foster children’s “possibility thinking” identified by Cremin, Burnard, and Craft (2006), which are

useful to describe how teachers create a supportive environment through effective strategies that prioritize children’s autonomy. They maintain that the three principles, involving standing back, profiling learner agency, and creating time and space, help to encourage the children’s questioning and active engagement in learning
by passing the decision making and the responsibility for learning back to the child. (Lin, 2011, p. 152)

The level of knowledge of teachers in the area of world music is an issue to consider in thinking about the role of the teacher. Schippers (2010) points out that the skills and the attitude of teachers is “a central issue in the success of cultural diversity in music education” (p. 106). If teachers aim to transmit knowledge in a music and culture that is unfamiliar, then their approach may not be as confident and as creative as it could be. If teachers are required to present unfamiliar elements from different cultures in their music teaching, then Abril (2006) and Goetze (2000) emphasise the necessity for teachers to consult with culture bearers for contextual information and appropriate methods of transmission and performance (Cain, 2011, p. 83).

In some cultures, however, the teacher’s role is seen as one of master musician, an example in Hindustani music culture being that of the guru-shishya relationship. A high level of respect is given towards the teacher, and the student tends to adopt a non-questioning attitude as new information is transmitted and accepted. Slawek (2000) describes how in the hierarchical, Indian culture where music is highly regarded, the teacher can become like a god (pp. 457–467). Farrell (2009, p. 61) explains that “strict adherence to the instructions of the guru teacher is expected and demanded”. The teaching style is a balance between “the demand for strict imitation and the encouragement of expressive originality” (p. 61). This poses a question about the influence the teacher has on the student’s creativity in this guru-shishya relationship. If the instruction does not allow for the student’s individuality and own expression, does this limit their creativity in a genre that is largely improvisational?

The role of the teacher and its influence on children’s creativity can be investigated using world music education as a basis. World music education provides a good forum for this investigation as it is still an area where a scarcity of research exists on the benefits of different pedagogical techniques, and students need to be able to respond to these different techniques if creativity is to be fostered. The degree of guidance and structure in the relationship between teacher and student is one of the key questions to determine in assessing the effect on creativity. Within this relationship, the amount of flexibility in the teacher’s approach, the opportunity for self-discovery from both the teacher’s and student’s perspective, and the level of motivation provided by the teacher to the student are all important components to explore in the context of the world music case studies.
Imagination and analogy

The idea that imagination is a characteristic associated with creativity is a belief held by many in the field of general creativity (Lubart, 1994; Runco, 2007; Sternberg, 1999; Torrance, 1981; Zachopoulou et al., 2009) and also in the field of musical creativity (Elliott, 1995; Hargreaves, 2012). As Copland (1952) puts it: “The more I live the life of music, the more I am convinced that it is the freely imaginative mind that is at the core of all vital music making and music listening” (p. 17). However, there are different interpretations of imagination and its influence on creative thought, so it is important to consider these in the context of this study.

Runco and Pritzker (1999) define imagination as a “form of playful analogical thinking that draws on previous experiences, but combines them in unusual way, generating new patterns of meaning” (p. 92). Vygotsky (2004) says that “our brain combines and creatively reworks elements of past experience and uses them to generate new propositions and new behaviour” (p. 9). He defines this ability of our brain to combine elements as imagination or fantasy. Hargreaves (2012) considers the artistic faculty of the imagination and describes it as “the capacity to produce new ideas by reorganizing or simplifying past impressions; that is, the ability to place known impressions into new relationships with one another” (p. 542). In all of these definitions, there is a concept of utilising past experiences and knowledge to create something new, but the links to the existing experiences and knowledge are still clearly recognised. I think this becomes very relevant when considering imagination in the field of world music. By listening to diverse musics, new musical perspectives and relationships can be imagined by drawing on the listener’s existing knowledge of music. As imaginations can be ignited after exposure to new musical structures, this may enable a reorganisation of known musical structures, a result which contributes to new musical ideas and increased musical creativity. There are examples of this with a number of past and present musicians. Debussy was strongly influenced by Javanese gamelan music, in particular by its timbre of percussive instruments, its layered texture which was free from the European rules of counterpoint, forms which were built on circular or symmetrical patterns, and the use of non-diatonic scales (whole-tone and pentatonic, among others) which suggest slendro and pelog scales (Tamagawa, 1988, pp. 32–35). Steve Reich and Philip Glass are other composers whose minimalist works show non-Western influences. For example, Glass uses influences from Indian music such as rhythmic cycles (similar to talas) in Einstein on the Beach (1975) and in Reich’s Sextet (1985) there are influences of African rhythms (Lavezzi, 2006).
The concept of using imagination to reorganise known musical ideas and combine with new ones relates to the concept of combining the familiar with the unfamiliar, as previously discussed. To what extent the imagination is ignited and to what degree this causes a reorganisation of existing musical structures is still to be explored in many ways. Music provides a fertile ground to consider the concept of imagination. Reichling (1992) states that the “relationship between imagination and music is a mutually enriching one. Imagination is essential to understanding the musical symbol; music, in turn, cultivates imagination” (p. 28). Hargreaves et al. (2012) describe “imaginative listening” as a creative activity which is inextricably linked with and influenced by the social and cultural environments in which it takes place by (p. 168). W. F. Thompson (2009, p. 229) also makes the point that composers ultimately make selections from a set of musical materials in their musical imagination and these selections may be partially influenced by the cultural milieu. Similarly, Hargreaves et al. (2012) state that:

Listening to music is an active, creative process . . . all music processing involves centrally-stored personal networks of association . . . or schemata, which mediate all musical activities . . . the active processes of revision which our minds perform (while listening) are most usefully described as musical imagination. (p. 169)

So according to all these authors, imagination is a central component of music making, not just in composing music but in the act of listening to music. This implies that everyone invokes some form of imagination while engaging with music. Kivy (1997) emphasises this even more strongly when he states that listening to music without imagination “would be impossible” (p. 47). To what extent the social and cultural environments influence the imaginative listening process and, indeed, the imaginative musical composition process, are factors that can be explored in the context of world music education. A question to be posed is: Do the extra-musical factors contribute to increased imagination when learning a world music?

Vygotsky and Piaget both proposed relationships between imaginative play and creativity (Dansky, 1999, p. 394). They both refer to object substitutions that occur in children’s play (for example Piaget describes using a box to represent a car) as the earliest form of creative imagination. Vygotsky, however, believed that it takes some time for creativity to evolve. While children display creative imagination in play, a higher level of creativity is reached when imagination and thinking in concepts begin to collaborate in adolescence. Music again can provide a good environment to demonstrate these theories. Children’s free-song, as described by Barrett (2006) and Campbell (1998), involves episodes of imaginative play, and
the outputs of this process are considered to result in musical creativity, as previously discussed. But is their level of imagination increased as children go from this form of imaginative play to using a more cognitive approach for musical creativity in later years, as Vygotsky proposes?

Hargreaves ranks the importance of imagination very highly in considering the whole concept of creativity. He proposes that “musical imagination is a term that might be used to apply to the activities of the musical executive function (in the brain); that is, to the cognitive processing underlying music perception and production, which is essentially creative in character” (Hargreaves, 2012, p. 553). So imagination is the core of Hargreaves’ model, while creativity is only one part of his model of musical processing. Elliott (1995) has a different view to Hargreaves, as he considers imagination to be only one aspect of creativity. He believes that while imagining can play an important role in musical creating in that it allows us to envisage new possibilities in your “mind's ear” (p. 222), it plays a lesser role in musical creativity. Elliott also distinguishes between “spontaneous imagination”, which is a reaction to environment or emotions, and creativity, which he believes to be an intentional process. If Hargreaves’ view is adopted, then imagination should be an important part of understanding musical and indeed general creativity. Using Hargreaves (2012) terminology, “the networks of association” (p. 539) can be extended by world music encounters and therefore potentially create more breadth in musical processing. The question then becomes; how much does this increased breadth in imagination extend creativity?

Finally, the effect of personality traits will also be considered in the whole mix. Auh (2000) points out that among personality traits, imagination is significantly related to exhibiting musical creativity. Is this personality trait dependent upon socio-cultural background, and is it a pre-requisite for developing an imaginative way of thinking? Or can imagination be a process that is learned and enhanced through activities such as listening to and engaging with a breadth and depth of new musical experiences?

Runco and Pritzker’s (1999) definition of imagination includes the concept of analogical thinking (or in other words, use of metaphors) (p. 92). It is useful to understand this further within the context of music education. A definition of musical metaphor is given by Spitzer (2004) as “the relationship between the physical, the proximate, the familiar and the abstract, distal and the unfamiliar” (p. 4). Again, we see the significance of the combination of the familiar and the unfamiliar. Another definition is provided by Weinrauch (2005, p. 110) with “metaphors depend on the creation of implications based on perceived analogies of structure between two subjects belonging to different domains”. The linking of the two different
domains and the linking of the familiar with the unfamiliar is where imagination is required and where individuality is expressed. Spitzer describes this process of invention of a metaphor as “like a discovery” (p. 161; cf. Schippers, 2006).

Weisberg (1988, p. 148) points out that problem-solving techniques used by scientists and artists often involve analogical thinking, and that “many theorists emphasize the role of analogy in creative thought” (p. 149). "Remote analogous relations are used as the basis for memory search” (p. 159) and so in this way, creative solutions to problems may come from relating already known information that is stored in our memory, but from different domains. Analogy and metaphorical thinking is ubiquitous in music. It allows us to make comparisons and relationships between elements in the music, between images, emotions, and stories that the music invokes (Zbibowski, 2008, pp. 502–525). One of the prominent advocates of musical metaphor, Scruton, discusses in *The Aesthetics of Music* (1997) how the use of metaphors of space, movement, and animation is essential to the musical experience, and how hearing rhythm, melody, and harmony must be described in terms of metaphors.

A good example of analogy within music is presented by Perlman (2004). He argues that Javanese musicians use analogical thinking in their concept of an “implicit melody” (p. 8) within Karawitan music. This implicit melody is neither played nor heard, but forms the basis on which all the other melody lines revolve. Scruton (1997) also discusses the importance of analogical thinking for creativity and says that “many new insights come from daring analogies between distant conceptual worlds” (as cited in Perlman, 2004, p. 33). He describes how analogy is present in many forms in Karawitan music, in the “compositional process, in the performer’s unconscious knowledge of the composition and as a pedagogical tool” (p. 35).

Since music provides a fruitful basis for exploring the concept of metaphor and imaginative thinking, as discussed, it also provides a basis to learn some of the processes associated with creativity. Marzano, Pickering, and Pollock (2001) confirm that it is important for students to understand and use metaphor as a powerful key to help them learn and integrate new knowledge by comparing and contrasting it to existing or familiar knowledge. In introducing new musical structures and ideas, students can benefit from relating them in an analogical way to existing musical knowledge. In this way, further new musical relationships may evolve. Schippers (2006) also discusses the importance of the use of metaphor in music education and its prolific use in many of the world’s musical traditions. He argues that metaphor enables the potential for greater understanding of musical structure, technique, and understanding. Therefore, it is possible that the use of metaphor in world music
education can be an important technique to develop not only greater musical knowledge, but also enhanced musical creativity.

The use of imagination in the context of my world music education case studies will be one of the key factors to explore. With exposure to new musical structures from the diverse world musics, students may reorganise known musical structures and improvements may be demonstrated in their musical creativity. It will be interesting to investigate to what extent the contribution of imagination actually makes to their creativity, and if there is a difference between students that begin their world music education with existing musical knowledge and those that have little formal knowledge to draw on. To understand the role of imagination in this process, the case studies integrate examples of musical metaphor to explain concepts and ensure that student listening in these studies becomes an active, creative process. The inclusion of storytelling in the workshops to encourage imaginative and metaphorical thinking is explored.

Developmental psychology and children’s creativity

Campbell and Kassner (2006) refer to the theories of Jerome Bruner, a proponent of the discovery method. They refer to his important theory that student learning takes place through their own discovery, as it “encourages taking risks, guessing and exploring student-initiated hypotheses” (p. 33). In the context of music education, Campbell and Kassner (2006) discuss how students who enjoy exploratory experiences and display occasional non-conformity are often indicating their creative thinking. These behaviours should be encouraged in student learning. The discovery learning method also supports Swanwick’s (1988) “encounters” approach, as the student is exploring and discovering for themselves and is only guided—not instructed—by the teacher.

Many educators and cognitive psychologists have applied constructivism to the development of learning environments. Jonassen’s (1991) view of constructivist learning highlights some important elements which relate to similar requirements for creative learning. Jonassen describes constructivist learning as “reality that is constructed by the knower” and makes the point that “we all conceive of the external reality somewhat differently, based on our unique set of experiences with the world and our beliefs about them” (p. 10). These different constructions of reality allow for different and original perspectives, and this is a characteristic of creative thought. Jonassen discusses how constructivism provides multiple representations or perspectives on the content, and provides an environment that helps learners interpret these multiple perspectives. The importance of self-reflectiveness and evaluation, another element also identified for creative learning which should serve as a self-
analysis tool, is also part of a constructivist approach. Campbell and Kassner (2006) discuss how constructivism is about "shaping of experience into new information and new interpretations" and that it is "integral to the learning process" (p. 23).

In any discussion of developmental psychology, it is important to consider Piaget, one of the founders of this field of study. Ayman-Nolley (1999) states in her review of publications on creativity that the consensus of views is that Piaget's theories of developmental psychology did not deal with the creative mode of thinking (p. 267). However, she explains how in fact Piaget's process of accommodation and assimilation are components of creative thinking. She refers to work by Cohen (1989), Feldman (1982, 1986), and Gruber (1981) whose work on a developmental theory of creativity and giftedness use some general aspects of a Piagetian framework (Ayman-Nolley, 1999, p. 267). Piaget defined assimilation and accommodation as follows: "The filtering or modification of the input is called assimilation; the modification of internal schemes to fit reality is called accommodation" and he states that both these processes are dialectic in nature (Piaget & Inhelder, 1969, p. 6). Ayman-Nolley (1999) describes the difference between the two concepts: "Assimilation occurs when children, in the course of an experiential encounter, manipulate some novel reality to fit it into their known schemes. Accommodation occurs when individuals alter their existing schemes in the course of their encounter with some new reality" (p. 268). Ayman-Nolley (1999) expresses a view that seems to make eminent sense, as she describes these processes by their relation to creativity:

The origin of the creative process is in assimilation, where the imagination in contact with the environment brings about a new spontaneous thought. Through the process of accommodation, the new thought can lead to new experimentation culminating in a creative product. The creative process can be very complicated, as assimilation and accommodation are intertwined. (p. 270)

This may well be what happens in the process of encountering new and diverse musics when new musical ideas are seen in terms of existing musical concepts and schemes (assimilation), and when existing musical concepts and schemes are altered (accommodation). This latter process has already been described when I discussed how Western musicians begin to change their perspectives on Western music after encounters with world music. The development of assimilation and accommodation takes place over a period a time, so it is important to understand how long it actually takes students of world music to first assimilate
new musical concepts, and then start to accommodate them within their own musical practice.

**Using music to promote creativity in general**

In their important 2000 study, Burton et al. state that capacities usually identified as “engendered in arts learning, such as creativity, imagination, critical and divergent thinking, are also dimensions that are widely believed to characterize thinking in other subject domains” (p. 228). In other words, perceptions of transfer may well be, in part, a function of the degree to which different disciplines share certain cognitive elements, dispositions, or ways of thinking (p. 230). Gardner (1983) discusses the link between musical intelligence and highly developed language skills but Demetriou, Shayer, and Efklides (1992) take the link between various domains of intelligence further in proposing that speed of processing, executive functions, working memory, and meta-cognitive processes underlying self-awareness and self-regulation contribute to transfer across different subject domains (p. 60). Greene (1995) believes participation in the arts involves a release of the imagination, which inherently leads us to new perspectives, which manifest in other domains. Eisner (2002, p. 71) demonstrates that the arts can instil a quality he calls “flexible purposing”, an ability to discern dynamic relationships and possibilities within any problem, media, or situation. However, the degree to which any skill, competency, or way of thinking is amenable to generalisation is dependent upon instruction, so the degree to which these capacities are transferable should depend upon teaching methodology and which subject domains are included. Perkins (1987) controversially argues that thinking skills do not generalise beyond the context in which they are learned unless teachers directly address transfer and encourage students to use their skills and competencies in other subject domains; however, it is difficult to support this view.

The topic of positive transfer from the arts to other subject domains is a controversial one. While there are numerous studies in this area, there have been mixed results and explanations when it comes to demonstrating this phenomenon. Studies have considered whether both general arts learning and, more specifically, music learning, contribute to improvements in general cognitive abilities and specific cognitive abilities, as well as improvements in creative thinking abilities. Hannon and Trainor (2007) state that “although it is clear that extensive music training in childhood affects development, controversy surrounds the question of whether such effects are specific to music or extend to other domains” (p. 470). While Johansson (2006) also says that musical training may improve other cognitive functions, she points out that “transfer to non-musical domains such as language,
mathematics or spatial reasoning is controversial” (p. 57). She states that there is some evidence that it might be the case, but further studies are needed to extend the research. W. F. Thompson (2009), however, discusses a number of studies that show some positive associations between learning music and improved mathematical ability (p. 244), music learning and increased verbal skills (p. 247), and music learning and general cognitive ability (p. 254).

Supporting a positive transfer of abilities, Hannon and Trainor’s (2007) study considered the general executive function and its relationship to general IQ in a musical context. They showed that IQ in children improved after taking music lessons and reported that “modest but consistent gains were made across all four indexes of the IQ, including verbal comprehension, perceptual organization, freedom from distractibility, and processing speed, suggesting that music training has widespread domain general effects” (p. 470). However, they state the reasons for these improvements as “small but widespread effects of musical training on cognitive processing might occur because music lessons train attentional and executive functioning, which benefits almost all cognitive tasks” (p. 470). Schellenberg’s (2004) study showed a positive correlation between music and general IQ, using the Wechsler Intelligence Scale for Children–III, and presented the view that this is possibly derived from increased attention and concentration skills used in learning music.

Any discussion of transfer of abilities across domains needs to mention the well-publicised “Mozart effect”. This famous study, conducted by Rauscher, Shaw, and Ky in 1993, showed there was a short-term improvement in spatial IQ after listening to Mozart’s Sonata K. 448. Further research to replicate results in children by Crnec, Wilson, and Prior (2006) showed no evidence for the Mozart effect in children. These authors were of the belief that it is the arousal-mood model which determines the Mozart effect, so it is a “function of the participant’s enjoyment of the stimulus and associated mild increases in arousal and positive mood” (Crnec et al., 2006, p. 306). The arousal-mood model, developed by Husain, Thompson, and Schellenberg (2002), where arousal and mood are understood to affect performance on a range of cognitive tasks, caused these authors to take the view that any enjoyable stimulus may confer a small positive effect on spatiotemporal reasoning. Hannon and Trainor (2007) also are of this opinion, and surmise that “research shows the so-called ‘Mozart effect’ to be of short duration (minutes) and dependent on modulation of arousal and mood” (p. 470).

Further work by W. F. Thompson (2009) discusses the association of music and emotion and the acknowledged powerful links between emotion and other aspects of cognition. He also refers to Ashby et al. (1999), who reviewed numerous studies that showed positive affect or
positive mood improves creative problem-solving, as “it improves ability to organize ideas, classify material and access multiple perspectives” (p. 254). This premise may also be supported by considering a recent study by Liem, Martin, Anderson, Gibson, and Sudmalis (2014). They found that it is the quality of arts education (which included music studies), and not the frequency, that has a positive correlation with the development of problem-solving skills. This implies that if students feel engaged and enjoy their arts experiences, then this will be beneficial to their creativity skills.

While the effect that music learning has on general cognitive ability is still relatively undefined as shown by these studies, there is still a general belief that since the arts involve creative processes, training on general creativity is likely to have a positive effect from arts and music. For this research on world music learning and creativity, it is important to explore this further and analyse if indeed other studies have supported this view. Burton, Horowitz, and Abeles (2000) found that students who have experiences in the arts improve in several dimensions of creativity, including elaborative and creative thinking, fluency, originality, focused perception, imagination, assuming multiple perspectives, and understanding layered relationships. Their study analysed high and low arts exposure in North American schools and the correlation with high creative thinking ability scores. They found that there was a strong correlation between students in arts-rich schools (multiple forms of arts regularly integrated into the curriculum), by showing these students scored higher on the Torrance TTCT (Torrance, 1974), providing some evidence that arts instruction improves creative thinking. Unfortunately, their study did not specifically look at music learning, so the amount of time dedicated to music instruction in different schools is not known, making it difficult to draw conclusions on the specific effect of music on creative ability.

Sowden, Clements, Redlich, and Lewis (2015) conducted a study that considered the benefits of dance instruction, both improvised and non-improvised, on children’s creativity. They assessed children using the Instances Task (Wallach & Kogan, 1965) and also the TTCT-Figural, and found that children who took part in learning dance which incorporated improvisation showed better divergent thinking and creativity after their experience (Sowden et al., 2015). Another study by Luftig (2000), using pre- and post-data from Torrance tests found that students receiving systematic instruction in the arts made greater gains than control groups in several dimensions including total creativity, fluency, and originality. However, in their summaries of numerous previous studies, Hetland and Winner (2004) found limited evidence that the arts predict improved performance on standardised measures of creativity. Fasko (2001) discusses Torrance’s view of using the arts to develop creativity. Torrance (1972b) found that the Osborn–Parnes Creative Problem-Solving
Program (Osborn, 1953) had better results than other approaches, such as using creative arts, in developing creativity (that is, divergent thinking production). However, Torrance did state that using the creative arts was also effective in teaching children to think creatively (Fasko, 2001, p. 321). In a large compendium of 62 U.S. studies edited by Deasy (2002), there were a number of studies which showed a positive transfer of skills to other domains, as a result of students’ involvement in arts education. Catterall (2002) summarises this by saying that the “argument suggests that experiences in the arts create capabilities or motivations that show up in non-arts capabilities” (p. 152). In particular, there were examples of a positive effect on achievement motivation, problem-solving strategies, and creative thinking, which are all factors relevant for the development of creativity.

Hallam (2010) cites a number of studies that investigate the effect music learning has on creativity (p. 278). She discusses how as we engage with different musical activities over long periods of time, permanent changes occur in the brain. Hallam also has similar views to Burton, Horowitz, Abeles and others in that the transfer between domains is a consequence of similar cognitive processes:

> These changes reflect not only what we have learned but also how we have learned. They will also influence the extent to which our developed skills are able to transfer to other activities. The transfer of learning from one domain to another depends on the similarities between the processes involved. (Hallam, 2010, p. 278)

She goes on to make the point that “transfer between tasks is a function of the degree to which the tasks share cognitive processes” (Hallam, 2010, p. 278). While my research does not aim to understand the shared cognitive processes between world music learning and other areas of study, the comparisons of the children’s musical and general creativity tests can provide some insight into this topic.

Hallam (2010) also discusses how the ways that student learn information is vital to development of creative skills, a point that refers to the importance of creative teaching, which was previously discussed. She describes a study (Altenmüller et al., 1997) that looked at the difference in students’ brain activity from different modes of music learning:

> When students (aged 13–15) were taught to judge symmetrically structured musical phrases as balanced or unbalanced using traditional instructions about the differences (including verbal explanations, visual aids, notation, verbal rules, playing of musical examples), or participating in musical experiences (singing, playing, improvising or performing examples from the musical literature), activity in different
brain areas was observed. This suggests that the tools and practices utilised to support the development of particular musical skills will have a direct influence on brain development. (p. 271)

In fact, the second method of learning music showed a greater activation in the right prefrontal and parietal areas of the brain, which the study argues comes from a more "global, holistic and cognitive strategy" of music teaching (Altenmüller et al., 1997, p. 33). A recent study by Takeuchi et al. (2010) found that the activation of the right prefrontal cortex was also correlated with higher creative test performance, so there may be some relationship between this method of music learning and increased creativity. Just as Hallam highlights the important point that the development of creative skills is likely to be particularly dependent on the type of musical engagement, Koutsoupidou and Hargreaves (2009) come to the same conclusion in their study of 6-year-olds, which compared those who had opportunities for musical improvisation with those where music lessons were didactic. Webster’s MCTM–II (2002) was used to assess changes in extensiveness, flexibility, originality, and syntax and showed that the improvisation activities significantly supported the development of creative thinking as opposed to the didactic teaching.

Further studies that have explored the relationship between music and creativity also show some connection between these two fields. In discussing the relationship between learning music and creativity, Jensen (1998, p. 37) makes the connection between the rate and pattern in which brain cells fire for both creative thinking and musical thinking. Rauscher et al. (1997) also contend that the neural firing patterns are basically the same for music appreciation and abstract reasoning. These views would concur with the Bilhartz, Bruhn, and Olson (2000) study, which by using pre- and post-testing on the Stanford-Binet Intelligence Scale, found an improvement in abstract reasoning in children after participating in 30 weeks of group music lessons, compared to a group of children who did not receive the music lessons. Understanding that abstract reasoning is one component of creative thinking, this seems to indicate a positive correlation between music learning and creativity.

There is a relationship between musical improvisation and creativity, as shown by a Limb and Braun (2008) neuroscientific study. This study found that spontaneous musical improvisation is characterised by “widespread deactivation of lateral portions of the prefrontal cortex together with focal activation of medial prefrontal cortex” (p. 3). Limb and Braun believe that this may offer “insights into cognitive dissociations that may be intrinsic to the creative process” (p. 3).
In summary, there are certainly a number of juxtaposing views from the research on music learning which highlight the tension between the different beliefs on its effect on extra-musical capabilities. In this research, I am focusing on the relationship between music learning—in particular world music—and creativity, so this relationship is the one of most interest. Previous empirical and neuroscientific studies do show some evidence of a positive effect on creativity, although there are no previous studies that look specifically at world music, so this presents a good opportunity to explore this aspect further in the world music case studies in this research. However, in the light of the conflicting results from previous research, it will be essential for this research to consider select and relevant criteria only, with the aim to arrive at some meaningful insights and conclusions. One of the results that has a direct bearing on the world music case studies is Altenmüller et al.’s (1997) findings that music learning changes the brain patterns. This opens up the possibility that learning a variety of musics with different teaching methods will change brain patterns. Music lessons that are conducted in a style that promotes creativity have been shown to enhance general creativity, so exploring this further in the context of world music teaching methodologies will be an important part of this study.

The world music pilots will employ a large musical improvisation component, rather than a didactic approach, to determine the influence of improvisatory techniques on learning creativity. It has been proposed that transfer of learning from one domain to another depends on the similarities between the processes involved, and there will be similarities, as well as differences, in the music learning processes across the different world musics. Consequently, learning a variety of world musics could possibly develop connections and understanding between these musics, which could in turn facilitate the learning of new music, given that patterns have already been established. The world music pilots will juxtapose different musical structures and assist students in developing connections to determine the impact on students’ creativity. Finally, the idea will be explored that positive affect or positive mood which stems from a motivational environment may improve creativity. The role of the world music teachers in this is to motivate and support the children during the pilot, and impact on their capacity to listen, think, and musick creatively.

**From approaching creativity to practising and analysing creativity**

In Chapters 2, 3, and 4, I have discussed some of the key ideas emerging from the literature on musical and general creativity, with a focus on how they relate to children. The multi-faceted nature of creativity is an important theme that emerges from this discussion, with this aspect evident in musical and general creativity and across different cultures. I have also
explored how many characteristics of creativity are manifested in culturally diverse music, in particular, the effect that improvisation can have on the display of creative abilities. Different ways of measuring the creative phenomenon were considered. As this study has music education at its core, I have analysed various characteristics of pedagogy that may benefit creativity. Enabling students to experience uncertainty and exploration, learning music holistically rather than didactically, and the benefits of collective learning are just some of the key themes that I have analysed and explored. Building on these key themes and ideas, the development, implementation, and analysis of the world music education pilot program now follows. Chapter 5 discusses the world music workshops in detail, and examines the findings from the three case studies in the context of these key themes and ideas. Chapter 6 considers the quantitative findings from the pilot, with an analysis of the children's Webster MCTM–II (2002) and TTCT–Verbal and Figural (2007a, 2007b) results. The aim is to understand how participation in a program of world music workshops may contribute to children's creativity development and, from this, to identify some of the key factors that can support this acceleration in their creative abilities.
PART THREE:
WORLD MUSIC WORKSHOPS
— A PILOT PROGRAM
5. **World Music Workshops: Interviews, Observations, and Reflections**

Based on the questions and insights outlined in Part 2, I designed and constructed *The Magic Tree of Music*, a program of 12 world music workshops, piloted over a six-month period at Queensland Conservatorium in Brisbane, Australia. Balancing breadth and depth, I decided to work with musicians and instruments from three different musical cultures. Children experienced four workshops each of Javanese gamelan, Hindustani tabla and west African djembe. A variety of different models of musical transmission formed the pedagogical approach for the workshops, with a focus on learning in a holistic style. The workshops included aural/oral learning, story-telling, visual imagery, memorisation, imitation, improvisation/composition, performance, vocal and instrumental playing, and group collaboration. From the point of view of gathering data, the world music workshops pilot yielded a number of rich sources, such as personal observation, interviews with teachers, parents, and the child participants, musical creativity and general creativity testing, and the recording of the actual world music sessions. After triangulating these with the literature, seven key themes emerged: Story-telling, Familiarity and Uncertainty, Confidence and Motivation, Improvisation, Group Dynamics and Individualism, Enculturation and Environmental Influences, and Musical Knowledge and Involvement. I will discuss each of these in more detail in this chapter.

The 16 children who participated in the world music workshops were spread over a younger group (ages 5–7 years) and an older group (ages 8–10 years), so that the workshops could be tailored to suit their potentially different learning styles and abilities. To help identify the individual children, while still preserving the children’s anonymity and to also make the data analysis more meaningful, the children have been divided into the following groups and given pseudonyms.
Table 5.1

Younger Group (Ages 5–7)

<table>
<thead>
<tr>
<th>Boys</th>
<th>Girls</th>
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<tbody>
<tr>
<td>Younger boy 1 (Tommy)</td>
<td>Younger girl 1 (Isabel)</td>
</tr>
<tr>
<td>Younger boy 2 (Nick)</td>
<td>Younger girl 2 (Naomi)</td>
</tr>
<tr>
<td>Younger boy 3 (Oliver)</td>
<td>Younger girl 3 (Dana)</td>
</tr>
<tr>
<td>Younger boy 4 (Bivon)</td>
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</tbody>
</table>
5.1 Story-telling, Metaphor and Imagery, Visualisation

There are many references to the creative process involving metaphorical thinking (Csikszentmihályi, 1996; Starko, 2005; Sternberg & Williams, 1996; see also Section 2.2). The frequent use of analogy and metaphor within the musical domain has already been discussed in Section 4.6. With this in mind, the world music workshops were designed to enable the children to explore the use of metaphorical thinking and to see how it represented and contributed to their creative process. The use of story-telling and visualisation as an important element of the workshops was a deliberate strategy. It was designed to provide an opportunity for the participants to draw connections between the images, the emotions that the stories invoked, and the related musical sounds and improvisations. By including story-telling and the associated opportunities for metaphorical thinking, the idea was to stimulate the children’s imagination and to see its potential to stimulate their creative processes.

In each of the different world music sessions, a variety of stories and poems from different cultures were introduced to the children. For example, the gamelan sessions featured a Javanese folk tale, Kancil and the Magic Gong, a story about a mouse deer outwitting a tiger in the jungle forest. This story was read to the children during each gamelan workshop, and they also could see the illustrations. It was then used as the basis for creating some musical accompaniments for specific scenes. Various aspects of the story seemed to spark the children’s imagination, and they indicated that they liked inventing their own sounds with the instruments to illustrate parts of the story. For example, they were asked to create sounds that would imitate the sound of a humming bee hive. One of their suggestions was to play two gongs together so that the resulting vibrations would create the right humming sound. One of the children, Roshan, expressed how he related the story to his musical improvisations. He said “I thought of the story and how I and others in the group could improvise it”. For example, he imagined the forest sounds and what he could do on the kenongs to create this sound, and also what the boy who was playing the drums could do to “keep us with the beat”—in this case, he was considering the combination of instruments and the overall sound effect. Another child, Rebecca, said that she thought the forest sounds should be “high sounding”, so the peking was a good instrument to use. She also used the peking to express the part of the story where Kancil is disturbed from his sleep: she said that the sounds she created here mirrored this feeling of him awakening:

DVD Excerpt A. Gamelan Workshop 14/9/13. Rebecca
Naomi described how she used the forest sounds in the story to create different dynamics, both loud and soft. She tried playing both hard and soft on the instruments to create the required effect.

In another story, *The Rabbits and the Elephants*—an Indian folk tale which was used in the tabla workshops—the two tabla drums were used very effectively by the group of children during their improvisations to imitate the rabbits running and the elephants walking. One child from the younger class provided some insight into his process of improvisation which related to this story. Tommy said that he was thinking of the story while he improvised sounds. He listened to what others in the group were doing, but if he thought that they were not doing the right thing, he would do something different. For example, he brushed his hand around the tabla skin, rather than striking it, to create the sound of the rabbits running away softly. I noticed that the younger workshop group in particular were able to create a wide variety of sounds from their tablas during this story accompaniment. For example, they played loudly and heavily and in the centre of the tabla for the elephants walking, softer and faster sounds—often done on the edge of the tabla for the frightened rabbits running, and smooth, soft, brushing sounds to create the mood of the moon upon the water:


The children participated in singing some songs and dancing in the djembe workshops and I observed that they particularly enjoyed this part of the workshop. The inclusion of some songs such as *Zongalee* that they could sing while drumming and for which they also made up their own dance moves, greatly engaged them as it provided variety and another way for them to experience and learn some of the djembe music. The children’s descriptions of their dances showed that they were thinking of various metaphors and ideas as they danced with examples of a “jungle dance,” “a lion dance,” “a kangaroo dance,” and “running at the beach dance”:

**DVD Excerpt C. Djembe Workshop 2/11/13. Younger Group Dance**

The singing and dancing activities helped draw the children into the stories and environment of the teacher’s childhood. They liked this, and particularly requested Nii Armah to tell them his different stories. The children became very engaged through this activity and they were interested to know about Nii Armah’s home country of Ghana—they asked a lot of questions about different animals there, different languages, and the different drums. Tommy, who demonstrated an excellent musical memory, would sing
some of the songs at home for many months after doing the workshops. He told me that he really liked the stories and songs that he had learned in the djembe workshops. He was thinking about the music, the environment from where it came, and about what it was like being a child there. All of these points provided a fertile ground for his imagination and helped inspire him in his musical improvisations.

Images of Javanese dancers were also shown to the children in the introduction to the gamelan workshops. This produced some inspiration for Tristan in particular, who then demonstrated a good example of creative expression. Julia was asked by the group to play the rebab at the end of one of the older group’s workshops. While she was playing, Tristan got up spontaneously and began dancing a solo in the style of the Javanese dancers he had seen on the video at the beginning of the class. In my case study notes, I wrote “he imitated their hand gestures and body movements. The movements were done very sensitively and in time and in style with the music” (Gamelan Workshop Notes, Older Group, 31/8/13). As many of the boys didn't appear to be interested in doing the introductory dancing at the start of the workshops, I was surprised that this occurred. It showed that this boy had indeed been paying attention to the video introduction and the dancing images had prompted him to express himself in this way.

The first few minutes of each of the workshops usually involved the children watching a slide show comprising of a variety of images. These images pertained to the history, geography, culture, and social environment of the world region relating to the music for that set of workshops. This was a way to provide an introduction to the music they were learning that day and to give them a background of the place and culture from where the world music originates. The children were interested in seeing these images and often asked many questions about them. This element of the workshop assisted in setting the scene and provoking their imaginations about the music they were learning:

**DVD Excerpt D. Gamelan Workshop. Visual Introduction**

The use of storytelling was an important component in the design of the Webster MCTM-II (2002). For a number of the tasks, the children are shown pictures and asked to create some sounds/music that goes with these pictures. As the administrator of the tests, I showed pictures of 1) a space ship taking off, 2) space creatures, 3) stars in the universe, 4) a space battle, and 5) a space ship crashing, and told the children for this composition task to make a sound story out of these pictures. I explained: "Let’s imagine that we take off, talk to some outer space creatures, fly through space, get into a space
battle and then crash. Pretend that you are in this space ship and that you are telling me this story through the music that you make” (Webster, 1994, p. 12).

There were also other composition tasks that asked the participants to create music that relates to a frog image and also to a robot. The final composition task (the free composition) asked the children to make up their own sound story, using images or a story that they think of themselves. I noticed that as the children were creating their music, these images often appeared to be reflected in the sounds that they produced. Some of the children that scored highly in these composition tasks were able to represent their storyline very well through the character and tone of their pieces. The children that liked an image and were able to imagine or picture their story usually were able to create an interesting composition that demonstrated contrasting dynamics, rhythms, and a musical syntax that related to their storyline. Dana told me that she liked the image of the frog and the idea that it was jumping from leaf to leaf. Her composition for this task was very original and had a high score for musical syntax, whereas she was not able to engage with the space pictures as much; consequently, her composition for this task scored much lower:

**DVD Excerpt E. Webster Test Pre. Frog Music. Dana**

Michael, who has a good ability with storytelling and who convincingly demonstrated metaphorical ideas in his interviews, was able to score highly on his free composition. He described the story behind his composition quite clearly and the different elements of a rock concert and the lighting and igniting of fireworks were evident in the use of the specific dynamics, meter, range, and structure of his piece. Rahul, who scored highly in originality and syntax for his free composition, was also able to relate his music to his story in a very descriptive manner. He described his story as being about hunting for treasure, encountering a monster and then escaping, and these elements were well reflected in the contrasting sections of his piece and the feeling of movement from one event to another in the music:

**DVD Excerpt F. Webster Test Post. Free Composition. Rahul**

It is important to also comment on the use of metaphor and imagery in the children's responses during the pre- and post-workshop interviews. For one of the world music examples and for the excerpt from Beethoven's *Ode to Joy*, the children were asked to explain this music to a person who had never heard it before. They were prompted to consider how they would draw it and what words they would use to describe the music.
Rahul chose to give a response in the post-workshop interview about gamelan music. He said that it was “a calm, slow and peaceful group of instruments. The sound vibrated to make me feel safe and secure. It made me feel like I was floating in a bunch of clouds”. His comments emphasise the influence of his emotional response to the music and how it invoked his imagination. The pronounced and apt use of metaphor shows how he thought of this music. Another boy drew fireworks and waves crashing on a beach (which he said was an analogy for the sounds waves going up and down) to describe the Beethoven piece, whilst Tommy produced some different images that related to how he saw this music—hearts, people singing, a ballerina (which he said was for dancing), an ear (which he said was for the people listening), and a person lying down (which he said was for the peaceful relaxation he felt).

Figure 5.1
The use of metaphor and imagery was not necessarily something that only occurred after the workshops, however. There were also some very good examples of the children thinking in this way in the pre-workshop interviews. Nick said that the Beethoven piece reminded him of the film *Les Miserables*, so he drew a soldier and a horse, under the sun. Another boy drew two figures fighting, which was representative of an “attack borg”, he explained. Naomi produced two very descriptive and metaphorical drawings. For the Beethoven piece, her drawing showed a few triangle peaks (which represented the highlights or peaks in the music) emerging from some waves. She mentioned water as this represented perhaps the steady flow and movement in the music. She also had two towers on either side, which she described as showing the “crashes in the music”. She described the gamelan music as sounding like “diamonds clinging together” and drew a lamp with strings of diamonds hanging from it (Figure 5.2b). The tuning of the gamelan can produce a "pulsating, shimmering sound" (Tenzer, 2011, p. 38); pairs of instruments are intentionally tuned slightly apart to create acoustical beating, which makes the “tones seem agitated and charged with pulsations” (p. 38). When she first heard this music, Naomi made an instinctive and powerful analogy by likening the sound to diamonds, which also have the property of shimmering.
I like the Opera Music because I love the opera and it is core Music.
All these examples may indicate that metaphor, imagery, and visualisation are important elements for children to express themselves in regards to music. From the examples in these case studies, it was evident that the children wanted to experiment with the different instruments to explore the palette of sounds that they could make. They were quick to come up with suggestions about the different sounds they could make and to use the stories as a prompt to create these different sounds was a way to initiate this experimentation. The stories engaged the children's imaginations, helping them to focus their attention and to think about the different possible sounds and rhythms that they could make with the instruments. I commented on the variety of different sounds from their tablas that the younger workshop group in particular were able to create during the story accompaniment activity; this group seemed to relish listening to the story and it gave them the opportunity to be able to try out some
different ways of making sounds on their tablas. The use of storytelling in the workshops may have drawn on the children's natural ability to use this medium (Saxby, 1992), and they were able to utilise this ability to assist with their improvisations. They were able to fluently improvise with the sounds without hesitation. This group was able to become involved in the story very easily, which seemed to help them in the fluency of their musical improvisations. It appeared to me that the younger group were able to do this more easily than the older group, and that they also had fewer inhibitions about experimenting with the different sounds the instruments could make. I will explore the influence on their creativity due to this confidence in a following section of the workshop data analysis.

Metaphor and imagery also enabled the children to draw together different ideas about the music and see it in different ways. These are skills that are known to enhance creative thinking. Metaphorical representation of music was evident in many of the children's drawings, as described. This characteristic was observed in both the pre- and post-workshop interviews, so it seems that it was not necessarily a skill that developed as a consequence of the workshop experience. If it is a skill that exists in relation to the perception of music, then providing the opportunity for children to utilise this skill is a way for them to develop their creative thinking. Singing, with its use of lyrics, provided another way for the children be involved with story-telling. It gave them another way to engage with the music and the children enjoyed singing and hearing the different songs. Through the dancing activities, they also used metaphor to express their individual dances, which provided some insight into how they thought of them. Did this use of stories through the singing and dancing allow the children to think of the music in different ways and, hence, facilitate their creativity when expressing the music in their improvisations? Another activity to explore in the future could be drawing to world music, which would also employ the use of metaphorical thinking. There is already some research on the effect that drawing to music can have on enhanced creativity (Schellenberg, 2005, p. 318).

The method of improvisation used throughout the workshops did involve using a particular structure, as the use of the stories encouraged the children to improvise to create the sounds related only to these specific stories. Consequently, these improvisations or sound creations were not completely free. Whether this approach limited the children's imaginations or not is an interesting point to consider. If they had been encouraged to just improvise in their own individual ways without the use of any structure, would this have facilitated a greater level of fluency, flexibility, and
originality? If they had been asked to create their own sound stories, would they have found this easier? My observations on this point are that the children liked the stories and were engaged and interested in them. This was demonstrated by their attention when listening to the stories, their questions about the stories, and their memory of the details of the stories. The stories seemed to inspire them to create their sounds, so I suggest that the fluency and flexibility of their musical improvisations was most likely enhanced. To some extent they were limited by the structure of the stories. They did sometimes just enjoy experimenting with the different sounds that the instruments made. For example, in the gamelan workshops there was an activity where one child conducted the group and the others played the various instruments, improvising their own sounds, although still considering the overall group dynamics. This exercise enabled them to make up their own sounds as they wished, although they still were asked to listen to the group and try and play something that would sound good as an ensemble. The children were keen to do this activity and were able to produce a variety of sounds quite easily:

**DVD Excerpt G: Gamelan Workshop 14/9/13. Savi Conducting Improvisation**

Listening and playing in the ensemble myself, I found that each improvisation was very different and the group members were able to come up with their sounds in a fluent manner. For example, improvisations differed in balance between instruments, length of phrases, rhythmic complexity and tempi. This may support the view that while the use of stories can enhance creative thinking, drawing on your one's imagination can also provide scope for creativity to flourish in different ways.

Irrespective of the limitations that may arise from the use of storytelling, all of the children, barring one, said that they used the different stories and images as inspiration for their improvisations during the workshops. The children who engaged with a story or image and were able to use their imaginations about this story usually were able to create something innovative. This experience suggests that world music education which utilises relevant stories and images as a way of introducing children to the particular music, and then provides the opportunity for improvisations, may provide a forum for more imaginative, metaphoric and creative thinking.

### 5.2 Familiarity and Uncertainty

The tolerance of uncertainty or ambiguity is considered to be an important component of creative behaviour (Zenasni, Besancon, & Lubart, 2008), an idea that I discussed in the literature review in Section 4.4. This idea derives from the concept that “creative
behaviour is expressed more easily when a person is not aware of how to deal with a problem or an unknown situation” (Zachopoulou et al., 2009, p. 319). Uncertainty is experienced in such a situation, as is the case when learning an unknown music.

The world music workshops provided an opportunity for children to experience musics which were unfamiliar to them and, therefore, it is probable that they would feel some uncertainty and ambiguity during the course of their learning process. Furthermore, the world musics in the program were all improvisatory in style, a characteristic which can be ambiguous for students at first, but teaching this style can bring a new perspective for students, as argued by Schippers (2010, p. 162). One of the aims of the workshops was for the students to develop a level of tolerance in listening to and learning unfamiliar musics, thereby potentially increasing their level of tolerance of uncertainty and consequently contributing to their creativity.

While encouraging students to be comfortable with a certain level of uncertainty, there was also an objective for the students to gain some knowledge of each of the different musics. This objective was part of the design of the workshops, and was testing a concept discussed in the literature review. Campbell (1990) explains this concept as the importance of a degree of reliance on existing knowledge and familiarity for creativity to occur, and says that “musical creativity requires a familiarity with a style's melodic, rhythmic, and formal elements” (p. 4). She argues that spontaneous musical expression is closely linked to the acquisition of these skills.

As discussed in the literature (most notably by Barrett, 2006, p. 201; Kippen, 2000; Lerdahl, 1988; and Wade, 2004, p. 109), the act of musical improvisation and composition often involves the combining and associating of different structures and patterns (which is a characteristic of general creativity). So while something new is created in the act of improvisation and composition, it often relies on the combining and associating of known patterns, which are the “building blocks” that are fundamental to the process. In this case, the familiar or known patterns are used but there is still freedom and an element of uncertainty in how they form the whole improvisation. Nettl (1998) describes how these building blocks are used, both individually and in their interrelationships, in improvisation methods across a wide variety of different musical genres and cultures (p. 15). The workshops introduced a number of rhythmic and melodic patterns to the children. Part of the research was to explore how they used these patterns (which become familiar to them over the course of the workshops) in their improvisations.
Another aspect to consider in the balance between uncertainty and familiarity is the positive effect that familiarity with a particular music can have on enjoyment, which in turn can assist with enhanced musical creativity. As a number of researchers (Brittin, 1996; Fung, 1996; W. F. Thompson, 2009) have shown, the relationship between familiarity and musical enjoyment facilitates creativity, as discussed in Section 4.4. Questions were asked of the students about their level of enjoyment in learning the world musics and I also observed their reactions to determine how this might influence their musical creativity. In light of these influences from both uncertainty and familiarity with music, it was important to provide a balance in the workshops for the children to experience both situations. The workshops were therefore designed to create an opportunity for the children to try something that was new which required a certain tolerance for uncertainty, but for them to also gain familiarity with the musics as their learning of a new music progressed.

To understand the children's level of familiarity with the world musics prior to the workshops commencing, it was important to establish this in the pre-workshop interviews. The children and parents were asked about the kind of music that they listened to and participated in, in a variety of situations such as the home, school, and social environments and through different media. They were specifically asked if their involvement included musics from other cultures. This information was used to determine if the children had any prior experience with the selected world musics. The majority of the responses from the parents indicated that their children had no knowledge or exposure to West African djembe, Hindustani tabla or Javanese gamelan. However, two of the families had some involvement with Sri Lankan music—including traditional and more popular genres—and were aware of how the tabla sounds, as it is sometimes part of this music. One of these families, who had three siblings participating in the world music workshops, also had some exposure to the djembe. The father had learned and played the djembe and so the children had often heard the instrument and had tried playing it themselves at home with their father. The same family also described how they encouraged their children to listen to music from other cultures and would often go to concerts where a variety of different musics were performed. Another child, Nick, had grown up in Singapore and had heard a wider variety of different world musics than the other workshop participants. He had often heard gamelan music and gone to live performances and also had exposure to Malay kompang drumming, which has influences from Hindu and Islamic Indian music.
Whilst the parents of the workshop participants provided this background on their children's familiarity with the different world musics, the children were also asked some questions to determine their level of familiarity and enjoyment of the selected world musics. The children participated in some listening exercises to assess familiarity and preference for a selection of world musics and some well-known popular and classical music pieces:

**DVD Excerpt H: Musical Excerpts from Interviews**

They were asked whether they liked the sounds, what they imagined as they were listening, and whether they had heard this style of music before. Their responses indicated that they usually had a very definite opinion about whether they liked or did not like a piece of music. Their answers revealed that, in general, even if they had not heard a style of music before, they were able to give an opinion about this music and often it invoked their imaginations as they were listening to it. In fact, many of the children said that they had heard a number of the world musics before, which was surprising. I was expecting the level of familiarity to be very low, given the parents’ responses described here. For example, Tommy said he had heard the Beethoven, the Bieber, the Indian and the gamelan excerpts before. He imagined some things while listening to them. For example, he described a parade or concert that he was at for the Spanish music, and he imagined himself playing the tabla for the Indian music. He said that the reason he liked many of the musics was that he had heard them before. Naomi also said that she had heard all of the types of music before, except the gamelan. However, she particular liked the gamelan, and said it reminded her of “diamonds”. She was quite descriptive in her reasons why she liked the different musics—she imagined elephants when she heard the Indian music, and a festival in Sri Lanka when she heard the djembes. Rahul said he did not like the Beethoven, Bieber, or Spanish excerpts but liked the gamelan and djembe ones very much. He was able to describe what he imagined as he was listening to the pieces very well: dragons and forests for the gamelan, elephants for the djembe, and a cow stampede for the Beethoven. He said that he had heard everything before apart from the Spanish piece. There were a few children who said that they had not heard some of the different musics before. Isabel said that she liked the rhythm in the Spanish piece, although she had not heard it before. She also liked the djembe, as “it was loud, it was like rock ‘n’ roll but in a different language” but in this case, she had heard something like this before. Oliver said that said that he really liked the Indian piece, “because it was nice and soft”, and the djembe music, because he liked drums, but he had not heard either of these styles
of music before. Overall, the reaction from the children when listening to the musical excerpts in the pre-workshop interviews displayed an openness to experience different styles of music. The children were able to describe their "pictures" of the music they heard in an imaginative and often analogical way.

One of the integral activities in the workshops was the improvisation experience, which enabled the children to use the concept of building on the familiar to explore the new. Through experimenting with improvisation, the children had the opportunity to create new sounds, rhythms, and melodies that allowed them to build on what they already knew and also experiment with something different. Questions were asked of the children about their improvisation process in both the pre- and post-workshop interviews to determine their use of the familiar versus their ability to try something unknown. Many of the children commented on how they would begin with something they knew and then develop their improvisation or composition using this material. Some quotes from the children included:

I start with some keys that I know and then use some different keys. If I hear something I like, I use this and change it—for example a slow song I may change to be faster if it sounds better.  

Jaya, post-workshop interview

Sometimes I make up songs. When I listen to a piece of music, I try to make up other different sounds to go with that music. I also join different parts of songs together to create something new.  

Savi, post-workshop interview

Rahul described how he approached the tabla improvisations in the workshops:

The beat was the same, but I changed the rhythms that I had learned and then did different rhythms that fitted with the song. I put all the different rhythms together to do my improvisation. The improvisations were based on things that I learned in the workshops.

Rebecca described her gamelan improvisations as "I got patterns and ideas from the songs that I had heard before and used these but kind of mixed them up":

**DVD Excerpt I: Gamelan Workshop 7/9/13. Rebecca**

Paula talked about her djembe improvisations:
I just did some random things. But I did rely on things that I had learned in the class and then changed it a bit, it wasn't completely new—some were based on the patterns I had been taught.

Tristan said: "I worked out a bit of a plan for the sounds in the story, based on what I had already learned in the class." However, not all children described their improvisation process as being based on the familiar to develop the unknown. There were just a few examples where children said that they experimented with something completely new and different:

The rhythms just came to me . . . I couldn't really explain it. I enjoy making up my own stuff. I didn't rely on the rhythms that the teachers had shown me, it was completely new.

Isabel, post-workshop interview

I didn't rely on the patterns that the world music teachers had taught me—I felt it was new.

Nick, post-workshop interview

It is useful to consider how the children incorporated the use of the familiar and the unknown in their compositions during the Webster tests. There were some examples where they used excerpts from a song they knew how to play already and then elaborated on this. For example, Dana used the tune *Mary had a Little Lamb* that she was learning during lessons, and based her composition on this. Another child, Naomi, used a favourite piece of hers and improvised using this for her Space Voyage composition task:

**DVD Excerpt J: Webster Test Post. Space Voyage Composition. Naomi**

As the children were more familiar with each of the world musics after their participation in the workshops, it was interesting to gauge how their perceptions of these musics changed as a consequence of this familiarity. One of the ways to determine their different perceptions and comprehension of the musics pre- and post-workshops was to analyse their drawings. As the children knew more about the look and the sound of the world music instruments in the post-workshop interviews, their drawings tended to be more realistic and depicted the actual instruments. For example, Roshan drew a picture with an accurate layout of the gamelan room where we had the workshops and he showed all the various instruments (such as *gongs, bonangs*,...
slentem, sarons, and kenongs). He wrote that the music was sad, loud, and soft. Oliver drew a person playing the tabla, which showed the left and right hands correctly playing on the two different tabla drums. Francis drew the gongs from the gamelan and a picture of him playing them. He also wrote the numbers of the melody pattern he had learned in the Ricik Ricik gamelan music piece.

Figure 5.3
The pre-workshop drawings tended to be more abstract and metaphorical in style, as the children were using their imaginations to a greater extent. They were not aware of the detail of the instruments used in many of the world musics at this stage, so they relied on their imaginations and the feelings the music evoked in them. For example, Isabel drew a picture for the gamelan of a girl jumping on a trampoline, with sunny clouds in the sky above. She did this as she told me that the gamelan excerpt she listened to made her “feel like jumping and very relaxed and free” (Isabel):

**Figure 5.4**
Oliver chose to represent the Indian piece as it seemed to make an impression on him. He drew a picture that he said showed “it was circular and I saw different things in it”. He said that it was “the world of music, classical and low music”. The drawing was a set of interlocking shapes and lines and the outline was quite circular.

**Figure 5.5**
For the djembe music, Rebecca also drew a big, happy, person and a wavy line leading up to the top of the head, which she said was showing how the rhythm is constantly repeating and to represent the flow of the rhythm. She also drew a series of crossed lines to show the beats.

Figure 5.6
As shown from the pre-workshop data, most of the children had no knowledge of the world musics prior to their involvement in the workshops, and so their level of familiarity at the commencement was very low. Even for the few children that had played a little with the djembe and the one boy who came from Singapore, they were essentially beginners in learning these instruments. Despite their low familiarity with these musics, their descriptions in the pre-interviews showed that they had definite opinions about the musics, and that they may have been more aware of the different musics than was assumed by their parents. While they did not have the same level of knowledge as they would have after participation in the world music program, they were open to listening to the musical excerpts, to engage with them, and to voice their opinions about their reactions to them. While there were some mixed results across the group of children, many of them said that they enjoyed the world musical excerpts they listened to in the pre-interviews. Many of them indicated that this was one of the reasons that they liked the music, as they had heard it before. Although the musics could not be considered really familiar to most of the children at this stage, they were still willing to consider them and generally expressed their keenness to learn them. It appeared that they were excited to embark upon their exploration of the musics, despite their uncertainty of what the workshops would involve. They were demonstrating a certain tolerance for uncertainty in their desire to begin learning and to find out more about the musics.

The improvisation activities in the workshops did repeatedly demonstrate the children's use of the patterns that they had learned from the teachers. One of the characteristics of the tabla and the djembe workshops was the learning of a number of different patterns or sequences (called *kaida* in tabla terminology). A kaida utilises the concept of theme and variation, so once a specific pattern or theme is introduced, it can then be used as the basis for elaboration through improvisation and/or composition (Courtney, 1998). For example, in one of the workshops the kaidas *Ke Ke Te Te* and *Ke Ke Dhin Dhin* were learned. Dheeraj then asked the children to do some different combinations, such as *Dhin Dhin Dhin Dhin, Ke Ke Te Te Dhin Dhin Dhin Dhin*. As the children became familiar with the pattern, they were able to experiment and confidently make up the different combinations. As they already knew how to produce the required sounds on their tablas for the basic kaida, it was easier for the children to make up their own combination. The children did not have any hesitancy in doing their own combination, although there was
still a certain level of uncertainty involved in this activity, as the following two examples illustrate:


**DVD Excerpt L: Tabla Workshop 10/8/13. Younger Group Kaidas and Improvisation (2nd Example).**

As shown by the children's comments in the post-workshop interviews, most of them did utilise the learned patterns in some way during their improvisations. I observed that the knowledge they gained from the world music teachers, albeit only in a few lessons, assisted them in being able to fluently invent their new rhythms, melodies, and sounds. They appeared to have gained confidence in being able to produce sounds on the different instruments during the workshops, so when they were asked to create their own improvisations (either by themselves or within the group improvisation), they were able to attempt it. There were a few instances when a child initially said that they did not know what to make up to create the musical sounds for the story accompaniment. They may have been uncertain or not confident to express themselves in front of the group. However, after some suggestions from the group or teacher, they were able to participate in the improvisation. From my observations of the workshops, I saw that some of the children often wanted the guidance and encouragement from the teachers to create their improvisations. For example, when we did the piano and tabla improvisation, Dheeraj showed the class some of his ideas for improvisation and played along with the group. The few children who were stuck for ideas initially were then able to participate in the group improvisation. The teacher had encouraged them to test their tolerance of uncertainty. Conversely, I also found that some children were very keen to experiment with the different instruments and often had to be asked to stop. They were interested and unafraid to explore the new sounds and were quick to come up with suggestions for what sounds would be good for the story accompaniment. It may be significant that the children who scored highly in musical originality in the Webster tests were often the ones who were very confident and prolific in their improvisations.

The children's level of enjoyment in participating in the workshops is important to consider, given the link between familiarity and enjoyment. From my observations and questions to the children after the workshops, I found that as the children grew in confidence and knowledge of the musics, their enjoyment also appeared to increase. They knew more of what to expect in the workshop sessions and were more familiar
with the material they were practising, and I believe that this contributed to their level of enjoyment. However, the excitement and anticipation of what they hoped to learn in the first workshop of each of the world music sessions was also evident. In this case, their enjoyment was not linked to their familiarity, but to their expectations. There were also some cases of when their enjoyment began to wane towards the end of the four workshops, as they became a little bored with the repetition of the material. I noticed this happen in the tabla sessions for a few of the students, so in this instance their increased familiarity was negatively correlated with enjoyment. These associations between familiarity and enjoyment are important to understand as there are implications for creativity. This relationship between enjoyment and creativity will be discussed in the next section.

One of the questions this research has raised is about the mix of familiarity and uncertainty that is most likely to be conducive to creativity. Does less familiarity with a music encourage children to use their imaginations more and, hence, be more creative in their approach towards the music? Some examples of this were demonstrated by the comparison of the children's pre- and post-workshop drawings. They exhibited a greater level of abstract, imaginative and metaphorical thinking about the world musics when they were less familiar with them. Supporting the opposite side to this argument are some of the findings from the workshops that showed the benefits that were gained from greater familiarity with the musics. As their confidence grew with the music, the children were more able to produce a variety of fluent different musical improvisations. These observations suggest that both familiarity and uncertainty can contribute to creativity. Further research is needed to determine whether there is a predetermined balance between familiarity and uncertainty that provides optimal conditions for creativity, or if this balance varies with every specific setting.

5.3 Confidence and Motivation

As discussed in Sections 2.1 and 4.6, there is evidence from numerous research studies that motivation is an important factor to consider when understanding creativity. Runco and Chand (1995) found that motivation is important for creative thinking (p. 260) and Sternberg and Lubart (1995, 1996) identify motivation as one of six resources that contribute to creativity—the others being intellectual processes, knowledge, intellectual styles, personality, and environmental context. Amabile (1983) also found that intrinsic motivation is more likely to produce creative results than extrinsic motivation, so students who engage with an activity primarily for their own enjoyment and interest,
rather than for an external reward or recognition, are more likely to demonstrate creativity. Children enjoy creating an extra challenge for themselves and this intrinsically motivates them to experiment with their own variants of songs and invent new versions (Marsh, 1995).

There are various explanations of why motivation can enhance creativity. When an interest is stimulated, students become more highly task-orientated and more willing to work through complex challenges (Geake, 2009), which is an aspect of creative thinking. There is also a reciprocal relationship between motivation and creativity according to some eminent researchers. For example, providing the opportunity for creative performance in the classroom is thought to help students discover their interests (Gardner 1983; Sternberg & Williams, 1996) and therefore become more motivated. Similarly, Csikszentmihályi (1996) discusses how flow experiences promote further intrinsic motivation. Another reason is presented by Barbot et al. (2011), who state that “novelty-induced motivation influences the nature and strength of individuals’ engagement in creative activity” (p. 61). All these concepts were explored to some extent in the world music workshops, which provided the opportunity for students to perform music using instruments which were novel for them.

The influence of the teacher and their chosen pedagogy on motivation is another factor to consider. Amabile (1996) discusses these aspects, and argues that as teachers represent a strong influence upon children in a learning environment, it is obviously important that they motivate and encourage students to apply creative thinking. Lin (2011) also discusses how teachers influence and motivate students (p. 152). He highlights the importance of active engagement in learning by passing the decision-making and the responsibility for learning back to the child. In the design of the world music program, I was very aware of these views and approaches, and made a conscious effort to incorporate this style of teaching into the workshops. How this style of teaching affected the children’s experience of the workshops and their creativity is explored in the data following.

Another personal characteristic that is related to creativity is self-confidence. Studies conducted by researchers such as Fryer (1996) have shown that building children's confidence is crucial to the development of creativity (p. 82). Other creativity researchers have also commented on this relationship: Sternberg (1998) and Cropley (2001, p. 73) discuss the importance of a number of personal characteristics to facilitate creativity, one of which is self-confidence, and James et al. (2004, p. 8) state that
confidence is important for creativity to develop. Confidence is an important characteristic to investigate in the context of creativity, as one can argue that it requires some level of knowledge of a subject for it to exist. If children are approaching a new music with little knowledge, how can they possess the level of confidence required to facilitate creativity? However, the alternative view could be that not fully realising the complexities and amount of knowledge needed to learn this new music may assist them to have confidence in their musical explorations and improvisations. The children's confidence in their approach to the workshops was, therefore, a fascinating factor to observe and to see what the data revealed in this study.

At the pre-workshop interviews, the children were asked about their involvement with various forms of music-making and the enjoyment they found in these activities. The majority of the children who chose to participate in the world music program were already involved in music learning in some way. Most of these children were already learning piano, a few were learning either the violin, ‘cello, or guitar and some were singing in their school choirs. The parents and children’s comments from the interviews reflected their enjoyment in these music learning activities, despite the children expressing it in quite an understated way. For example, Rahul said that he likes playing piano and ‘cello and singing in his two school choirs, Rebecca said that she enjoys playing piano, guitar and dancing and “enjoys singing in her head”, while Michael said that “I like to play along with songs . . . I like to play drum kit and guitar”. The few children who were not learning music in any formal way also demonstrated that they enjoyed music-making, with Oliver saying “I like to play drums, piano, guitar, ukulele, and harmonica; I like to play lots of things”. These responses showed that all of the children already had some level of motivation to participate in music learning. Their existing experience with music learning appeared to give them some confidence in their choice to begin learning new musics and instruments. It gave them motivation to begin the world music program as they felt they would also enjoy learning these new musics, as many of the children commented to me.

Many of the children also enjoyed making up their own music prior to the commencement of the workshops. Roshan told me that “I like making up songs on drums, guitar, piano, singing”, Tommy said “I like to make my own piano pieces, when not doing normal piano practice” and Dana said that she likes to make up her own music everywhere—“in the shower, before school, out the window”. These children already had some enjoyable experiences in composing, so they had a certain level of confidence and motivation which would assist them in their improvisations during the workshops.
In the course of the workshops, there were many opportunities for the children to experiment with the sounds and rhythms of the different world musics. A number of the children commented that this part of the workshops was really enjoyable for them. For example, Rebecca said "I enjoyed doing my own stuff through the improvisation—it was fun not being told exactly what to do". I observed that many of the children appeared to enjoy this opportunity to experiment and try their own thing, without being explicitly told what to do by the teachers. Most of the children didn't need to be prompted when asked to make up their own rhythm or melody. I observed that the children liked making suggestions about what sounds were best to accompany the stories. Some of the children in particular were very fluent in coming up with ideas, while others were less confident. Children such as Roshan, Michael, and Rahul displayed very confident behaviour in the class and sometimes dominated the group with their ideas for improvisation. They were able to demonstrate many melodic and rhythmic ideas using different tempos.

I also noticed the children's level of confidence grew over the four weeks of learning a new music and, as they liked the story, this provided inspiration and motivation for them to create their sounds. During the gamelan workshops, I observed that the Kancil story accompaniment (described in Section 1.3 on methodology) was also revisited, and the children appeared more confident in their sounds and had generally remembered very well what they had created in previous sessions, so they used this in their improvisations. I found that the children particularly liked making the sounds for "striking the hive" and for the "tiger roaring as it was stung". However, I did notice one or two or the children, in particular Paula, not being able to easily come up with her own improvisations. She often said that she was not sure what to do or couldn't think of anything and was not confident to try. Supporting these observations in the post-workshop interviews were examples from many of the children: Jaya said that she was quite confident to do the improvisations, as did Rahul. However, Paula said that she felt more comfortable when the teachers were instructing her exactly what to do, as it was easier, because her confidence in doing the improvisations was not high.

The post-workshop interviews and tests revealed some significant developments in the children's approach to improvisation and composition. There was evidence of the world music influencing the way they did these activities, and I will discuss this in more detail later in this chapter. However, while there was not a noticeable change in many of the children's motivation levels to undertake new compositions, there was some evidence that their confidence in this activity was increased. Jaya mentioned that she was much
more confident in her piano lessons and “was making up her own music a lot more of
the time” and Michael said “I have made up some compositions on the piano and
recorder and I’ve found it easier to use different melodies and rhythms”.

My observations from the world music program indicate that the different personalities
of the children had some correlation with their level of confidence in improvisation and
composition. As described previously, most of the children had little knowledge of the
world musics at the beginning of the program, but some seemed still more confident
than others in their attempts to learn these new musics. I noticed that a few of the
children seemed to exhibit a level of self-confidence during the workshops—I observed
that they were eager to try new and sometimes difficult rhythms, they persevered even
when they were not able to play the rhythms immediately, they were keen to be the first
to answer questions, and actively participated in making suggestions on ways to
improvise. There were others, however, whose behaviour reflected a lower level of self-
confidence. It could be argued that the differences in the children’s creativity may have
been due to their level of self-confidence: While there were many examples of a strong
positive correlation between creative fluency, flexibility, and originality and high self-
confidence in some children, there were a few examples where an apparent lower level
of self-confidence still resulted in high fluency, flexibility, and originality in their
workshop and post-workshop tests.

The influence on the children’s creativity due to the style of teaching is also an
important aspect to consider as it concerns the children’s level of confidence and
motivation. At the beginning of the world music program, I held individual and group
discussions with all the teachers to discuss the importance of the teaching approach in
relation to supporting the children’s creativity. We discussed the importance of building
the children’s confidence during the workshops to assist them in their exploration of
these unfamiliar musics. One of the goals for the teachers was to also facilitate the
opportunity for children to learn through self-exploration and experientially, rather
than in a very didactic manner. The idea was that this approach would motivate and
engage the children more by allowing them to take more decisions in their learning. It
would require the teachers to be more flexible and reactive to the children and let the
workshops be guided by the children’s responses to some extent.

At the end of the workshops, Julia reflected on her teaching style and how it supported
the goal of enabling creative learning. She commented “I was responsive to the
children’s suggestions . . . I was flexible with activities when needed”. Dheeraj also
thought that he had taught in a manner that would facilitate the children's creative learning. He also believed that “it was important to not have to stick strictly to tradition but allow the children to be flexible and to collaborate with their existing musical background and knowledge”.

Questions were asked of the children about their reactions to the world music teachers’ style and the content of the workshops. The benefits to their confidence and motivation from encouragement, humour, and respect for their views are reflected in some of the following children's comments. Roshan said “I liked that the teachers helped everyone in the group and that they focused on everyone”. Jaya told me “I liked Nii Armah, as he was encouraging and funny”. Michael stated: “I felt Julia encouraged me, so I felt motivated to learn.” Dana disclosed “I liked that the teachers were encouraging and smiled at me, which gave me confidence”. Tommy said “I liked Nii Armah best because he did the dancing and this was fun and his style of teaching was fun”. Further comments from the children about their views on the experiential and exploratory learning approach will be discussed in the next section of this chapter.

There is evidence across the variety of the data from the world music program that the children were motivated to learn the new musics. From my observations and the children’s comments, most of them enjoyed the opportunity to try the different instruments and were keen to learn about the new musics. Their excitement in exploring these new musics could have contributed to their motivation to learn to some degree, and so it could be classified as a “novelty-induced motivation”, as Barbot et al. (2011, p. 61) describe. As we progressed through the workshops, the children would often ask which music they were going to learn next and were excited at the first session of each new music. After the program had finished, some of the students also asked about the new musics they might be able to learn the following year—they were motivated to learn more new things. This desire in itself can manifest creative behaviour, and demonstrates a reciprocal relationship between motivation and creativity.

The opportunity existed for the students to explore the new musics using improvisations and then perform these story accompaniments together as a group. The data from the workshops and interviews showed that this component of the workshops was enjoyable for most of the children and not something that they were used to usually doing in their school music lessons. They had the opportunity to participate in this creative activity and, as Gardner (1983) and Sternberg and Williams (1996) describe,
being part of such a creative performance may have helped the children discover their own interests, which in turn is a motivating factor.

The increase in the children's creative abilities was demonstrated markedly in their musical extensiveness, or fluency, in their compositions post-workshops (see Chapter 6). It can be argued that this increase is due to their increased confidence in their own abilities in this area. Although they were creating their compositions on a piano, woodblocks, and voice in these tests and not on the world music instruments they had recently learned, they had developed a confidence to be able to make up their own music. They now also had some more experience in improvising and experimenting with different sounds, melodies, rhythms, and musical forms, and they were able to draw on this when asked to do another composition. During the workshops, I noticed that the children did not seem to be deterred by their unfamiliarity with the new musics. While they were novices in acquiring the skills required for masterful improvisation in the various world musics, they were quite unaware how much they yet had to learn, and were, therefore, able to maintain a level of confidence in their experimentation. The confidence they gained in improvising and composing during this process had helped them in building their musical fluency.

The teachers, myself included, were conscious of the importance of our teaching style in enabling the children's confidence and motivation during the workshops. Our reflections on the program showed that it was necessary to be flexible in our approach and sometimes change the workshop plan for this to occur. One example of this was demonstrated by Nii Armah during one djembe workshop when the children asked him to tell them some more stories about his childhood in Ghana. He had planned to continue with revising a rhythm pattern, but instead saw that the class wanted to use their imaginations and listen to something new. He told a story which included a song that engaged the children and they listened attentively. When they returned to doing the rhythm pattern and subsequent improvisations, I observed that they were more motivated to do so and able to focus more. The improvisation activities gave the children the opportunity to learn through self-exploration and experientially, as they explored the different sounds, melodies, rhythms, timbres, and ways of playing the instruments. As teachers it was obvious to us during the workshops that allowing this approach helped the children's motivation levels. This was particularly evident in the gamelan workshops, where a large part of the time was spent on the improvisations, and the children were very eager to offer suggestions and to conduct the group
Improvisations—they were effectively directing the process and they took enjoyment in this fact.

### 5.4 Improvisation: Elaboration, Use of Patterns, and Experimentation

Improvising was a fundamental component of the various world musics that the children learned, as described in Section 3.4. As improvisational activities allow for new musical material to be developed, it is a process that allows for the demonstration of musical creativity in many different musics, regardless of their specific traditions and characteristics.

Improvisation exists in myriad forms and styles across the spectrum of different musics of the world, and therefore its processes and the essential elements that comprise this artform can be viewed from a variety of perspectives. Leading jazz scholar Berliner (2010) presents his view that the process of improvisation is a continual cycle of "generation, application and renewal" (p. 242), where new ideas are brought into and mixed with an artist's existing repertory and through this process, further new ideas are generated. Bailey (1992) asserts "all improvisation takes place in relation to the known whether the known is traditional or newly acquired" (p. 142). Berkowitz (2010) states that "improvisation requires spontaneous creativity" (p. 2) within a set of musical and performance/performer constraints. He refines ideas of Nettl (1974, p. 13) that describe how improvisers rely on a set of fundamental "building blocks" that are selected, combined, recombined, and rearranged. These ideas are similar to Pressing’s (1984, p. 356) referent knowledge base that he insists is required in the process of improvisation. However, Pressing (1987) also describes the process of "free improvisation", which is less constrained and requires an approach of "imitative self-discovery" (p. 143). Hickey (2009) is an advocate of this approach in education, which supports the encouragement and nurturing of children's natural creative dispositions or personalities (p. 298) and focuses on recognising the spontaneity and freedom that is a necessary part of the improvisatory process. Other authors have focused on the importance of environmental influences on the improvisatory process (Barrett, 2005; Hargreaves et al., 2012; Sawyer, 2000). It is also worthwhile to consider Sarath's (2013) approach, who believes that improvisation takes place within a "system" which involves an interaction between the individual musician within an improvising ensemble, the ensemble as a whole, the audience, and the environment (p. 213).
The use of improvisation in the world music program was part of the approach to incorporate activities that would help the children to develop their creativity. The idea was also that the opportunity for the children to experience improvisation in the workshops would be beneficial to their creative learning of the musics.

In the literature review and the subsequent case studies, I have chosen to focus on a few key elements that contribute to the ability to improvise. These elements fit within the paradigm of Nettl’s “building blocks”, and also require some component of spontaneity. Firstly, there is the concept of elaboration, which as Barrett (2006) suggests, is a focus for children in their invented song-making and they use it to explore ideas and possibilities (p. 216). She describes the key characteristics of elaboration as those of repetition, accentuation, theme and variation, anticipation, surprise, building to a climax, and resolution, and that these may be developed through invented song-making (p. 218).

Improvisation also draws on the use of identifying, learning, memorising, employing, and modifying different patterns within music. Use of patterns could, in fact, be considered as another basis of elaboration. Various researchers have discussed how the creative process employed in improvisation involves a reliance on existing knowledge and familiarity with the domain (such as knowing a number of commonly-used patterns), as well as the exploration or experimentation with new ideas. Clayton (2011) highlights the use of patterns when he discusses how the Indian tala system is designed to facilitate improvisation over a repeated rhythmic cycle (p. 17). Campbell and Teicher (1997) talk about the ability to improvise in Hindustani musical culture as “undoubtedly including aural and kinaesthetic abilities to hear and then play (or sing) standard patterns within the musical style, and a capacity for creativity in knowing which patterns to insert (or invert, fragment, or otherwise vary) at what musical moments” (p. 38), as previously discussed in Section 3.4. Similarly, Wade (2004) points out that in most of the world music traditions, musicians use an existing basis, such as a rhythmic or melodic pattern, from which to improvise. The improvising musician “exercises relatively great flexibility with given material during a performance” (Wade, 2004, p. 109). In all the world music workshops, the children learned different patterns and their use of these patterns in their improvisations will be evaluated in this section.

Another ability that is relevant for improvisation is experimentation. Campbell’s (1991a) description highlights this fact when she says that improvisation requires “an independence of spirit that will allow the individual to experiment with new
arrangements of representative melodies, rhythms, and textural elements within the style” (p. 23). Improvisation could also be classified as a form of discovery learning, a concept promoted by Bruner (1977). Bruner’s theories of education promote students’ learning through discovery, however, they also require teachers to work in a co-operative mode with students (Siddiqui, 2008, p. 96). The teachers’ influence is still important for children to explore different creative alternatives for a specific task, and Swanwick (1988) also advocates this balance. He promotes the idea that music education should be “a dynamic relationship between encounter and instruction” (p. 135). This idea of balance was shown to be very relevant in some recent studies involving children's musical improvisations: Beegle (2010) found that a balance between structure and freedom provided inspiration and a foundation for maintaining “creative musical growth” (p. 235), as did Gruenhagen and Whitcomb (2014, p. 391).

Providing the opportunity for children to musically improvise with guidance from their teachers can allow for experimentation to occur. How confidently and freely the children experimented during their improvisations, and whether there was a dependency on the knowledge learned from the teachers, is considered in the workshop data analysis following.

In assessing improvisational activities, it is important to consider the views of Kratus (1995). He concluded from his studies that “children consider improvisation to be a doing rather than a making” (p. 28). This implies that their focus is on the process, rather than the end result. The way the data from the world music pilot were collected aligned with the aim of the research to investigate more the children’s improvisatory processes than the end product. The analysis of the data is therefore approached in a similar manner, with a focus on process rather than product.

During the workshops, the world music teachers of Hindustani tabla, West African djembe, and Javanese gamelan all introduced the children to the improvisation process, and allowed time for them to experience this activity. It is useful to highlight how each of the world music teachers approached the improvisation activities and consider the similarities and differences across the three world musics, in order to reflect on the use of elaboration, familiar patterns, and experimentation. During the tabla workshops, a few different kaidas were taught and used by the children. As described in the tabla workshop lesson outlines, a kaida is a form based on theme and variation. A rhythmic seed or theme is introduced, which is then used as a basis for elaboration through improvisation. For example, the initial theme may be Dha Dha Te Te, which can then be changed and elaborated upon in different sections within the music to highlight a
different mood or expression. The use of kaida is part of a set of skills required in Hindustani classical music where "students base their musical expression on the recreation of small units of pitches and rhythms, memorized and developed through earlier exercises" (Campbell, 1990, p. 45). One example of a kaida pattern that Dheeraj taught the children, first using vocalisations and then on tabla was

A) Dha  Dha  Te  Te/  
B) Dha  Dha  Tun  Na/  
C) Ta  Ta  Te  Te/  
D) Dha  Dha  Dhin  Na/

Dheeraj then asked the class to try a different combination of these four patterns, which he said comprised an improvisation. In this case, Dheeraj told the children how to re-order the patterns as

A)x3,  B)x1,  C)x2 + A),  D)x1.

Another time, the class first copied Dheeraj in a set of different vocalisations:

Da Da Te Te /  
Na Na Na Na/  
Da Da Tun Na/  
Te Te Te Te/  
Ghe Ghe Ghe Ghe/  
Da Da Dhin Na/

After the vocalisations were performed in the initial way, Dheeraj asked the students to modify the patterns, using a different order of the sounds and different rhythms:


When Dheeraj reflected on the improvisation exercises, he remarked that he felt the children focused and learnt the tabla patterns very well, which they were also able to memorise. But he also referred to their ability to experiment, commenting:

I saw that they came up with their own ideas too—it gave me an insight that the possibilities are endless with this music and instrument . . . the children came up with some sounds on tabla to accompany the story that I was not expecting, right from the beginning of the workshops

(Interview with Dheeraj Shrestha 25/09/13).
As described by Brinner (2008), a number of instruments in the gamelan are used specifically for elaboration, while others are used to play the balungan part or the drumming part. The elaborating parts in the gamelan, which are played on instruments such as the bonangs, gambang, gender panerus, or rebab, utilise a number of known patterns, which musicians can then employ in other pieces. These patterns are transformed and used in different contexts, according to the situation and musician’s sense of what is appropriate to the new piece (Brinner, 2008, p. 93). During the workshops the gamelan teacher, Julia, introduced the idea of patterns played on the bonangs. She taught each child in turn to play a particular pattern on the bonang. This pattern was $6 \ 3 \ 6 \ 1 \ 2 \ 61612$, in gamelan notation. In keeping with the gamelan concept of embellishing on patterns as described by Brinner (2008) and also Supanggah (2011), the group then used this as the basis for the improvisations. Each child had a turn at playing the pattern on the bonangs, while the others tried to listen and create complementary sounds on their different instruments. In this case, the pattern was being used in the same piece while the other students were making up melodies that they felt related to this pattern on the other instruments. However, once the children had learned this pattern, they could use it when they did the improvisation for the Kancil story, or in the other group improvisations. Another activity that was done in the gamelan workshops was a group improvisation, which involved one child conducting and directing while the others played the instruments. The conductor indicated to each child where he or she wanted them to begin and stop playing during the improvisation, and also to elicit different dynamic levels from the group. Julia encouraged the children to listen to each other as they were playing. The children chose to play different instruments in each version. From my observations, it was noticeable that the children did experiment with different tempos and getting different timbres out of their instruments. Each improvisation was quite different. Francis and Rebecca conducted group improvisations that were quite structured and I found to be more cohesive. It was interesting to note that when improvising without a drum instrument, it was difficult to keep the group together and the improvisation did not work as well:

**DVD Excerpt N: Gamelan Workshop 14/9/13. Francis Conducting Improvisation**

In the following DVD example from the gamelan workshops, a pattern of $6 \ 3 \ 6 \ 1 \ 2 \ 61612$ was played on the bonangs. The rest of the group tried to co-ordinate their improvisation around this pattern, with some children playing the balungan instruments and others playing the gongs and drums:
DVD Excerpt O: Gamelan Workshop 14/9/13. Rebecca Conducting

Improvisation

The djembe workshops also included some elements of improvisation. At first, Nii Armah showed a few different basic rhythms to the class. The children learned the rhythms by imitation. In the first djembe workshop the children learned to play a rhythm that used five strokes—*pa-te-pa-te-boom*—with the first four strokes tone and the last bass. In a later class, they learned the Bashiba rhythm—*pa-te-pa-te-pa, boom, boom* followed by *boom, boom, pa-te-pa-te-pa*. In another class they learned to play a rhythm which instead comprised a bass, tone, tone, or *boom, pa-te* (I wrote the timing of this rhythm as being equivalent to a dotted crotchet, quaver, crotchet in my workshop notes). Using this rhythm, the class played the djembes for a song that Nii Armah had previously taught them to sing called *Zongeele*. The song began with a few call and response rhythms, using a variety of the rhythms that had already been learned. This was followed by the class singing the song and playing a simple *boom, boom* rhythm on the drums. Then the new *boom, pa-te* rhythm then was played to follow the song. These examples show the use of different rhythms and how these different rhythms can be formed from other rhythms, through modification and combination. While the teacher led the rhythms in this example of call and response, there was a demonstration of elaboration and pattern usage in this case. The children later demonstrated use of these rhythms in their improvisations, but with different combinations and modifications. For example, the *boom, pa-te* rhythm was used as the basis of an improvisation but it was modified by Tommy to form a slightly different rhythm *pa-te pa-te pa-te boom*, and also *pa-te rest boom*, during his accompaniment of *The Clever Jackal* story:


There was another occasion when the class participated in a call and response activity. This time, each child had the opportunity to lead the call with their djembe rhythm. Tommy and Nick came up with quite a number of different and quite complex rhythms, using both tone and bass combinations, and Savi also demonstrated a multitude of rhythms when he did his improvisation leading the call. For example, Tommy played *boom, pa-te boom, boom, pa-te, pa-te, boom, boom*:

During the djembe workshops, the children enjoyed doing some dancing improvisations. While the rest of the group played their djembes, with a rhythm led by Nii Armah, each child in turn came to the front of the group and made up a dance to go with the music. A few of the children engaged enthusiastically in this activity, in particular Roshan and Savi, who were able to create steps that emulated the rhythm of the music. I was reminded of M. E. Nzewi’s (2007) description of how an improvisation in Africa can be a combination of music and dance. His comments portrayed the dancers themselves as part of a creative process, their dance steps and body movements conveying the rhythms of dance patterns as visual music (M. E. Nzewi, 2007, p. 51):


Questions were asked of the children both pre- and post-workshops in order to understand their improvisation processes. Their responses indicated that there were many examples of elaboration, use of patterns, and experimentation in their improvisations. This was a difficult question to answer for the children. While many of their responses were quite simplistic, I have tried to interpret them in order to relate their improvisatory processes to the improvisation theories already discussed.

Roshan discussed how he used some of the rhythms that he had learned from the teachers to create his improvisations, as did Rahul, Jaya, Rebecca, and Dana. Other children specifically mentioned using patterns learned in workshops to develop their music. For example, Paula said “I did rely on things that I’d learned in the class and then changed it a bit, it wasn’t completely new—some things were based on the patterns I had been taught”. Naomi also mentioned relying on patterns but not those specifically that she had learned in the workshop. Her description was “I used some different patterns that were in my head”.

The use of elaboration and patterns was not limited to the workshop improvisations. Rahul gave a detailed explanation of how the workshop experience had influenced his compositions:

> When I do my compositions, I usually start with a known song and then make variations for it. The repetition that I saw in the gamelan music has influenced me to use this sort of repetition in his compositions.

> I’ve been listening to and I like the Piano Guys, who have some different arrangements with various instruments such as piano and djembe—for
example, an arrangement of Star Wars [theme] called *Cello Wars*, which uses different variations.

Tommy also described how he makes up a lot of songs at home and his process highlights the use of elaboration. He commented that “the songs just pop into my brain. I may remember something that I’ve heard before on YouTube and I try to make up something similar, but it doesn’t turn out the same”.

Elaboration and pattern usage was also a feature of many of the children’s composition processes prior to the workshops. In the pre-workshop interviews, Rahul spoke about his use of elaboration: “If I hear something I like—I use this and I change it, e.g. a slow song, I may change to be faster if it sounds better.” Jaya gave an example of elaborating to create her music. She stated that “I get a tune in my head and I play it, which then turns into a whole song”. Isabel told me that sometimes when she makes up songs, she “joins different parts of songs together to create something new”.

However, there were a few children who felt that they had created something entirely themselves during the workshop improvisations. Nick revealed that “the rhythms just came to me; I can’t really explain it . . . I didn’t rely on the rhythms that the teachers had shown me, it was completely new”. Francis said that he “just liked the tune and this helped me in making up my improvisations”, and Isabel responded that “I didn’t rely on the patterns that the world music teachers had taught me—it was new”.

On all of the occasions during the workshops when the children had the opportunity to improvise there was evidence of their desire to experiment. I argue that Bruner’s concept of discovery learning is implicit in the activity of improvisation, and I noticed that the children enjoyed having the time to play and experiment with their new instruments, rather than having to always follow what the teacher was doing. From my case notes, I observed that the children were particularly interested in experimenting with all the different sounds of the gamelan and they wanted to try and play all the different instruments—especially the gongs, which seemed to fascinate them. This was the first instrument they gravitated to when they had a choice in the gamelan workshop. I observed that they liked the loud vibrations that it makes and, consequently, they would keep playing all the gongs in different orders and combinations to keep up a continuous sound. They would do this without any prompting from the teachers.

Supporting my observations were comments from the children, in particular Francis. He remarked about his time spent improvising in the gamelan workshops that “I liked being
able to experiment with many different instruments”. From the children’s interview responses, there was also evidence of experimentation. Rebecca demonstrated this aspect very well when she described her process: “I sometimes just let my hands wander on the piano and experiment with stuff. When I practise I may use a piece that I know and experiment with this—sometimes it is completely new.”

There are examples of elaborating techniques such as repetition, accentuation, and theme and variation in all the three world music workshops and also in the children’s improvisations/compositions done outside this environment. The responses from the interviews revealed that pattern use happens in the children’s compositions naturally and, therefore, its use does not only occur when the children rely on patterns that they had been taught in the workshops. Similarly, the children demonstrated some use of experimentation during the improvisation activities in the workshops and also in their own compositions at home. Some questions that this information poses are about the influence of improvisation/composition in a world music environment compared to other musical styles. While it is evident that playing these world musics encourages a level of improvisational activity, is this greater than in other styles of music? Do these world musics involve a greater amount of elaboration, pattern use, and experimentation? How much of the ability to use these techniques is due to learned behaviour or to inherent, naturally creative behaviour?

It is difficult to draw definite conclusions to these questions from the case studies data, but there are some indications that were displayed which may provide some insight. From the case studies, and also supported by the literature, it was clear that the particular use of patterns in these three world musics was conducive to inviting improvisation at a basic level. The djembe rhythms that Nii Armah taught to the class showed a few different ways that a rhythm can be changed, which could possibly be done in an improvisation. Campbell and Teicher (1997) describe some of the ways that improvisation of rhythms occurs in West African music. They say that “improvisations may include adding a suffix, extending the pattern, changing accents, introducing new and more intricate patterns, shifting the alignment of a pattern with the referent time line, or increasing rhythmic density” (p. 34). The rhythm examples that the class learned in the workshops included some of these techniques, such as extending a pattern and changing accents, as shown in the boom, pa-te rhythm. These are also examples of elaboration, as defined by Barrett (2006).
Likewise, the extensive use of repetition, changing rhythmic density, and using patterns in different contexts in gamelan music was evident. The importance of kaidas in tabla playing was also demonstrated, which involves elaboration and pattern use. So in all of the three world musics, the teachers relied heavily on teaching the children a set of patterns. The importance of repetition of these patterns highlights the circular form of these three world musics and how it is necessary to learn patterns which can then be extended and modified in different cycles of the music. It was essential that the children learn these patterns for them to be able to improvise using them. This is one of the reasons the world music teachers spent a large amount of the workshops on assisting the children to gain this knowledge and skills. Would this have been different if the children were learning Western classical music? As there is less dependency on using patterns which can then be extended and modified in different cycles of a piece, and there is less emphasis on improvisation in this music in the 21st century (as opposed to practices of composers in the 18th century), then it reasonable to assume that it would be different. The traditional way Western classical music is taught in schools does not include improvisation as a fundamental component of its pedagogy (Moore, 1992). However, if the children had been participating in a jazz music class, they might have learned to memorise and utilise patterns in their improvisations, as this is part of that tradition (Berliner, 2010). Intriguingly, when asked about their use of elaboration and patterns in their improvisations/compositions outside of the workshops, many of the children gave examples of their use of these techniques. This is the case for improvisations/compositions that would not be considered world music specific, showing that these techniques are important to this activity, regardless of the style of music.

How much and how freely the children experimented during their improvisations is an important point to consider. From the children's responses and my observations, it appeared that there was usually a dependency on the knowledge acquired from the teachers. However, there were some examples where the children felt that their experimentations were largely self-directed. Dheeraj even commented that he observed that the children came up with some sounds that he was not expecting to accompany the story on tabla. Some of the children may have been able to more easily and confidently try new things, which could be dependent on their type of creative personalities. The time spent in the workshops and the encouragement to try and improvise may have assisted some children with their abilities in this area. There were a few examples of children trying to experiment with new material in their compositions after the
workshops, and their comments reflected their belief that the workshop experience had assisted them.

In summary, in this section I have discussed the importance of improvisation in world music and how the qualitative data from the case studies illustrates that elaboration, use of patterns, and experimentation all exist in these improvisation/composition activities. This is important for its relevance to creative behaviour. The fact that elaboration, combination, differentiation, and transformation of patterns are part of the creative process was an idea suggested 50 years ago by Guilford (1967). His view was that an improvement in transformational abilities leads to the production of more novel and creative ideas. Furthermore, Treffinger (1980) suggested that creativity is related to the discovery process, and he stated that “experience with discovery learning enhances creative performance by forcing the learner to manipulate the environment and produce new ideas” (p. 34). This discovery learning is an aspect of experimenting during improvisation, which the children experienced during the workshops.

Improvisation/composition involves both the use of known material such as patterns and the ability to experiment to try new things. Both these abilities were demonstrated by the children in their improvisations/compositions. Using both of these abilities in improvisation/composition involves a combination of convergent and divergent thinking, as it requires experimenting, generating and evaluating new musical material, and then deciding on what musical material to finally use. The children described examples of how they applied this process in their interview discussions and it is also evidenced by the decisions that they made for their improvisations to accompany the stories in the workshops. Other authors, such as Burnard and Younker (2004) and Webster (1987), have described this process in the musical domain, and it is analogous to the combined use of divergent and convergent thinking required in creative activity as discussed by Guilford (1967) and Sternberg (1999).

These relationships between improvisation and the creative process mean that the learning of specific world music instruments and genres, with its focus on improvisatory activities, provides an opportunity for students to be involved in the creative process. Through the support provided by the teachers’ pedagogy, and with the opportunity to practice improvisation, it can be argued that this experience may well contribute to children's increased creative abilities through a combination of learned and spontaneous behaviours. The results from the pilot have shown that there were
examples exhibited by the children of both learned techniques such as the use of patterns and elaboration, and more experimental and freer improvisatory behaviours.

5.5 Group Dynamics, Leadership, and Individualism

Csikszentmihályi (1999), who asserts that the individual, the domain, and the field all have some impact on creativity (along with many others who have followed his approach, including Amabile, 1996; Barrett, 2005; Cropley, 2006; Runco, 2007), promotes the systems-oriented view of creativity. Elliott (1995) also subscribes to this systems view, and considers musical creativity to be due to the contextual as much as to the individual. However, as described in Section 2.5 of the literature review, creativity may be viewed from a multi-perspective approach, considering the influence of product, process, person, and environment, which is the basis of Sternberg and Lubart's (1996) confluence theories of creativity. Thus, in accordance with these systems-oriented approaches to creativity, it is important to understand the effect on children's creativity from learning in a group and the collaborations that this involves, in addition to the individual's contribution to creativity. The assumption that the environment in which the creating occurs has a significant effect on creativity is a factor worthy of exploration.

There is a strong emphasis on group learning for both Javanese gamelan and West African djembe, and so these world music traditions provide a useful environment in which to consider group creativity influences. This is not the case for the tabla, which is often learned one-to-one in the guru-shishya relationship (Neuman, 1980), although in many situations it is in fact learned in a group environment, as was the case for the world music workshops. West African and Javanese music promote group creativity over the individual. For example, there is not a lead instrument in gamelan, although the drum player does take a leadership role and there are interactions between the elaborating instruments and the instruments playing the balungan. Brinner (1995) states that leadership is rarely overt in a gamelan (p. 296). West African djembe music highlights the interaction between the master drummer and the group. As discussed in Section 3.4, transmission of African percussion music takes place through immersion, where the individual musical characteristics are not necessarily explained to children, but learned by listening and playing along as part of a group performance as described by Agawu (2003) and O. S. Nzewi (2010). As raised in Section 3.4 of this thesis, Agawu (2003), in speaking about African musical practices, poses a question that is worthy of consideration in this context: "Does the communal approach to composition inhibit creativity?" (p. 5). This question can be explored through the world music workshops, as
these world musics provide a favourable environment in which to consider the effect of the group versus the individual on the children’s creativity.

Sawyer’s (2006) theory of group creativity identifies improvisation, collaboration (the contribution that results from interactions between members in the group), and emergence (where the group effect surpasses the sum of all the individual contributions) as three characteristics of group creativity (p. 148). Sawyer (2006) also discusses the concept of group flow, which is an extension of Csikszentmihályi’s flow theory. J. Wiggins (1994) also found that working in groups facilitates musical thinking as children challenge each other’s ideas (p. 257). The variety of ideas that come from different children within a group then contribute to greater fluency and originality in their outputs.

The balance of the individual effect to the group effect on creativity was also considered in the world music workshops data. Auh (1995) and Kratus (1994) both found in their studies a variety of contributing personal characteristics that assist musical creativity, including musical achievement, musical aptitude, informal musical experiences, formal musical experiences, music self-esteem, academic grades, IQ, gender, and age. Many of the children in the world music program displayed these personal characteristics, so it was useful to assess whether it was these characteristics or the group influence that spurred their improvisations.

In analysing the children’s creativity, the influence of the teacher on group dynamics and individual learning also needs to be taken into account. The degree of guidance and structure in the relationship between teacher and student may have an influence on group and individual creativity. Within this relationship, the amount of flexibility in the teacher’s approach and the opportunity for self-discovery from both the teacher’s and student’s perspective can direct the groups’ musical creativity development.

There were a number of opportunities during the workshops to observe the group dynamics and to reflect on some of the possible factors of group creativity discussed in the previous paragraphs. In the gamelan workshops, there was a group improvisation activity that was deliberately planned by Julia and I in the lesson design. Each child in turn had the opportunity to conduct the group in an improvisation. Standing up at the front of the group, one child conducted and directed the other children on when he/she wanted each of them to start and stop playing their particular instrument, and to also indicate the different dynamic levels for the group. Julia encouraged the children to listen to each other as they were playing.
Each child’s improvisation was quite different from the others. As can be seen from the video, there were some examples of a cohesive and balanced group ensemble: from Rebecca and Michael’s improvisation in particular. Interestingly, even though each child was still individually improvising on their particular instrument, there was evidence of a group collaboration as the children responded to the drum beat and adjusted their melodies on the balangan instruments to fit well together. This activity enabled one child to take more of a leadership role but the result was often a well co-ordinated group improvisation:

**DVD Excerpt S: (Identical to Excerpt 0)**

In another example of group collaboration, the children discussed their ideas within the group for the various sounds to accompany the Kancil story; for instance, the way to create the humming of the bee hive sound was to play the big gong, the kenongs and sarons together. There were many suggestions and discussion amongst the children about what would sound best. In another workshop, each child had a turn at playing a pattern on the bonangs, while the others tried to listen and create complementary sounds on their different instruments. One child was still the conductor of the group during this activity:

**DVD Excerpt T: Gamelan Workshop 14/9/13. Rahul Conducting Improvisation.**

While the child playing the bonangs did not alter his/her pattern, the other children were able to improvise on their instruments around this pattern. This again gave some focus to the group but enabled individual displays of creativity, while the children were still able to consider the overall group dynamic. For example, Paula, who was playing the saron, played a melody that complemented the pattern on the bonangs and Rebecca who was playing the peking, altered her melody as the drum beat intensified and the whole group increased their tempo.

There were opportunities for the display of group creativity also in the djembe workshops. When the class was asked to devise sounds to accompany The Clever Jackal story, often many of the sounds that the children came up with were influenced by the others. In fact, one child actually pointed out that the class seemed to create the same sounds together. For example, the class did co-ordinated sounds for a “howl”, a “jackal trotting”, call for “help”, a “jackal bounding”, and “lion roaring”, which were cohesive as a group. I observed that a few of the children took more of a lead role in coming up with
the ideas. Savi, Michael, and Rahul often seemed to lead the class to come up with the sounds, which prompted the others to follow. This was also evident in the younger class, where Tommy and Nick often led the group in making sounds and the others then followed their leads. As the tabla workshops also involved group improvisation activities, the children demonstrated a similar phenomenon in their musical improvisations for the *Rabbits and Elephants* story as described in the djembe workshops. Tommy and Nick were often the first to come up with ideas, which resulted in them leading the group to produce sounds on their tablas which accompanied the story:

**DVD Excerpt U: (Identical to Excerpt B)**

All these group improvisations were influenced by the world music teachers to some extent. Often the teachers would suggest a particular instrument (in the case of the gamelan) which could be part of the group to accompany the Kancil story—this happened when the child playing this instrument did not offer any suggestion, or was not actively participating in the activity. Sometimes the teacher demonstrated to the group some possible sounds which he/she thought would be appropriate for the musical accompaniment. The children did not always exactly copy the teacher when they came to do their own improvisations, nevertheless, they had been guided and had heard the teacher’s suggestions. The teachers always responded and encouraged the children when they produced their own ideas and sounds. They commented positively to the group when they produced a group improvisation that they felt worked very well as an ensemble.

Supporting the observations from the workshops around group creativity were the children’s comments from the post-workshop interview. Some of the children talked about how the group dynamics influenced their improvisations, although there was not a great amount of detail in their explanations. Roshan described how when he thought of the musical accompaniment for the story, he thought of how not only he but the others in the group could “improvise it”. He said he thought of the “whole picture” and not just of his own rhythms but all the others around it. Rebecca revealed how that in both the tabla and the djembe she “went with the group” in the improvisation, but she changed things around a little. Nevertheless, she was listening and influenced by what the group were doing. Oliver told me that he also tried to join in with the others in the group during the improvisatory activities, and Tommy said that he listened to other people and “mixed up some of the things he heard, but he also put in some of his own
things.” These comments support the idea of a systems view of improvisation, as advocated by Sarath (2013). There was an interaction between the individual, the ensemble, and the environment in which they were improvising. All of these factors appeared to have some influence on the resulting improvisations.

As discussed, from the workshops and interview responses it was evident that there were many situations when the children were influenced by the group in their improvisatory activities. It is more difficult to ascertain the contribution that can be exactly attributed to each individual child’s creativity versus the contribution from the group. However, it appears that from the data in this pilot program, there was a combination of both individual and group creativity at work. There were examples of those children who demonstrated a high level of individual creativity (using their Webster tests as the measure of creativity) taking a dominant role in the group improvisations. This was obvious from the way these children took the lead in making suggestions about sounds to use in the improvisations, from both a verbal and practical perspective. The others in the group would often follow their lead, and so the individual creativity of these children influenced the group creativity. This meant there were some children who displayed a higher level of creativity than others in the group improvisation activities. The input from the more highly creative children was important to the success of the group improvisation. The experience of these group improvisation activities may have also enhanced the children’s individual musical creativity, but further research is required to determine exactly how this may contribute to their future musical creative processes and outputs.

The case studies revealed some examples of collaboration and emergence as described by Sawyer (2006). The gamelan workshops provided a fertile ground for these elements to emerge, as when people play in the gamelan it is particularly important to consider the ensemble. The children needed to listen to each other and were reminded to do so by the teachers. They needed to listen to the drum part, and the bonang parts in particular, to keep in time with the tempo and to produce sounds on the other instruments that would complement the pattern played on the bonangs. I observed a good example of collaborative behaviour when, on one occasion, the child playing the kenongs worked closely with the bonang pattern to ensure that he struck the instruments on the last number of each bonang pattern cycle, which is in keeping with emphasising the fourth beat in this music. As shown in the preceding video excerpt, a few of the conducted group improvisations produced examples of cohesive group ensemble playing. While the children were playing their instruments individually, they
were obviously listening to each other and, assisted by the conductor, the group was able to produce a sound that "emerged" from this group improvisation.

With these displays of group creativity, it is useful to come back to the question of whether learning and playing music with a group approach is beneficial to or inhibits creativity. There are arguments for both views. As demonstrated in the pilot program, with a group improvisation there is a need to play in time with the group beat and to consider how the individual instrument fits into the overall sound created by the group, from a dynamic level and from a melodic and rhythmic perspective (in the case of the world musics involved in this study). This can constrain creativity in so much as the musical choices are not completely free. There were also some examples of a few children and, indeed, the teacher, influencing the group, as their suggestions were the ones that the group followed. This may have limited the creativity of the other children. However, there are also examples of when being part of a group inspires creativity. The premise that children's creative growth occurs when engaged in collective activities via collaboration with more capable peers and through adult guidance is the central tenet of Vygotskian theory. As J. Wiggins (1994) also found, there were examples in these case studies of the children discussing and challenging each other with their different ideas for their created musical sounds. This facilitated greater fluency in the number of sounds and rhythms that resulted in the group improvisation.

5.6 Enculturation and Environmental Influences

In keeping with the confluence theories of creativity (Sternberg & Lubart, 1996) and the systems-view of creativity (Csikszentmihályi, 1999), there are many influences on creativity that arise from a person's socio-cultural background, in addition to the influences arising from their current environment. As outlined in the literature review in Section 2.1, many authors have emphasised the importance of these factors on creativity. As some adhere to genetic aptitude as the primary determinant of musical talent (Peretz, 2006; Zatorre, 2013), Gordon (1989) feels that the sociocultural is perhaps the most influential factor, stating that "the quality and extent of one's early musical environment which will affect one's overall music aptitude, is perhaps the most powerful factor in determining the extent to which one can become musically creative" (p. 79). Hennessey and Amabile (1988) also believe that social and environmental factors play a more major role in creative performance than innate biological and personality attributes. The effect of the sociocultural is also important not just for the
musical and artistic realm, with Feldman (1974) suggesting that “all creative thought springs from a base of cultural knowledge” (p. 68).

There are two key concepts that relate to the knowledge acquired from sociocultural environments that are important to consider in this research study. The first, musical enculturation, occurs when children acquire culture specific knowledge about the structure of the music they experience in their own culture (Morrison et al., 2008). The second, acculturation, is used to describe the results of contact between two or more different cultures. The world music workshops provided some opportunity to investigate both of these concepts, by assessing the influence of the children’s sociocultural background on their creativity, combined with the influence from their workshop experience. On the basis of previous research, it was reasonable to assume that both their existing enculturation due to their previous musical experiences, and their acculturation due to learning the new world musics, would impact their creativity in some way. As discussed previously, researchers such as Barrett (2006) have shown how enculturation in a school and music environment influences children (p. 202), while others such as Porter Poole (1999) have shown how children learn from their direct environment and that the way children structure and represent this learned information is culture-specific.

While it is important to investigate what acculturation occurred during the program, it is also important to recognise that the world musics were learned out of context to the social environment from which they are usually performed. This could put restrictions on how readily children became integrated into these new musical cultures. Hindustani and African musical performances, both of which demand a strong audience interaction, cannot be experienced in the same way in a classroom as they can in their performance context. Music whose primary function is social or religious loses some of its meaning when performed and taught in a different environment, as Cook (1998) suggests. As Dunbar-Hall (2006), Campbell (2004), and Schippers (2010, p. 41) mention, teaching world music in a classroom situation therefore means that the music may be transmitted in an environment that can hardly be described as "authentic". However, as the children are used to learning in a classroom situation, they may also be influenced by their enculturation to this teaching style and benefit from the re-contextualisation.

In considering the children’s acculturation, the way the world music was transmitted was therefore a factor to examine, and it could also be argued that there was a unique cultural environment established in the different workshops. As Sawyer (2006)
describes, children learn best in collaborative, creative classrooms and so if the world musics were transmitted in such an environment, then it would impact their acculturation. Rudowicz (2003, p. 281) discusses how culture can influence how creativity is channelled and, thus, depending on the cultural setting, certain individuals will receive more or less encouragement for creative expression. All these factors may influence the children's acculturation effect, which could change their creativity in some way.

The effect of the children's learning environment and the effect of their musical and cultural backgrounds on their creativity were assessed though interview questions to the parents and children, in addition to my observations from the workshops. The backgrounds of the children were useful to gauge their musical enculturation prior to the commencement of the workshops. Many of the children participating in the workshops were from cultural backgrounds other than mainstream Australian (which was defined for the purposes of this research study as being Caucasian, Anglo-Saxon background and with parents born in Australia). In particular, there were a number of children from Sri Lankan families. While these children did not have any or little exposure to the three world musics in the program, some of them did have earlier experience of Sri Lankan music. Other children also had some experience of other musics such as Colombian, Malay, and Australian Aboriginal. All of the children were from a relatively high socio-economic background and with highly educated parents.

The children's cultural and musical backgrounds were summarised in Table 1.1 earlier in this study. For this section, I provide some more detail on the cultural backgrounds of each of the participants to sketch the music environment and background they brought to the workshops.

Roshan, Savi, and Rahul all come from the same Sri Lankan family. Their parents consider themselves to be from this cultural background, but feel that they have adapted to the Australian way of life. The family listens to a wide range of music, from Sri Lankan to African. The parents encourage the children to hear music from other cultures, and often take the children to world music concerts. They also actively participate in a variety of Sri Lankan cultural concerts. At home, they often play CDs, to which the children like to dance.

Tommy and Dana are siblings and come from a family with a Hispanic cultural background. They are bilingual. Their parents listen to a variety of classical and Latin American music, including a lot of Columbian music and salsa.
Francis, Michael, and Tristan are from a family where the father is first-generation Greek, and their mother is Australian. Consequently, they feel there are a few cultures in the family. Although they have very little exposure to music from other cultures (apart from at school, where they learn some Aboriginal songs), they do enjoy actively participating in music and play a few instruments amongst the family.

Oliver and Isabel are brother and sister. While the family is mainstream Australian, they have lived abroad for extensive periods of time—the children were born in Denmark and then they lived in Japan when the children were very young. Their mother said that they are interested in other cultures. They listen to some music from other cultures, such as Spanish classical guitar, and sing Aboriginal songs at school, but they also enjoy listening to classical, jazz, and children's music quite actively through CDs and in the car.

Bivon's cultural background is Sri Lankan. The family is quite involved musically in the Sri Lankan community and often they will get together with others in the community and sing and perform (their father plays guitar). This includes modern and traditional Sri Lankan music, in particular baila music, which is from the region from which the parents come. They also listen to church music on the radio and sing traditional church hymns, but they are sung in Sinhalese.

Nick comes from a family where the father is Malay and the mother is Australian, and they consider themselves "world citizens", although they are becoming more mainstream Australian now they are back in Australia. Nick was born in Singapore and lived there until only recently. At school in Singapore he had a lot of exposure to culturally diverse music, including Malay, Chinese, and Indonesian music. This was also the case in the social environment, as the family would often go to Malay weddings, where kompang drums would be played, for example. This opportunity has diminished now they live in Australia.

Rebecca’s parents are Dutch and the family identifies strongly with European cultural values. Both parents have travelled extensively in Asia, and her father grew up in Papua New Guinea. Despite this cultural background, she has had very little exposure to music of other cultures, apart from when she recently travelled to Thailand and Nepal and heard Buddhist monks singing and playing in the temples.

Jaya is from a family that classifies themselves as “very cosmopolitan”—they have lived in Africa and Dubai, but her parents were both born in Sri Lanka. Her mother feels that
she is a mixture of Australian and these other cultures, but says that the children identify more with the Australian culture.

While the children did express some awareness and knowledge of the three world musics in the listening tests, as described in the "Familiarity and Uncertainty" section, most of the children did not mention listening to other cultures' music, in particular when asked the question in the pre-workshop interviews. Most of them commented about listening to pop music, music from video games, or film music. However, one child, Savi, talked about liking reggae music and jazz music and lots of different instruments.

As evidenced by the parents' and children's interview responses, and also from my previous knowledge of some children's musical educational backgrounds, most of the children already had some experience of learning music prior to the world music program. There were also a few children that had a level of enculturation in some other world musics. So while in general the group of children may not have had much enculturation in world music styles, for most of them, formal learning of Western classical music has been part of their lives. As most of the children have grown up in Australia, they have also had experience of listening and engaging with music in this society, through a variety of media such as digital, TV, radio, and school music. They have also experienced playing and singing music in a variety of ways as part of their own musicking (Small, 1998), when they have made up their own "music to fit their movements and their imaginations," as illuminated by Campbell (2010, p. 95). Therefore, these experiences had given the children a level of musical enculturation prior to workshops that would influence them as they began their world music education experience. It is reasonable to assume that this earlier exposure to music would assist them in their attempts at musical creativity within the world music workshops, and would have some impact on their acculturation with these musics.

The way the children experienced the world musics in the workshops was obviously different to how it would have been if they were living in that specific culture. Their experience of learning the music was in a classroom situation and not in a family or social situation. However, as they were more enculturated into institutional learning of music from their experiences in school music, this transmission method may have provided a level of familiarity and comfort for the children and possibly enhanced their learning. Furthermore, given the emphasis on developing creativity, there were many examples of the children experimenting with the instruments in a way that was not considered "traditional". For example, the children were learning the musics only from
one teacher, and had no experience of seeing their family or other people in their community participating with this music. The exception to this was the three Sri Lankan brothers, whose father plays djembe and who joined in the group at one of these workshops. This family also attended a gamelan concert together during the course of the workshops. However, the other children did not have the opportunity to attend performances of any of the musics in a family or social situation and, therefore, were not able to benefit from the experience that this could bring. In addition, many of the workshop activities encouraged the children to improvise and play their own melodies and rhythms on the instruments, without adhering to traditional rhythm patterns. While this allowed the children to explore the instruments’ sounds in a creative manner, they did not experience learning how to play the instruments in a traditional way.

The children’s existing musical knowledge gave them both an advantage and a disadvantage when faced with learning the new world musics. There were examples of this displayed throughout the workshops. The world music teachers all commented on how the group of children were able to quickly grasp some complex musical patterns, such as the different kaidas learned in the tabla workshops, and how they were able to play the different rhythmic patterns on their different instruments in the gamelan and be rhythmically and melodically cohesive with the ensemble. These are skills that will have been enhanced by their prior musical backgrounds. There was also an example of the children relating their learning of a new rhythmic pattern to their knowledge of Western rhythms. When Dheeraj taught them the kaida te te ki ta ta ka, the children brought up an analogy to rhythms they had learned at school, expressed in Kodaly notation as ti-ti ti, ti-ti ti and also ti-ti, ti-ti, ta. Dheeraj and I discussed with them how you could do something similar using tabla. For example, the 6-beat rhythm in Western music which has a 6/8 time signature, and how this related to the 6-beat kaida they were learning. This familiarity with music may have helped the children to learn the new world musics with more confidence and skill and, therefore, enhanced their forays into the world musics improvisations.

There could also be an argument for some of their musical knowledge creating a disadvantage for the children in their acculturation with the new world musics. This may be particularly true for the older children, who had already undertaken a number of years of Western classical music study. They already had the influence from their enculturation into the pedagogy of Western classical music. I observed an example of this in the workshops where it related to the children’s ability to memorise the world music being taught. The world musics were all transmitted aurally, without the aid of
musical notation, as is their tradition. A few of the older children initially struggled with this method and commented to me that they were more used to learning by reading the musical notes. Jaya related to me how she found this difficult at first. However, after a few workshops, she found her ability to aurally and kinaesthetically memorise the world music phrases improved, and then began to enjoy learning in this manner. I noticed that the younger group of children found the memorisation aspect quite easy and were able to remember the different world music patterns without difficulty. As they are more used to relying on aural learning at this age, this may have assisted them to accept the world music transmission methods and acculturate more easily.

Another question is whether the children with some background in world music (however minimal) engaged with the world music workshops more fully and found it easier to acculturate. More importantly for this research study is whether this helped them to expand their creativity. As mentioned, there were a few children such as Tommy who had some experience of listening to gamelan, and Roshan, Savi, and Rahul had some exposure to djembe. It is interesting to note Julia's comments about Tommy's involvement with the gamelan music. She articulated this to me in a post-workshop discussion:

I realised how hard it is for these age groups of children to experience/express authentic Javanese gamelan creativity. The music is too complex for them to get much of a grasp of in such a short time. Children that grow up in Java and hear gamelan regularly would be starting to understand (at least subconsciously) how gamelan works at this age. I think Tommy probably had one of the deepest or most instinctive understandings of how gamelan works—possibly due to exposure to it at an early age.

In a similar way, the boys who had seen their father learn and play djembe, and had experimented with it themselves, really engaged with these workshops. I observed that they were able to quickly and easily pick up the rhythms that Nii Armah showed them, and that they were very fluent and confident in their musical improvisations and in their dancing to the rhythms. This is in line with the idea that greater familiarity or skill increases creative scope.

Some part of the creative abilities of the boys with some enculturation in these world musics may also be attributable to personal characteristics that benefit creative thinking, as discussed in Section 2.3. It is beyond the scope of this thesis to analyse these
factors, but further research to investigate how these influences combine and contribute to their creativity could be very interesting.

As the children participated in a program that incorporated three different world musics which were learned in succession, it is possible that they developed skills during the first workshops (the tabla) that then assisted them in the other workshops (gamelan and djembe). For example, if they found improvising easier in the djembe workshops after improvising in the tabla and gamelan, then this could be considered an acculturation to the improvisatory style of these world musics. It could also be considered an acculturation to the aural/oral pedagogy of the workshops. However, with the data available in this research study, it was not possible to determine whether this happened during the course of the workshops. From my observations and discussions with the children, I did not notice that this was the case. In this study however, the children only had a short exposure to each world music, so this factor could be explored in future research where there is a longer period of time spent with each music, in order to consider the impact of learning multiple new world musics.

In any discussion on enculturation and acculturation, it is useful to consider the influence of the parents on a child. In addition to the parents’ cultural backgrounds, there is an influence from the parents that derives from their attitude and support of the world music program. If the parents were supportive of their child’s participation in the program, if they demonstrated an “openness” to the experience and a belief that this was a positive learning experience, this is a factor that will influence and encourage their children. As many of the families had cultural backgrounds other than mainstream Australian, they were already aware and open to multicultural music experiences, even though these were not necessarily related to the specific three world musics learned in the workshops. As shown from their interview comments and informal discussions with me during the workshop program, this attitude and behaviour was aptly demonstrated by the parents of the participating children. This situation contributed to the acculturation in the world musics by the children, through the benefits of a supportive and encouraging family environment. The children were influenced by their parents to believe that learning the diverse musics was beneficial for them and, Consequently, they wanted to show their parents how well they had learned the new musics.

In conclusion, there are many perspectives on enculturation and acculturation that arise from learning various world musics by children from different cultural backgrounds. There are influences that stem from existing cultural and musical backgrounds, from the
world music knowledge acquired during the workshops, from the pedagogy and from the world music teachers. The children’s existing enculturation, the timeframe of the world music learning, the blend of story-telling, aural/oral learning, and improvisatory activities and teaching styles all have some impact on the way the acculturation occurs. Consequently, this mix of enculturation and acculturation that a child acquires has a connection with the way their creativity is expressed. This research study has identified some factors that impact on creativity given this mix of enculturation and acculturation. A world music program that is designed to consider the mix of factors that facilitate the blend of enculturation and acculturation to enhance children's creativity is an outcome that could be realised from further research in this area.

5.7 Influences on Musical Knowledge and Involvement

It is important to consider the various ways in which learning of the world musics may have contributed to the children’s overall musical creativity. In Section 4.6, I referred to research that has highlighted the significance and role of creativity in arts education with young children (Burnard, 2007; Gallagher, 2007; Lindström, 2007). The arts can illustrate how different phenomena relate to each other (Bamford, 2006, p. 19), which is a way of exploring the association of different ideas, and an important aspect in creative thinking. Holistic thinking and synthesis of ideas are also fundamental to arts learning, and these are also characteristics required for creativity. Arts-rich education encourages critical thinking, problem-solving, and reflection (Bamford, 2006, p. 20). The world music workshops aimed to provide opportunities for the children to learn these skills, with the view that their musical and general creativity skills would likely be enhanced.

Anderson and Campbell (2011) refer to students developing “greater musical flexibility and polymusicality” (p. 3), which can contribute to a broader range of styles reflected in their musical creativity. These authors highlight the importance of early exposure to a large array of musical sounds, so this polymusicality can develop and the world music workshops provided the opportunity for this to occur. Hickey (2003) also advocates that “opportunities for sound manipulation” (p. 38) should be made available in the composition process to enable students to store different ideas. An example of how composers can be influenced by polymusicality is demonstrated well by the use of additive patterns, one of the hallmarks of African rhythmic organisation (Nketia, 1974), and also a characteristic in Hindustani music (Clayton, 2011). This distinctive characteristic cannot be translated to other musics so easily. However, Western
composers such as Glass and Messiaen have been influenced by it, and incorporated the concept in their compositions.

Musical sharing across cultures can provide the environment for creative outputs as musical cultures borrow and integrate new elements from other musical cultures. Morrison et al. (2008) propose "students’ music schemata, like their preferences, can be altered with concentrated exposure to music of another culture" (p. 126). This means that the way students understand and relate concepts of rhythm, melody, harmony, and form can be changed by learning music of different cultures. In introducing new musical structures and ideas, students can benefit from relating them in an analogical way to existing musical knowledge. In this way, further new musical relationships may evolve.

Blair and Kondo (2008) discuss how in learning a new music, students build a bridge that connects this new musical knowledge with their existing musical knowledge (that which has been learned in the context of a different music). Connections between different types of musical knowledge could potentially broaden the students’ musical fluency, flexibility, and originality. In this process, the use of metaphor can be an important technique to develop creativity. Metaphorical thinking happens then when knowledge of Western music is reappraised and viewed in a different manner, as a consequence of learning world music. There was the opportunity in this research to determine if the children did reappraise their knowledge of Western music in some way.

Elliott (1995) states that "musical creativity and musicianship are mutually interdependent and interactive," (p. 227), making the point that some knowledge is required to be musically creative. This can work positively for students who already have some level of musicianship in other musics—they are able to potentially develop their creativity, explored in the workshops in the more familiar domain of Western music. World music, with its emphasis on improvisation, may assist students in their improvisation process with other musics. Koutsoupidou and Hargreaves (2009), in their study of 6-year-olds, when comparing those who had opportunities for musical improvisation with those whose music lessons were didactic, showed benefits of the improvisational process in the enhanced creativity of their students. In the three world musics experienced by the children during the workshops, there are important structures, patterns, and rules that must be adhered to, but the children were encouraged to develop something new during their performances. This experience of having to improvise could then be translated to the children’s approach to other music. In considering this translation however, we still need to remember that what is considered musically creative in Hindustani music, or in Javanese music, or in children’s
group music-making, may differ to their individual creativity expressed through other musics, and will also be dependent upon the measurement methodology, in this case, the Webster MCTM–II (2002).

As described previously, the world music workshops purposely integrated story-telling, dance, and music. Another aspect of this research study is then to understand the possible benefits this interaction between story, dance, and music can bring to the children’s creative processes. Did this experience in the world musics assist the children in their overall musical creativity? One of the other important aims of this research is the consideration if and how improvements in musical creativity translate into improvements in overall general creativity. Hallam (2010) cites a few studies such as Wolff (1979), Kalmar (1982), and Hamann et al. (1991) that investigate the effect music learning has on general creativity. While many, including Greene (1995), believe that participation in the arts involves a release of the imagination, which inherently leads us to new perspectives which manifest in other domains, as discussed in Section 4.6, there are mixed results from various studies investigating whether musical training improves other cognitive functions. The analysis of the children’s and parents’ interview responses was analysed to find indications of the effect of the world music workshops on general creativity, and further quantitative data from the Torrance TTCT (2007a, 2007b) will be considered in Chapter 6.

After the workshops, the children were asked questions in their interviews about how they were influenced by their experience. The questions asked them to consider influences on their music listening behaviour, on their approach to improvisation/composition, and their other music learning. There were many responses that demonstrated the influences from the world music program.

Rahul revealed that he now listens to songs’ rhythms more, and specifically notices this. He commented that the gamelan was “soft and calm” and that the djembe was “more excited”, and he had had exposure to both. This influenced him in his compositions, as he was now employing various rhythms and moods. In addition, the use of repetition he saw in the gamelan music has influenced him to use this sort of repetition in his own compositions.

Roshan said that the workshops had helped him to understand “lots of other instruments” but that it had helped him in learning the piano, too. He stated that he was now very enthusiastic about learning the piano, and that he also wanted to learn some other instruments. He said that learning the different instruments in the workshops had
helped to give him more ideas in his compositions. The parents of Roshan, Savi, and Rahul reiterated some of these comments. They told me that their sons now have an increased awareness of other musical instruments from around the world, they have been interested enough to do web searches about new instruments, and they have a desire to learn some of these other instruments. They have also had a renewed interest in their existing music learning, and have been increasing their music practise, composing, and listening.

A renewed interest in their existing music learning and a desire to learn new instruments was a common theme across many of the children's interview responses. Naomi has been a lot more interested in playing the piano, with both herself and her mother noticing this fact. Bivon mentioned that he was making up things in his school music lessons on drums, bell, triangle, and other percussion. His parents told me that whereas he had not wanted to play any instruments or learn music before the workshops, he has now said that he would like to play the violin. Oliver said that he has really enjoyed doing drumming in his school music lessons since the workshops. Strikingly, in this boy's post-workshop drawing of the Beethoven musical excerpt, he drew people playing many different brass instruments such as trombone, tuba, and trumpet, showing that he was aware of the variety of instruments being played in the piece. Jaya also showed a better appreciation of music and more awareness that music can be made with different sorts of instruments. The parents of Dana and Tommy said that their children have recognised other styles of music and made some connections with the instruments that they had learned in the workshops. For example, they were listening to some flamenco fusion music which had some tabla beats and they had recognised the different drumming sounds and rhythms and commented about it. Tommy has been doing a lot more drumming and experimenting with different rhythms, and Dana is keen to learn the guitar.

There were a few examples of different musical listening behaviour from the children after the workshops. Tristan said that he listens to more classical music now, and Michael said he liked listening to gamelan. Rebecca said that she was listening to music a bit more than in the past. Savi has been listening a lot to the Piano Guys—artists who use a mix of djembe and piano—and he likes this. Other children said, however, that there had been no change in what music they listened to.

Another common theme that emerged from the children's post-workshop interviews was the influence on their reported capability in learning music and to their approach
regarding composition. Michael believed that he was using his creative skills more in general. He said that he has made up some compositions on the piano and recorder and that he has found it easier; he was using different melodies and rhythms. He also has renewed his efforts in learning the piano and he is finding it fun. His mother felt that he and his other two brothers were all doing more on their piano and were more interested in their music lessons. She commented that Michael has been changing some of his pieces, including changing the ending of a piece while he is practising. Rebecca said that the experience of the workshops had helped her in learning some new pieces in her piano study. She said that the Latin rhythms in one of her current piano pieces were unusual and difficult for her but she was able to learn them more easily now as she had the experience of learning and memorising the new rhythms in djembe and tabla, so she was able to draw on this skill and knowledge. She was aware of how the hemiola rhythm in her piano piece formed the basis of the piece, and that the other parts were driven by this rhythm. Savi told me that for a recent composition, he got the idea of striking the piano keys from the way he had learned to play the gamelan—making things more percussive. Jaya said that she was much more confident in her piano lessons and was making up her own music a lot more. Her mother commented in the post-workshop interview that “there has been a definite broadening of her perspective in regards to music. She is going to the keyboard and playing random things, making up things, often spontaneously. She is creating her own music, which is great.”

A few examples that demonstrate how the children were thinking about music after the world music workshops are worth considering in this analysis. It shows that in a few examples at least, the children were conceptualising the structure of the musical excerpts differently. While there are references in the preceding paragraphs about some children being more aware of rhythm, this was also demonstrated from the drawings done in the post-workshop interviews. Dana’s drawing showed that she was thinking about the rhythm of the music a lot. She divided her drawing into four sections—rhythm, melody, beat, and what it looks like. She wrote that the rhythm was “any timing” and the beat was “quick, normal, or slow”. She demonstrated that she was aware of different rhythms, which could be played in any tempo. This drawing was in contrast to her pre-workshop drawing of the Beethoven excerpt. In this example, she demonstrated a highly developed sense of metaphorical thinking, but it included references to the more traditional components of Western classical music such as harmony and melody, rather than a focus only on the rhythmic aspect of the music.
Figure 5.7a
Naomi’s drawing demonstrated more of a focus on melody. For the Beethoven excerpt, she drew a type of graph which had a combination of long and short bars and which she described as the long and high notes of the music. She told me that she was thinking about the high and low notes in gamelan music, and this may have therefore contributed an influence on her consideration of pitch range in this Western classical music piece.
While there were many examples of influence on the children's musical involvement, a few of the children responded to the questions on musical influence by saying that not much had changed since the workshops. I felt that these children, Oliver and Isabel, had not engaged with learning the world musics as much as many of the other children, and they had also missed a number of workshops. This may be one of the reasons that they did not see any changes in their involvement with music.

There were questions in the post-workshop interviews which related to any non-musical impact on the children's creativity. While by no means statistically significant, there were some reported examples from the children and parents which showed some positive influences on general creativity after their workshop experience. Rahul mentioned how he had recently won the school competition for writing a story, and he felt that participating in the workshops had helped his creativity in this respect. The mother of Savi commented that he has been doing a lot of drawing since doing the workshops and he has “really taken these to the next level by refining his work, something he did not do previously”. With both of these children, there was a reported
increase in “keenness” to try new things. Their mother feels that from having experienced the workshops, the boys now feel that they have the ability to learn many new things, that they are open to explore new things, and they have gained the confidence to do so. Francis, Michael, and Tristan have all been more creative with their Lego and have been making up their own structures, rather than just following the instructions, their mother disclosed. Francis in particular has been creating a lot of building structures with Minecraft software. Paula said that she enjoyed doing a lot more art at school and at home, which was also discussed by her father. He commented that she has taken a “real [liking] to sewing recently” and she has enjoyed making a variety of different things. Her interest in art has also been high. Jaya’s mother was very emphatically of the opinion that her daughter is now a lot more spontaneous. In the post-workshop interview, she said that her daughter is often “bursting into dance and song. She is letting go of her herself more, being less controlled, more confident and becoming more creative”.

While participant numbers, the exposure to, and the duration of the workshops precludes any definitive statement about musical influence overall, the children’s and parents’ interview responses provide some encouraging indications that there were influences on the children’s approach to their music-making after their workshop participation. One of the factors that emerged strongly in the data was the renewed interest that most of the children had in their existing music-making. While there were a few examples of an interest to specifically learn the world musics further, the predominant influence was an increased interest to participate in different forms of music. The many examples of the children wanting to learn new instruments demonstrates the awareness that they gained about the variety of musical instruments and styles that are possible to know. It is a demonstration of a desire to explore the new, a skill which is beneficial for creative endeavours. This interest was also related to a developed sense in the children’s confidence in playing and creating music. During the course of learning the new world musics, they gained an awareness of their abilities to learn an unknown and often difficult music—they were able to use new rhythms and melodies and acquire new physical skills to play the instruments. The benefits for their creativity gained from this increased confidence and motivation were discussed previously. The point to highlight in this case is that the children gained a new confidence and motivation, which then also related to other areas of their involvement with music. This is an important transference of skills and provides an increased opportunity for the children to display musically creative behaviour in other ways. To
understand how the world music learning experience may impact the children's musical creativity in different musical ways in the long run, a further longitudinal study is needed. As they explore new musical genres and instruments, the benefits from this initial world music learning experience may be further revealed.

Another factor that emerged from this research is the influence from the world music workshops on the children's thinking and understanding of their existing musical knowledge, reflecting similar ideas from previous research (Aubert, 2007; Perlman, 2004), which was discussed in Sections 4.4 and 4.5 of the literature review. There were a few examples given by the children that powerfully demonstrated and illuminated this. Rebecca's discussion of her approach to her piano piece with the hemiola rhythm showed that she had drawn on knowledge of the rhythmic structures she had learned in the djembe and tabla workshops, and applied it in a different context. She had taken this knowledge and used it to assist her in learning and conceptualising the Latin music piece in a different way, which she said was beneficial to her. Whereas before she was more likely to think of the structure of the piece in a more traditional way, that is, comprising of a Western European harmonic basis, she now looked at the rhythmic basis as the predominant feature of the piece. She had reappraised her thinking of music that she already knew, using metaphorical thinking and an association of disparate ideas (both components of creative thinking). Increased musical flexibility also influenced and assisted Michael and Rahul in their composition processes. The use of different melodies and rhythms were incorporated more easily now for Michael, and the use of repetition in gamelan music influenced Rahul to use a similar repetitive structure in his compositions. There were also examples of an increased openness to new ideas and an exploration of the new by some children in non-musical domains. It is possible that their new perspectives were able to manifest in other domains, such as art, craft, design, and literature. The use of metaphor through the storytelling and dancing components in the workshops has already been discussed, and it is possible that this assisted the transfer to other domains. Rahul's description of his enhanced creativity in story writing was a direct example of this influence.

Many of the examples described in this section demonstrate an increased musical flexibility in the children and are in alignment with developing the capability of polymusicality, as described by Anderson and Campbell (2011). They also show the benefits for creativity when existing musical knowledge is transformed through the understanding of new concepts. While the examples of increased creativity in non-musical domains from the interviews are anecdotal, this idea will be investigated further.
by analysing the results of the Torrance TTCT–Verbal and Figural (2007a, 2007b) in the next section, which consider the changes to the children’s general creativity over the course of the world music workshops.
6. Gauging Creativity: Exploring Outcomes Using Webster’s and Torrance’s Tests of Creative Thinking

As described in Section 1.3, the children's musical creativity in this study was assessed quantitatively against a set of criteria using the well-established Webster's Measure of Creative Thinking in Music (MCTM–II) (2002). This provided a way to compare and contrast all the children's creative musical behaviours against defined standards, and to analyse whether and how their results changed over the course of the workshops. The children's creativity was also assessed quantitatively using the Torrance Tests of Creative Thinking–Verbal and Figural (TTCT) (2007a, 2007b). These measures provided another way to view and verify any changes in the children's creativity that had been observed and described in Chapter 5. Although it was well understood from the outset that the small number of participants and short duration of the pilot (due to the limitations in time and resources of this research) would preclude reaching major, statistically relevant conclusions, it was deemed worthwhile to explore whether and how these tests could be applied in the specific setting of world music workshops in a Western music education setting.

6.1. Results from Webster’s MCTM–II

Webster's MCTM–II (2002) aims to assess the musical creativity process, rather than just the musical product, as discussed in Section 3.3. For this reason, it was a useful measure for this study, where the focus was on the cognitive process of creativity (in addition to the influences from the environment and the individual), rather than a focus on the creative output alone. The following quotes provide some insight into the activities and scoring used in the MCTM–II:

There are 10 tasks asked of the children in the MCTM–II. The first tasks only explore how the children demonstrate the use of musical parameters of "high/low", "fast/slow" and "loud/soft". The way the children manipulate these parameters is used as one of the bases for scoring. Tasks in this section involve images of rain in a water bucket, magical elevators, and the sounds of trucks.
The next set of tasks ask the children to do more challenging activities with the instruments and focus on the creation of music using each of the instruments singly. Requirements here ask that the children enter into a kind of musical question/answer dialogue with the mallet and temple blocks and the creation of songs with the round ball and the piano and the microphone.

In the last section of tasks, the children are encouraged to use multiple instruments in tasks whose settings are less structured. A space story is told in sounds, using line drawings as a visual aid. The final task asks the children to create a composition that uses all the instruments and that has a beginning, a middle and an end. (Webster, 1994, pp. 2–3)

As described in Section 1.3, musical extensiveness (ME), musical fluency (MF), musical originality (MO) and musical syntax (MS) are the four measures reported. Musical extensiveness is measured by counting the actual seconds of time a child is involved in a task. Musical fluency is measured by observing the manipulation of musical parameters. MO and MS are evaluated by a panel of assessors. For MO, rating scales are based on criteria such as changing and/or unusual meters, large and/or frequent dynamic contrasts, changing tempi, unusual use of the instrument (i.e. special use of the sponge ball and/or use of the hands), unusual use of direction change, unusually large and/or small intervals, marked rhythmic complexity, and other musical aspects that seem unusual or particularly imaginative. For musical syntax, assessors are asked to consider features such as return to a motive heard before, elaboration through sequence and/or repetition or a rhythmic idea or melodic contour, musical phrasing with spots of relative repose, complementary rhythmic or melodic motion, sensitivity to dynamics in relation to the whole, awareness of instrument tone quality and this awareness used to shape the piece musically, sense of overall form, and other musical aspects that contributed to syntactical logic (Webster, 1994, p. 21).

The results of the children’s scores in the four measures was assessed and recorded for each student in the pilot program. They are displayed here in graphs, with a comparison between pre- and post-workshop scores. The children are numbered from 1 to 16 in the graphs, to provide greater simplicity and ease of viewing. Table 6.1 shows the individual children’s names and their corresponding number in the graphs.
<table>
<thead>
<tr>
<th>Name</th>
<th>Student No.</th>
<th>Name</th>
<th>Student No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tommy</td>
<td>1</td>
<td>Savi</td>
<td>6</td>
</tr>
<tr>
<td>Isabel</td>
<td>2</td>
<td>Roshan</td>
<td>7</td>
</tr>
<tr>
<td>Oliver</td>
<td>3</td>
<td>Naomi</td>
<td>8</td>
</tr>
<tr>
<td>Bivon</td>
<td>4</td>
<td>Dana</td>
<td>9</td>
</tr>
<tr>
<td>Nick</td>
<td>5</td>
<td>Jaya</td>
<td>10</td>
</tr>
</tbody>
</table>

In analysing the difference between the pre- and post-workshop scores, it should be noted that previous iterations of the MCTM have shown that there is little benefit gained from familiarity when redoing the test (Webster, personal communication, 2013). This means that increases in scores in the post-workshop tests represent true improvements in specific aspects of creativity. The assumption is that children approach the test differently each time, and while the activities may be the same, their compositions are different each time.

Figure 6.1

![Musical Extensiveness](image_url)

**Mean**
- Pre 396
- Post 705
Musical Extensiveness (ME) reflects the amount of clock time involved in all of the tasks in the Webster MCTM-II (2002). One of the significant changes was in the children's fluency in being able to compose, and this was demonstrated in the measure of ME. The post-workshop results showed a substantial average increase of 78% in the amount of time spent on the composition tasks during these tests. All of the children increased their scores in musical extensiveness, which is a measure of creative fluency, during the post-workshop test—the percentage improvements ranging from 14.6% to 260%. Their motivation, confidence, and ability to fluently create was so noticeably improved that the mean score for the group was nearly doubled, from 396 seconds to 705 seconds.

Naomi and Dana (Students 8 and 9), who were not at all confident in their first Webster tests, and also did not appear to be very confident in their workshop improvisations, showed a significant increase in ME and appeared to have an associated higher confidence level in their compositions in the post-workshop Webster tests. Savi and Roshan (Students 6 and 7), who had already showed some confidence with their first Webster tests and also demonstrated confidence during the workshops, were also significantly improved in the post-workshop ME measure. Roshan, in particular, appeared to want to keep creating his own music during the post-workshop session, which was highlighted by his very high ME score.
**Musical Flexibility** (MF) is the extent to which the musical parameters of "high"/"low" (pitch), "fast"/"slow" (tempo), and "loud"/"soft" (dynamics) are manipulated in the tests. For the criteria of MF, there were some students who improved noticeably in the post-workshops, while others diminished. However, there was a very small improvement between the mean scores for the group in the post-workshop tests compared to the pre-workshop scores. This variability in individual student results was demonstrated by Nick (Student 5), whose scores were significantly reduced in the post-workshop (he also scored much less for MO in the post-workshop). Another example was Tommy (Student 1), who was able to score the maximum number of points in the "talking blocks" activity, as I observed that he wanted to experiment with the instrument and try a variety of ways to hit it. He still scored highly in the post-workshop tests, but as he was had one of the highest MF scores in the pre-workshops, he was not able to match this in the later tests. Rahul, Savi, and Roshan (Students 15, 6, and 7), however, all had noticeable improvements in their MF scores, which also correlated with their improvements in MO. One observation from the tests was that when a student enjoyed a particular task in the MCTM and seemed to relate to the theme (such as space travel), then they were more confident and displayed a greater musical flexibility in their compositions. It may also have been that the children’s individual personalities and the environment in which the
tests were conducted influenced their desire and confidence to do a particular task, and this resulted in the variability of the group results. The students that scored very highly in MF, however, were able to demonstrate examples for this criterion in all sections of the Webster MCTM-II (2002):

**DVD Excerpt V: Webster Test Post. Talking Blocks. Tommy**

**DVD Excerpt W: Webster Test Post. Free Composition. Savi**

Figure 6.3

![Musical Originality Chart](image)

*Musical Originality* (MO) is the extent to which the response is unusual or unique in musical terms and in the manner of performance. The children's scores for MO also showed some individual variability, but as a group, the mean score was increased from 9.5 to 10.8 in the post-workshop tests. The majority of students showed an improvement in the post-workshop tests. Of the 16 students, only three students did not show an individual improvement in their MO. One of these students was Michael (Student 13), who had a very high MO score in the pre-workshop test, and so may not have been able to show the same level of originality on the day of the post-workshop test. There were some marked improvements, however, in some of the students. Naomi (Student 8) almost
doubled her MO score, which was consistent with her improvement in all of the criteria in the post-workshop tests. Another example was Rahul (Student 15), who demonstrated many of the criteria for originality in his free composition tasks in the pre-workshop test, but was able to extend this even further in his post-workshop test. In this case, he was able to produce a composition which created a story (he described this as hunting for treasure, encountering a monster, and then escaping), he showed variance in instrument, tempi, pitch, and dynamic use and it was also well-structured, with many contrasting sections and rhythmical complexity. Some of the learning and experience from the world music workshops may have contributed to his ability to demonstrate these criteria. There was a noticeable improvement in rhythmical complexity in this composition and Rahul related to me that he felt his knowledge of the different world music rhythms helped him to create his composition:

See DVD Excerpt X. (Identical to Excerpt F)
Musical Syntax (MS) is the extent to which the response is inherently logical and makes musical sense. There was not a significant difference in most of the children's MS scores, as shown in the comparison between the pre- and post-workshop data. These results may be expected, as they reflect that this criterion is not a focus in the expression of musical creativity, and was not emphasised in the pilot study. However, there was a small increase in the mean score from the pre- to the post-workshop tests. Again, there were a few children whose individual scores decreased, but only by a few points. However, there were a few examples of large increases in MS. For example, Naomi (Student 8) was one student who improved in her MS scores, as she did in fact in all the other measures in the MCTM-II. In the pre-workshop tests, she was only able to demonstrate a sensitivity of the music to suit the story of the assigned task, however, in the post-workshops, she showed all of the MS criteria in her “space voyage” composition:

**DVD Excerpt Y: Webster Test Post. Free Composition. Naomi.**
It is worth pointing out the change in Savi's (Student 6) scores on MS. He improved his score from 7 to 9 in the post-workshop test. In particular, he received a high MS for his frog music task in the post-workshop, which demonstrated syntactical logic and sensitivity to the story with obvious “jumping” and “swimming” sounds:

**DVD Excerpt Z: Webster Test Post. Frog Composition. Savi.**

Despite these few exceptions, most of the children did not show much difference between their pre- and post-workshop MS scores.

**Differences in assessors' scoring**

The data from the children's Webster's MCTM-II (2002) was analysed using my scores (Assessor 1) from the tests, as I was the only one of the assessors to review the entire group of children. The preceding results and graphs have been collated from my scores for the children, against the specified criteria in the Webster's MCTM-II (2002). However, it was also important to get a few different perspectives of the children's performance against the criteria, so scores from two other assessors were also analysed. Due to time constraints, these assessors were only able to score half of the group of children, for both pre- and post-workshop. Therefore, in order to compare all of the 16 children’s scores, a scaling factor was used. Each assessor’s scores were compared for the same group of children and a pre- and post-workshop scaling factor was determined from this data. This scaling factor was then used to extrapolate the scores for the other half of the group who had not actually been assessed by two of the three assessors.

As discussed in Section 1.3, it was important to use a number of assessors to balance the intersubjectivity that inevitably occurs when scoring creative activities. The other two assessors were both highly experienced music educators, with a strong background in working with world music. However, their backgrounds, perspectives, and interests would all have some influence on how they chose to score the various activities. The tasks that involved scoring against the MO and the MS criteria are “best evaluated by a panel of judges” (Webster, 1994, p. 30), as there is a degree of subjectivity required to score these tasks. While there is a list of detailed criteria provided for MO and MS in Webster's MCTM-II (2002), criteria such as “musical phrasing” and “other musical aspects that seem unusual or particularly imaginative” (Webster, 1994, p. 21) require some interpretation on the part of the assessor. Interrater reliability is a measure that assesses the consistency of ratings made by different judges or assessors (Chen & Krauss, 2004). As there is inherent subjectivity involved in the assessment of musical outputs, it would be expected that the interrater reliability in this study may be low. This
is not really an issue, since the objective in this study is to analyse the change in the children’s scores between pre- and post-workshops. If each assessor is consistent in the way they score between pre- and post-workshops, then the change in scores will result in meaningful data for analysis. Using three assessors can negate potential bias from each assessor towards particular children or specific tasks.

The three assessors’ scores in this study showed that there was indeed subjectivity in the way each of them scored. For ME, where the requirement was to only record the amount of time taken for each task, the assessors’ scores were all within 5% of each other (and in one case 10%), as would be expected for criteria that did not involve any subjectivity. For the other criteria, Assessor 2’s scores were consistently lower for all criteria in both the pre- and post-workshop tests. Her scores ranged between 27% to 35% lower than Assessor 1. Irrespective of this, her average scores for the group of children in each of the criteria all increased between pre- and post-workshops. This was consistent with Assessor 1’s average scores, who also increased in all measures between pre- and post-workshop tests. However, Assessor 3’s scores were not as consistent. Her scores in the pre-workshop tests were all within 10% of Assessor 1. She appeared to score much lower in the post-workshop tests, and had averages 20% to 40% lower than Assessor 1. The main differences appeared in her views about whether some compositions displayed MO and MS. For example, Assessor 1 and Assessor 2 both scored large improvements for Savi in these criteria. Assessor 3 actually scored him lower in the post-workshop tests—she commented that in her view Savi incorporated a lot of learned material in his compositions. Assessor 1 and Assessor 2 viewed this intertwining of learned and improvised material as being very original, and therefore scored him highly in MO and MS.

Some of the differences in the assessors’ scoring and the variability in the children’s scores could also be attributed to other factors that influenced the study. For example, the day and time of each test and the environment in which they were conducted may have had an impact on the children’s behaviour and mood. Consequently, this may have affected their performance on the tests. The children’s preferences and motivation for certain activities in the tests were not able to be analysed formally. The small group of children in the pilot study also has meant that a larger number of test results could not be analysed to see if there were any significant statistical relationships in the data. Despite these factors and some of the variability in Assessor 3’s scores, there was a benefit in considering all three assessors’ scores to counter potential subjectivity, as
previously discussed. It has provided a more comprehensive and comparative analysis on the children's performance on the Webster MCTM-II (2002).

**Summary of assessment**

Fluency, flexibility and originality have been identified in extensive research as skills related to creative behaviour (Gardner, 2009; Feldhusen & Treffinger, 1980; Runco & Chand, 1995; Sternberg & Williams, 1996; Torrance, 1990), as discussed in detail in Chapter 2. The results from the Webster MCTM–II (2002) for the children, even in this short duration pilot study, are therefore very encouraging, in that they reveal that all of these characteristics of creativity appear to have been positively influenced by the world music workshops experience. The results from this study show that all the children improved substantially in their musical fluency. Of the 16 children, 13 improved in their musical originality, and some showed a very noticeable change in their musical processes and musical outputs. It is less easy to draw any definitive conclusions about the children's musical flexibility—there was variability amongst the different children's scores, although the overall mean score for the group was improved. The results showed that there were few changes in musical syntax, which could perhaps be expected, as it was not a focus of the pilot study and the expression of musical creativity.

Although not statistically significant due to the small sample, it is worth pointing out the very high correlation in this study (75% in the pre-workshop tests and 69% in the post-workshop tests) between MF and MO in the Webster MCTM–II (2002). This is an interesting pattern, showing that the children who performed well in MO also had high MF. While the highest relationship existed between these two criteria, as may be expected, there were also good correlations between the other criteria i.e. children who showed creativity tended to perform well against all the measured criteria.

**6.2. Results from TTCT–Verbal and Figural**

**Description of tests**

Torrance's approach to the measurement of creativity involves a number of different characteristics of creativity, as discussed in Section 2.6. While the TTCT was originally based on Guilford's (1959) divergent thinking factors of fluency, flexibility, originality, and elaboration, the latest version of the TTCT is broader in scope. This is due to Torrance’s continued research and belief that it required a greater breadth of factors to reflect the impact of personality, motivation, environment, training, and experience on
creativity (Torrance, 1979, 1988). The TTCT–Figural measures against the following criteria, as described by Kim (2006):

- Fluency: the number of relevant ideas. Shows an ability to produce a number of figural images.
- Originality: the number of statistically infrequent ideas. Shows an ability to produce uncommon or unique responses.
- Elaboration: the number of added ideas. Demonstrates the subject’s ability to develop and elaborate on ideas.
- Expressiveness of Titles: the degree beyond labelling. Based on the idea that creativity requires an abstraction of thought. It measures the degree a title moves beyond concrete labelling of the pictures drawn.
- Resistance to Premature Closure: the degree of psychological openness. Based on the belief that creative behaviour requires a person to consider a variety of information when processing information and to keep an “open mind”. (p. 5)

In addition to these five measures, there are also 13 other criteria which Torrance called “creative strengths” (Torrance, 1990; Torrance & Ball, 1984). These are used in the calculation of the Creativity Index in the TTCT–Figural test. The 13 criteria are:

- Emotional Expressiveness (in drawings, titles).
- Storytelling articulateness (context, environment).
- Movement or action (running, dancing, flying, falling).
- Expressiveness of titles.
- Synthesis of incomplete figures (combination of 2 or more).
- Synthesis of lines (form A) or circles (form B) (combinations).
- Unusual visualization (above, below, at angle).
- Internal visualization (inside, cross section).
- Extending or breaking boundaries.
- Humour (in titles, captions, drawings).
- Richness of imagery (variety, vividness, strength).
- Colourfulness of imagery (excitingness, earthiness).
- Fantasy (figures in myths, fairy tales, science fiction)

Torrance's TTCT (2007a, 2007b) were designed to measure all these different creative abilities using a battery of tests, involving both verbal and figural forms.

The TTCT–Figural test has two forms, A and B. Form A was used for assessment in this study. The figural test consisted of three activities, “Picture construction”, Picture completion”, and “Lines/circles” (Torrance, 2007a, pp. 4–5). In the first activity, the children were asked to make a picture from a curved shape. The second activity involved them adding to a series of incomplete shapes to form complete pictures and then give a title to their pictures. The third activity in the test asked the children to make as many objects or pictures as they could from a series of straight line pairs, and then add a title to each one. From their responses to these three activities, the children were scored against five criteria—fluency, originality, expressiveness of titles, elaboration, and resistance to premature closure. For example, the measure of fluency was assessed by adding together their score for activity one and activity two. After the scoring of all the activities, the responses were also reviewed for evidence of a list of the 13 creative strengths, such as "richness of imagery" and "unusual visualisation" (Torrance, 2007a, p. 9). A Creativity Index, was also calculated by “pooling the creativity strengths ratings and the average standard score” for each student (Torrance, 2007a, p. 9). The scores against all the criteria were reported as a raw score, age-based and school grade-based national percentiles, and age-based and grade-based standard scores. Each child received a report from Scholastic Testing Service that detailed these results. An example of a scoring sheet for the TTCT–Figural is included in Appendix C. As the children in this study were from a variety of different school grades, the age-based national percentile was used as the most useful score to analyse the results.

**Methodological issues**

In this study, the scores for many of the criteria in the TTCT–Figural were quite varied across the group of children. For some of the children there was a significant increase in the post-workshop test, but for others there was a significant decrease. This may have been in some part due to the circumstances of taking the tests. Some of the children had lapses in concentration during the post-workshop tests in particular (the day of testing was very hot, and this combined with their knowledge that this was the last formal meeting of the group, and that the world music workshops had concluded, I observed that their interest in doing the tests had waned). Naomi, Dana, Isabel, and Paula all had variability between their pre- and post-workshop scores and significant decreases in their post-workshop scores. Their concentration on the tasks in the post-workshop
TTCT–Figural tests was unfortunately very poor, and this was reflected in some low scores for the criteria. Their scores resulted in lower post-workshop scores for the group in the TTCT–Figural tests. Interestingly, they appeared to improve their focus on the TTCT–Verbal tests, and this was reflected in a more consistent set of scores. As discussed in Section 2.8, the TTCT do not take into account the effects of environment and cultural differences, individual preferences for different styles of testing, and how different personalities may react to these circumstances. This may have been a factor in the variability in the scores for the TTCT–Figural during this study. Consequently, I have removed these four children's scores from the analysis of the TTCT–Figural but not from the TTCT–Verbal, which is reflected in the following graphs. When removing these children’s scores from the group, the TTCT–Figural results are more consistent.

**Figure 6.5**

In the TTCT–Figural, fluency was the factor that showed a significant improvement in the post-workshop tests, increasing from an average of 65.4% to 82.8% for the group. Bivon, Roshan, and Rahul (Students 3, 6, and 11) in particular, all showed a large increase in their post-workshop scores. The increase in fluency here correlates to an increase in fluency in the TTCT–Verbal scores and also to the children’s musical fluency improvements in the Webster MCTM–II (2002).
The TTCT–Figural originality scores were quite varied across the group of children. In the case of Rahul and Rebecca (Students 11 and 12), their high pre-workshop scores were followed by much lower ones in the post-workshop tests. For Bivon and Tristan (Students 3 and 10), it was the reverse, with a large increase in their originality scores. As a group however, the average score for originality was slightly decreased between the pre- and post-workshop tests.
There were some very large differences in the children's scores for this factor between the pre- and post-workshop tests. For some students, the scores decreased dramatically, but for others, there was an improvement. It does not seem possible to draw any pattern from this data. The average score for the group of students decreased from 73% to 56%. With the emphasis on storytelling in the pilot, I may have expected an improvement in the scores for this criterion.
The mean score for the group increased from 55.5% to 60% between pre- and post-workshops, however there was variability in the children's individual scores. For example, Savi and Rahul (Students 5 and 11), who were two of the highest scorers in the pre-workshop, did not perform as well in the post-workshop. However, many other children, such as Rebecca, Tristan, Michael, and Bivon (Students 12, 10, 9, and 3) all improved from average scores in the pre-workshop to high scores in the post-workshop. It may be that the children’s experience with elaboration, which was a part of the improvisation activities in the pilot, assisted in the development of this capability.
The analysis of the children's performance for this factor is very similar to the previous comments for the elaboration factor. There was variability amongst the group of children, but as a group the mean score improved slightly between pre- to post-workshop tests. As a group, the children may have improved on their ability to be "open-minded", one of the objectives of the pilot program.
There were some large increases in Bivon, Michael, Tommy, and Tristan's (Students 3, 9, 1, and 10) creativity index scores, but also some marked decreases in Savi, Roshan, and Jaya's (Students 5, 6, and 7) scores post-workshop. The scores for this factor again highlight the variability in the group of children. However, overall there was a very small increase for the group's mean score in the post-workshop test. The Creativity Index is very dependent upon personality factors, and this may have been a reason why there was considerable difference amongst the individuals in the group. Further research on the children's personality attributes could provide more explanation.
The TTCT–Figural Average Scores show a small improvement between pre- and post-workshop. While scores for five out of the seven criteria improved for the group of children, the average group score improved by 5.5%. The results indicate that the TTCT–Figural tests produced considerable variability in the scores for individual children, although overall there was an improvement in the group of children’s creativity, as measured against the criteria.

The TTCT–Verbal also has two forms, and Form A was used for this study. The verbal tests involved six different activities. The first three activities are based on a drawing—in this case, it could be a picture of an elf looking at its reflection in the water. The children were asked to guess and write down as many questions as they could about this picture, and then also guess and write as many possible causes for why this scene is occurring and, similarly, for what might happen as a consequence of this scene. Activity 4 asked the children to consider how they might improve a product (in this case, a stuffed toy elephant), to make it “more fun to play with as a toy” (Torrance, 2007b, p. 7). Activity 5 involved writing down as “many interesting and unusual uses” for empty cardboard boxes (p. 8) and Activity 6 asked the students to use their imaginations and “just suppose” (p. 10) about what would happen if an improbable situation took place.

The TTCT–Verbal test is scored against three criteria: fluency, flexibility, and originality. The additional criteria of flexibility that is measured in the verbal test is considered an
important factor for creative thinking by many researchers (Chi, 1997; Mumford & Gustafson, 1988). Flexibility can be considered as the ability to be able to generate many ideas that come from different categories. For example, in Activity 5, if the children were able to produce many uses for the cardboard box that were for storage, construction, and play, then they would score highly against the criteria of flexibility.

Figure 6.12
Figure 6.13

TTCT Verbal Flexibility

Mean %
Pre 46.75  
Post 50.6

Figure 6.14

TTCT Verbal Originality

Mean %
Pre 63.25  
Post 74.3
The data for the three criteria in the TTCT–Verbal tests showed that the children’s scores for the TTCT–Verbal were generally more consistent between pre- and post-workshop than their scores for the TTCT–Figural. The TTCT–Verbal tests also showed an improvement for the group on average for each of the three factors of fluency, flexibility, and originality and, therefore, an overall improvement of 14.5% between pre- and post-workshop tests. One student in particular, Jaya (Student 10), had a very large increase in all of her scores against the three factors, and her average score was very high at 97%. Her confidence in doing these set of tests was noticeable compared to her pre-workshop ones. Interestingly, Naomi and Dana (Students 8 and 9) also showed significant improvements in the TTCT–Verbal, in contrast to their performance on the TTCT–Figural. This could also highlight that different ways of testing creativity appeal to different students, and that individuals may prefer one style of tests to another.

The difference in the children’s scores on the verbal and figural tests is not inconsistent with previous research. Torrance (1990) in fact, found very little correlation \( r = .06 \) between performance on the verbal and figural tests (as cited in Cramond, Matthews-Morgan, Bandalos, & Zuo, 2005, p. 3). There is some evidence that the TTCT–Verbal are in fact the more reliable predictor of future creativity than the TTCT–Figural (Plucker, 1999, p. 108). If this is the case, then there may be an argument for primarily using the TTCT–Verbal results in this study, given that the TTCT–Figural results have
considerably more variability and, therefore, there is greater difficulty in drawing definite conclusions from this data.

The results from the TTCT-Verbal (and to a lesser extent the TTCT-Figural) have indicated that there was an improvement in the creativity scores for the group of children who participated in the world music pilot program. It raises the possibility that there was learning from their experiences which benefited their musical creativity and transferred to other domains, resulting in improvements in their general creative thinking. As these tests have only involved a small group of children in the pilot, further research could be done to investigate the results for a larger group of children and also the effects of environment, culture, and personality.

6.3 Correlations Between Quantitative Data Sets

In light of the Webster MCTM-II (2002) and the Torrance TTCT (2007a, 2007b) data that have been discussed in the previous sections, it is also useful to consider and analyse the relationship between these two sets of data. Webster (1989) has described the influence that the Guilford (1959) model had on the development of his MCTM (p. 59) and this is a similar case for the TTCT. Both models therefore, have a similar theoretical basis. Given this similar basis, there may be a relationship between the measure of ME (in other words, fluency in the musical domain) and fluency as measured in the TTCT. Similarly, there may be a relationship between MF (flexibility in the musical domain) and flexibility in general creative thinking, and also between MO (originality in the musical domain) and originality in general creative thinking, as measured by TTCT.

The relationships between musical creativity and general creativity measurements manifested to varying degrees in the actual data from this study. The data revealed that there was a correlation of 40% between the MF and the TTCT-Verbal flexibility scores, 27% between the MO and the TTCT-Verbal originality scores, and 17% between the ME and the TTCT-Verbal fluency in the pre-workshop tests. It is difficult to claim that these are valid correlations, given that it was calculated on a small sample group, but some of these relationships could be explored further with larger groups of children to determine if there are indeed any consistent patterns. If so, then it may illuminate the way the transfer between domains occurs in creative thinking.

Looking at the group of students as a whole, the percentage improvement in the children’s scores on the MCTM-II after the workshops was similar to the percentage improvement in their scores on the TTCT-Verbal for most of the criteria. The one exception to this was the very large improvement (78%) in the ME criteria. The average
percentage improvement on all the other MCTM–II criteria was between 9% to 13% and for the TTCT–Verbal criteria ranged between 8% to 22%. The children’s experience in improvising appears to have greatly increased their confidence and ability to fluently musically create, which directly impacted on the high post-workshop ME scores. However, it appears that there was also a smaller, but similar, impact on the other criteria (flexibility and originality) in both the musical and non-musical domains. If this case was able to be generalised for larger groups of children, it could lend some weight to the argument for a transfer of creative thinking across different domains.
PART FOUR:
A CREATIVITY FRAMEWORK
7. Conclusions and Recommendations

Having explored academic discourses related to cultural diversity and creativity in children, designed world music workshops to pilot some of the ideas arising from this body of work, and analysed the experiences and outcomes both qualitatively and quantitatively, this chapter will try to bring together the main strands of enquiry of this study. In the opening paragraphs of Chapter 1, I provided three short impressions of children engaging with the world music workshops:

On first hearing Javanese gamelan, Naomi likens the sounds to “diamonds clinging together,” and draws a lamp with strings of diamonds hanging from it. In the workshops that follow, she seems shy and reluctant to improvise at first, but as they progress, she becomes one of the most enthusiastic and creative improvisers. Tommy has never seen, heard, or touched an Indian tabla before, yet he effortlessly translates the sounds of rabbits running, elephants stomping, and the moon upon the water from an Indian folk tale on the two hand drums. After participating in four West African djembe workshops, Rebecca returns to a Latin-inspired piano piece she is learning and approaches it from its rhythmic base rather than the more conventional European melodic and harmonic approach, enabling her to grasp its essence quickly and deeply. (Section 1.1)

In what way does this thesis shed light on these experiences and the research questions that underpin them? In the following sections, I will explore the correlation between qualitative and quantitative data from the study, key factors influencing children's creativity in the context of the world music workshop pilot, and their links to key characteristics of general creativity. This leads to a proposal for a pedagogical framework to better understand, assess, and apply factors influencing children's creativity as they engage with new musical forms and idioms.

7.1. Connections between Qualitative and Quantitative Data

There are some important connections to be drawn between the pilot’s qualitative and quantitative findings as outlined in Chapters 5 and 6, respectively. The comparison between findings from two different methods of assessment and the corresponding analyses assists in validating the relevance of key findings, and contributes to making the case for a possible correlation between engaging in world music workshops and stimulating children's creativity.
While it is possible to draw some link between selected criteria in the TTCT–Figural results and the qualitative data, the variations in the TTCT–Figural results make it difficult to draw any firm conclusions from these results. For example, the TTCT–Figural results showed an increase in the criteria of fluency, which was also supported by an increase in the children's musical fluency observed during the workshops (Figure 6.5). However, there was a small decrease in the average result for originality in the TTCT–Figural (Figure 6.6), while both the qualitative and quantitative data showed increases in the children's musical originality, for the reasons outlined in Chapters 5 and 6.

There was some evidence between the quantitative and qualitative findings of an increased use of storytelling amongst the group of children. In many cases, an increased ease and imaginative use of stories in the children's post-workshop compositions was observed in the MCTM–II (Section 6.1). The emphasis on this component during the pilot may have assisted the children to develop this capability. The children enjoyed and engaged with the stories during the workshops, which in turn inspired their improvisations.

The influence of individual creativity was another factor that was highlighted in the different assessment methods in this study. Children with a high level of individual creativity (as indicated by their performance on the MCTM–II) took a dominant role in the group improvisations and influenced how the group created musically (Section 5.5).

Other results were more concrete and measurable. For all participants, the MCTM–II showed an increase of 13.7% in their musical originality after the pilot (Figure 6.3), and with the TTCT–Verbal, an increase of 11.05% in their originality (Figure 6.14), or the ability to produce uncommon or unique responses. As reported by the children in their interviews, and from my observations, there was also an increase in their musical originality that derived from their new polymusicality after the pilot.

Both the musical and the general flexibility of the group of children were found to have increased after participation in the pilot. Musical flexibility was increased by 13.3% (Figure 6.2) and flexibility as measured by the TTCT–Verbal improved slightly by 3.85% (Figure 6.13). The world music workshops may have contributed to the development of this criterion. For example, there was a noticeable improvement in rhythmical complexity in many of the compositions in the post-workshop MCTM–II. There were also qualitative examples of this increase in flexibility. Many of the children discussed the use of different rhythms and musical structures in their compositions after the pilot (Section 5.7).
One of the key findings of the study was the increased musical extensiveness, or musical fluency, displayed by the children after the pilot program. The MCTM–II results showed a high increase of 78% (Figure 6.1). It may be expected that the greater improvement would manifest in the same domain that the children learned in the pilot. However, it was also found that the group of children showed an increase in their general fluency to produce new ideas, as revealed by the TTCT data (17.4% in the TTCT–Figural and 6% in the TTCT–Verbal—Figure 6.5 and Figure 6.12). Additionally, the qualitative observations about the children’s increases in confidence and the related ability to improvise demonstrated that there was an increase in their musical fluency during the workshops. The improvement in the children’s fluency was one of the most outstanding findings from this study. From these findings, it appears that there is a demonstrable relationship between the improved fluency, flexibility, and originality as indicated by both the MCTM–II and the TTCT–Verbal results, and the demonstration of these criteria in and after the world music workshops. As these three criteria are all characteristics of creativity, these findings indicate that as a result of participation in the world music pilot, the children developed aspects of creative thinking which manifested in different domains.

Understanding if and how the children developed factors that enhanced their creativity during the world music pilot program highlights the integrated nature of the development of these factors. Considering data using a variety of methods assisted in coming to a deeper understanding of a phenomenon recognised as highly complex. Further world music programs, conducted over a longer period of time and with larger groups of children, may provide further data, insights and associations connecting the key factors that were found to influence children’s creativity in this study.

7.2 Key Factors Influencing Children’s Creativity in World Music Pilot

From the qualitative and quantitative data from the world music pilot program, a number of factors emerge that support a multifaceted approach to explaining creativity. This aligns with Sternberg and Lubart’s (1996) confluence theories of creativity as discussed in Section 2.5. The influence of these various factors on the children’s creativity points towards a mix of factors potentially contributing to their increased creativity. There were indications of imaginative, metaphoric, and creative thinking displayed by the children during and after the world music pilot program. In the preceding sections, I identified some of the key factors that most likely influenced this
creativity: the interplay between familiarity and uncertainty, confidence and motivation, learned material and improvisation, group dynamics and individualism, enculturation and environmental influences, musical knowledge and involvement, and storytelling.

**Storytelling**

The use of storytelling in the workshops engaged the children’s imagination and focused their thinking on the different possible sounds and rhythms they could make with the instruments. In this way, their musical flexibility and originality appeared to be enhanced. The use of metaphor and imagery from the stories also enabled the children to draw together different ideas about the music and perhaps see it in different ways, as was demonstrated in some of their drawings (see Section 5.7). Incorporating storytelling in the workshops invoked the children’s natural ability to use this medium and contributed to their increased engagement in learning. Similarly, I found that many of the children readily engaged with the pictures or short stories that were described to them during the MCTM–II, and this assisted and inspired them to develop their compositions in the tests. The children who performed well in the TTCT also appeared to be engaged and inspired by the different stories in each task, which enabled them to be more flexible and original in their responses. From all these observations, it appears that providing the opportunity for children to engage with different forms of storytelling can help develop their creative thinking.

**Familiarity and uncertainty**

There were strong indications that the children benefited from a balance of familiarity and uncertainty for the facilitation of their creativity. Some of the findings from the workshops showed benefits were gained from increased familiarity with the musical traditions (Section 5.2). Even within the limits of short exposure to new musical idioms, as their confidence and knowledge of the new genres of world music grew, the children were usually more able to produce fluent and varied musical improvisations. However, their excitement and anticipation of experimenting with a new instrument was also evident, and this appeared to often contribute to their musical fluency and originality, emphasising the benefits that cognitive dissonance can bring for creativity. A balance of familiarity and uncertainty is then proposed for a pedagogical environment that enhances creativity.
Confidence and motivation

As a result of their workshop experiences, there was some evidence that the children's confidence in undertaking new compositions increased, although there was not necessarily a noticeable change in many of the children's post-workshop motivation levels for this activity (Section 5.3). However, as they now had some experience in improvising and experimenting with different sounds, melodies, rhythms, and musical forms, they were able to draw on this experience when doing other compositions. This was also demonstrated in the post-workshop MCTM–II, when many of the children showed an increased confidence in their ability and desire to create new musical material. The improvisation activities in the pilot gave the children the opportunity to learn experientially through self-exploration, and this seemed to increase the children's motivation levels. All these factors can be used to contribute positively to further creative work.

Learned material and improvisation

The improvisation activities in the workshops provided an important experience for the children in their exploration of musical creativity. The three world musics learned offered the opportunity for the children to use elaboration, taught patterns, and experimentation in their improvisations. This experience assisted the children in their improvisations/compositions outside of the workshops, with many of the children giving examples of using these techniques (Section 5.4). This ability was also evident in the post-workshop MCTM–II. However, it emerged that there was a balance between learned and spontaneous behaviour in their improvisations, which is an important point to consider in understanding their creative processes. There was usually a dependency on the knowledge learned from the teachers, but there were also some examples where the children felt that their experimentations were largely self-directed and occurred freely. Taking the learnings from the pilot program in conjunction with the literature on improvisation, a balance between guided and free improvisation appears to be conducive to creativity.

Group dynamics and individualism

It was evident that there were many situations when the children were influenced by the group in their improvisatory activities (Section 5.5). For example, in the case of the gamelan, as the children played their instruments individually, they listened to each other. Assisted by the conductor, the group was able to produce a cohesive sound that
“emerged” during this group improvisation. The style of learning encouraged in the gamelan workshops (and indeed in the djembe workshops) facilitated this group creativity. The children also often discussed and challenged each other with different ideas for their created musical sounds, which facilitated greater fluency in the number of sounds and rhythms in the group improvisation. However, it appears that from the data in this pilot program there was also a combination of individual and group creativity at work. Further study is required to determine the contribution that can be attributed precisely to each individual child’s creativity and to explore the synergy between this and the contribution from the group.

**Musical knowledge and involvement**

There were indications that the children’s existing musical knowledge gave them both an advantage and a disadvantage when faced with learning the new world musics. For example, their enculturation in the pedagogy of Western classical music meant that a few of the older children initially struggled with the aural transmission of the world musics, as they didn’t have the aid of musical notation with this approach (Section 5.6). A few children had some enculturation, although it was minimal, with the world music genres, and the results from this study suggest that these children engaged more deeply with the world music workshops and found it easier to acculturate than the other children. As shown from the children’s interview comments and informal discussions, the benefits of a supportive and encouraging family environment contributed to the children’s acculturation in the world musics. Overall, this study has revealed that the mix of enculturation and acculturation that a child acquires in such a program has a connection with the way their creativity is expressed and developed.

There are some encouraging indications that their workshop participation influenced the children’s approach to their music-making (Section 5.7). One of the factors that emerged strongly from this research was the renewed interest that most of the children now have in their existing music-making. The children gained a new confidence and motivation in the workshops, which continued into other areas of their involvement with music, as highlighted in the interview data. This is an important transference of skills, and provides an increased opportunity for the children to display musically-creative behaviour. They also have exhibited a desire to explore the new, a skill which is beneficial for creative endeavours, and have shown an interest in learning new instruments. There were many examples of an increased musical flexibility in the children, which was expressed in their use of different rhythms and blends of sounds in their compositions. In a few cases, there was even a change in the children’s
understanding and conceptualisation of their current Western music practice, which reflected their new world music knowledge. These examples demonstrate how learning unfamiliar world musics can assist children to develop a polymusicality. This is beneficial for their musical creativity.

**Teachers’ influence**

Finally, it is important to highlight that there was a substantial influence from the teacher and the pedagogical approaches in all of the situations where the key factors of story-telling, familiarity and uncertainty, confidence and motivation, improvisation, group dynamics and individualism, enculturation and environmental influences, musical knowledge, and involvement were evident. All of the group improvisations were influenced by the world music teachers to some extent. Some examples include the suggestion of a particular instrument to use, the use of rhythmic patterns already taught, or through demonstration of possible sounds to include. The way each genre of world music was transmitted established a unique cultural environment in the different workshops, which effected the children’s acculturation. For example, an immersive group learning approach was used in the gamelan workshops and the use of call and response techniques within the group was an important part of the djembe workshops. The children benefited from the collaborative and creative style of the workshop design and delivery. Experimentation was encouraged and a balance of encounter and instruction, as advocated by Swanwick (1988), was the teaching style employed in the workshops. This enabled discovery learning to occur, which is beneficial to the creative process. The teachers also used pedagogies that motivated the children, as building children’s confidence is crucial to the development of creativity, a link that was also emphasised in this study.

**Summary**

The data from this study strongly suggest that a number of factors in the design of the world music workshops pilot influenced the children’s creativity. The benefits from storytelling, experimentation with the new instruments, and a positive transference to the children’s existing music knowledge and interest were particularly noticeable. Also notable were increased confidence in improvisation and composition, use of patterns, creative group collaborations, and the influence of enculturation on acculturation processes. In that way, the workshops provided a conducive environment for the children to explore their creativity through learning world music genres, and the outcomes from this study need to be viewed in this context. In that way, the study raises
some thought-provoking questions about how children's creativity is influenced by specific blends of factors which may produce different outcomes for children's creativity: a topic that could warrant further research (Section 7.3).

7.3. Links to Characteristics of General Creativity

As this study explores how world music education for children may influence their creativity, it is relevant to analyse how some important characteristics of creativity, as referred to in the literature review, relate to the key factors that emerged in the world music workshops. I have identified 12 characteristics or influences that can play an important role in children's creativity that relate to the key factors from the study, as detailed in Section 7.1.

Convergence and divergence

The children displayed use of convergent and divergent thinking in their demonstrations of musical creativity—the key factors that influenced their creativity provided the opportunity for both kinds of thinking, and this combination has been shown to be important for creativity. Many authors, such as Collins (2005), Burnard and Younker (2004) and Webster (1994), have discussed how musical creativity is an interplay between convergent and divergent thinking. As their confidence grew with the music, the children were more able to produce fluent and varied musical improvisations (divergent thinking), but they also utilised many of the known patterns and skills they had learned during the workshops (convergent thinking). The improvisation activities gave the children the opportunity to learn through self-exploration and experientially (divergent thinking) but they also had a certain level of direction from the teacher (convergent thinking). Berkowitz (2010) states that improvisation requires spontaneous creativity within a set of musical and performance/performer constraints (p. 2), which means that both convergent and divergent thinking are used. The results from this research have shown that there were both examples of learned techniques such as the use of patterns and elaboration, in conjunction with more experimental and freer improvisatory behaviours exhibited by the children. For example, the use of repetition, changes of rhythmic density, and the use of cyclical patterns were evident in the children's improvisations (see Section 6.1 for example). This indicates that they had applied some of the techniques they had learned in the workshops and were thinking convergently to find a way to produce their musical outputs. However, they were also encouraged to experiment and come up with different rhythms, melodies, and timbres on the instruments. This led to the children specifically aiming to think divergently and
produce a variety of musical outputs that were different and individual. These findings are encouraging, as they indicate that there is a link between the skills required in learning world music and one of the important processes of creative thinking.

**Different contexts and connections**

There are many references in the literature to the creative process involving metaphorical thinking. Starko (2005, p. 104) describes how metaphorical thinking allows for taking ideas from one context and representing the idea effectively in a new context, in order to create a new synthesis, transformation, or perspective. The use of analogy and metaphorical thinking is related to the concept of transformation, connection, and combination of ideas across different domains—something important in creative thinking. The use of the stories in the workshops gave the children the opportunity to develop this metaphorical thinking. They were able to imagine and picture the images and details of “their” stories and use this as inspiration for their musical expressions. It enabled them to create their versions and perspectives of the stories through their musical accompaniment and improvisations (Section 5.1). Further, through the use of metaphor, they found a powerful key to help them learn and integrate new musical knowledge by comparing and contrasting it to their existing Western classical and other genres’ musical knowledge (Section 5.7). The use of metaphorical thinking involves an association of disparate ideas, a concept that is associated with creativity (Finke et al., 1992). There were examples of this association of disparate ideas in the children’s conceptual way of thinking about music that emerged in this study. For example, Rebecca looked at the rhythmic basis rather than the melodic basis as the predominant feature of her Latin piano piece after the workshops. She had reappraised her conceptual thinking of music that she already knew, using metaphorical thinking and this association of disparate ideas (see Section 5.7). Further evidence of the cognitive process of creativity at work in this study comes from examples of the children’s post pilot musical improvisations. Schilling (2005) describes this as “unexpected connection between disparate mental representations” (p. 22), such as associations and connections which the students were able to use in creating and developing a completely new structure, and resulting in novel musical behaviour and outputs. These findings indicate that the world music pilot enabled students to think metaphorically and in different contexts. Such a finding is another link to an important characteristic of general creativity.
Fluency, flexibility, and originality

There were benefits gained from improvising in the world musical traditions—it enabled the children to draw on the improvisation techniques that they had learned in the context of the pilot program and apply it to their existing music studies, leading to enhanced improvisational capability in this other context. This enhanced improvisational ability assisted with displays of greater fluency, flexibility, and originality in the children’s musical outputs (as measured by the MCTM–II). It is well established that these three factors are important characteristics of the creative process (Torrance, 1979). The world musical traditions in the pilot have an emphasis on improvisation, and this study found that the learning of these musics can have a positive link with these three characteristics of creativity. However, the children’s fluency, flexibility, and originality may also have been enhanced as a result of a number of the key factors evident in the pilot, as highlighted in Section 7.1. For example, with increased confidence, the children were able to demonstrate more musical fluency. Similarly, by experiencing more uncertainty, the children were able to demonstrate more musical flexibility and, by experiencing new musical sounds, rhythms, and structures, they were able to demonstrate more musical originality. The results from the TTCT–Verbal also indicate that there was some improvement in the children’s demonstrations of fluency, flexibility, and originality in other contexts (although to a lesser degree than in the musical context—Section 6.2). This result points towards some level of transfer across domains, as a result of their involvement in the world music pilot.

Problem-solving ability

The children’s improvisation experience in this study also facilitated the need for them to apply their problem-solving abilities. In their improvisations, they needed to work out what their choices were (for example, what musical material they wanted to repeat or vary, or what different rhythms they would use to create their music) and make decisions about what they felt was best for their improvisations. The use of problem-finding and problem-solving has also been connected with the creative process (Runco & Chand, 1995). As the world musical traditions encourage improvisation and the pedagogical approach in the workshops encouraged experimentation, these aspects contributed to the children exercising their problem-solving skills. This provides evidence of another link between the world music workshops and a characteristic of the creative process.
Tolerance of uncertainty and ambiguity

The tolerance of uncertainty or ambiguity has been proposed as an important component of creative behaviour (Zenasi et al., 2008). Schippers (2010) has discussed how music with an improvisatory style allows students to experience this ambiguity (p. 162). In the workshops, the teachers encouraged a lot of experimental and freer improvisation, and in most cases, the children were able to demonstrate a level of confidence to try new things despite their relative inexperience and unfamiliarity in these musical traditions. After the workshops, I saw examples of the children using this experience of experimentation in their compositions. Their experience in the workshops helped them to develop their tolerance of uncertainty, thereby enhancing another characteristic relevant for creativity.

Motivation

There is much evidence of motivation positively influencing creativity. In particular, "novelty-induced motivation influences the nature and strength of individual's engagement in creative activity" (Barbot et al., 2011, p. 61). There were examples of novelty-induced motivation in the world music pilot program. After the program had finished, some of the students asked about other new musics they might be able to learn the following year—this showed that they were motivated to learn other new things (Section 5.7). During the course of learning the new world musics, they gained an awareness of their abilities to learn an unknown and often difficult music, and this then transferred into other areas of their musical interactions. This motivation provided further opportunities for the children to display musically-creative behaviour in a number of different contexts. The results of this study show that the already established link between motivation and creativity was very relevant in the context of the world music pilot, particularly due to the novelty factor.

Environment

How the sociocultural environment influences creativity has been explored by many researchers. For example, Lubart (1990) and Rudowicz (2003) have discussed how deeply "creativity is bound to cultural context" (Rudowicz, 2003, p. 55) and this was certainly demonstrated in the world music pilot. Hennessey and Amabile (1988) also believe that social and environmental factors play a more major role in creative performance than innate biological and personality attributes. The children’s existing enculturation, the timeframe of the world music learning, the pedagogy used in the
workshops (the blend of story-telling, aural/oral learning and improvisatory activities), and the culture of the group environment all had some impact on the way their acculturation occurred (Section 5.6). Consequently, this mix of enculturation and acculturation that a child acquires has a connection with the way their creativity is expressed. The effect of their enculturation and acculturation on their creativity versus the effect of their innate attributes could be explored in further studies. It is important to emphasise that the way the world music teachers imparted their knowledge, which in turn was influenced by their own enculturation, also had a significant impact on the children’s expressions of musical creativity. The nature of a world music education program implies that there will always be elements of enculturation and acculturation to consider and, therefore, environmental influences on creativity will occur. This study has highlighted this link.

**Personality**

There is considerable research about the effect of personality on creativity (Batey & Furnham, 2006), as discussed in Section 2.3 of the literature review in this study. It appeared that the different personalities of the children had some correlation to their level of confidence in improvisation and composition (although it should be pointed out that the influence of the teacher and pedagogy was also very strong in developing their confidence), and their increased confidence led to enhanced creative experimentation. Their personal creative attributes were demonstrated in the social environment of the group during the workshops and while it was evident that there were many situations when the children were influenced by the group in their improvisatory activities, there was a combination of both individual and group creativity at work (Section 5.5). There were examples of children who demonstrated a high level of individual creativity (using the MCTM–II as the measure of creativity) taking a dominant role in the group improvisations and influencing how the group musically created. As the world musical traditions used in the pilot emphasised ensemble playing, this enabled the children to experience individual and group creativity. The results of this study highlight the link between world music education and individual and group attributes of creativity.

**Cultural effects on creativity**

As other researchers have also found (Brinner, 2008; Clayton, 2011; M. E. Nzewi, 1991), there are differences in creative expression within the three world music traditions in this pilot and also compared to the Western classical tradition. All of the three world musical traditions take a more holistic and immersive approach to learning and, in the
case of West African djembe and Javanese gamelan, a more group-orientated, as opposed to an individual approach to learning, as discussed in detail in the literature review (Section 3.4). There is an emphasis on creating, but only within the established boundaries and traditions of the particular music. This approach to creativity is different to that which is more usual in Western philosophy, where creating something completely new is often the objective. The children participating in the pilot program were influenced by these different approaches to creativity. I believe that their emphasis on creating as a group, and utilising many of the patterns they had learned, demonstrated this point. They were able to demonstrate different perspectives of creativity, which were influenced by the world musical traditions. The findings from this study also indicate that there are positive benefits to creativity from a multicultural experience, supporting the previous work of Leung and Chiu (2010). The study has shown that a world music education program enables students to be exposed to different perspectives of creative expression and potentially be influenced by these different approaches.

**Domain transfer**

This study has considered the question of whether development in creative thinking in one domain can be transferred to another. While the examples of increased creativity in non-musical domains reported by the parents and children in the interviews are anecdotal, this idea is further supported by analysing the results of the Torrance TTCT–Verbal (2007b). There was an average increase in creativity of 14.5% for the group of children (Figure 6.15). These results showed that there were increases, albeit modest ones, in the children's general fluency, flexibility, and originality after the pilot. Kaufman, Cole, and Baer (2009) advocate that the capacity to be creative in individuals is then developed in specific domains according to individual interests and training, and this may have been the case in this study. The children's creative abilities were extended in the pilot through their interest in learning the world musics and the training that they received. There were also examples that demonstrated an increased musical flexibility in the children, which corresponds to the development of the capability of polymusicality, as described by Anderson and Campbell (2011). These results support Morrison et al.'s (2008) belief that students who have exposure to a variety of musics with different structures could possibly be able to hold different conceptual structures in their memories, and this could provide benefits for more flexibility in their musical outputs. This was demonstrated by some students who incorporated and blended elements of different world music rhythms, structure, and sounds together with their
existing musical knowledge, and created more varied and original improvisations/compositions after the pilot program. The study has found that a world music education program may have some impact on creativity in other domains. Further investigation of this link is recommended, with more in-depth world music pilot programs and with a larger number of students.

Summary

In tying all these factors together, the characteristics of creativity that emerged in this world music education study seem to support an integrated or confluence model of creativity. It provides an illustration of how Barbot et al.’s (2011) and Sternberg and Lubart’s (1999) confluence theories of creativity can apply to world music education contexts. The premise of these theories is that cognitive, conative, and emotional factors that interact dynamically with the environment can assist in the development of creativity. This study has described how key factors observed in the world music pilot relate to these cognitive, conative, emotional, and environmental characteristics of and influences on creativity. It has provided many indications that a program of world music workshops for children can encourage characteristics of creativity to develop through the interaction of a number of factors. But this study has also commented on how and why these aspects of creativity interact, as Hunsaker (2005) suggested. There was a relationship between the different factors that influenced creativity in this pilot, probably correlated with the specific music genres, environment, and personalities involved in the pilot.

Further research is needed to substantiate the influence on creativity of each factor identified in this study and their interaction, as well as the influence of cultural background, personality attributes, and age of participants. This will require elements of research design well beyond the scope of this study: much greater numbers of students in different settings, longer (and possibly shorter) exposure to measure differences in outcomes, different teachers and pedagogies, and control groups. This would open the door to greater understanding on a number of key questions left unanswered by necessity in this study; for example, how more exposure to and further knowledge of the musical traditions impact on creativity development. Implementing the world music workshops program in different geographies and with children of different sociocultural backgrounds would enable further analysis of the effect of enculturation and acculturation on children’s creativity. In addition, the connection between arts
education and the development of imagination and general creativity (Bamford, 2006; Eisner, 1998; Moga, Burger, Hetland, & Winner, 2000) is of continuing interest.

There have also been some insights acquired from the pilot program that was implemented in this study that can contribute to a refinement of the world music workshops in future implementations. While learnings from each workshop session did influence successive workshops in an iterative way during the pilot, there are some elements that may benefit future workshop programs. It would be useful to incorporate other world music traditions that have a focus on percussive instruments that are relatively easier to learn, as this mode worked well with the children. The benefits of learning and engagement through multi-modal art forms were evident during the pilot and, thus, a greater emphasis on integration of other art forms such as dance and drama is recommended to enhance the children’s creativity skills development. A slightly longer timeframe for the program could be beneficial, as it would allow more time available for development of improvisational skills once the children had acquired a basic skill level in a specific world music tradition.

Given the focus in many countries on creativity skills, these world music education programs could become an important educational tool, used in a variety of educational environments. Kiehn (2003) observes “an immediate need for more direct replication of research in music improvisation creativity, particularly at the elementary school level” (p. 285). Further implementations of the world music education program could contribute to this goal and provide greater understanding about how children develop improvisation skills, in both the musical and non-musical context.

7.4 A Framework for Enhancing Creativity

The blend of factors identified in this research as potentially contributing to creative behaviour in children can be brought together in a framework that can be used to conceive, develop, implement, and evaluate pedagogical environments conducive to creative development in children through exposure to musical practices that are new to them. Taking into account the main factors that proved most effective in the pilot program, as well as the children's musical backgrounds and existing creative abilities, such a framework could help in gauging how much of a contribution to enhanced creativity each specific factor can make, as well as the interaction and synergy between the factors, with the goal to enhance children’s creativity not just in the musical domain, but also in general. In that way, such a framework can contribute to the design of
pedagogical environments specifically geared to stimulate creativity. Taking the themes that emerged in Chapter 5, I have mapped these against seven generic factors and five specific world music factors, as shown in Figure 7.1.

**Figure 7.1**

**A Creativity Framework: Spectrum of Factors to be considered in World Music Workshops**

<table>
<thead>
<tr>
<th>Generic Factors</th>
<th>Specific World Music Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiarity ←-------------------------x--------→ Uncertainty</td>
<td>Single music tradition ←-------------------------x→ Multiple music traditions</td>
</tr>
<tr>
<td>Existing knowledge ←-------------------------x--------→ New knowledge</td>
<td>Learned material ←-------------------------x→ Improvisation</td>
</tr>
<tr>
<td>Single context ←------------------------x-----------→ Multiple contexts</td>
<td>Guided improvisation ←-------------------------x→ Free improvisation</td>
</tr>
<tr>
<td>Individual ←-------------------------x-----------→ Group</td>
<td>Notation ←-------------------------x→ Aural/oral transmission</td>
</tr>
<tr>
<td>Criticism ←-------------------------x→ Motivation</td>
<td>Single discipline ←-------------------------x→ Integration of other arts</td>
</tr>
<tr>
<td>Didactic teaching ←-------------------------x→ Experiential learning</td>
<td></td>
</tr>
<tr>
<td>Enculturation ←-------------------------x→ Acculturation</td>
<td></td>
</tr>
</tbody>
</table>

As the figure demonstrates, I consider each of these sets of factors a continuum or spectrum rather than polar opposites or black-and-white choices. This allows for well-considered choices on where to position activities at any time in any specific pedagogical environment. For example, there is a spectrum between uncertainty and familiarity in the pedagogical environment: in some cases—or even in some stages in the workshops—it may be appropriate to throw the participants into the musical deep end, while at others it would be advisable to let them work from a basis of security in learned material. Each pedagogical setting will be unique, as it is dependent on the specific blend of factors that are optimal for a specific environment of children, teachers, and choice of musical traditions. For the specific socio-cultural environments described
in this study, specific music traditions, teachers, participants, timeframes, and pedagogical activities were chosen, which inevitably influenced the specific results, however, I would argue, not the overall outcomes.

**Balance of factors**

In the pedagogical setting designed for the pilot, the analysis revealed that it was important to have a balance of both uncertainty and familiarity for the children (Section 5.2). The familiarity gained with the world musics assisted them in producing a greater fluency in their improvisations, but at the same time, a degree of uncertainty provided them with the impetus to experiment and maintained their interest to explore further. For these factors, I would suggest that it was important to be slightly further to the right of the spectrum (such as, towards uncertainty) for the optimal development of the children's creativity, as illustrated in Figure 7.1.

As one of the defining aspects of creativity is to find or produce something “new”, as an appetite to explore new knowledge is considered an important component in the creative process. As discussed in Section 2.2, creativity can be boosted through new, unexpected, and unusual experiences. With the opportunity to make new associations between ideas and think more flexibly, new and original ideas are formed, as the children were able to do in the pilot. Many were able to incorporate and blend elements of different world music rhythms, structure, and sounds together with their existing musical knowledge to create more varied and original improvisations/compositions after the pilot. So the creation of this new knowledge relied in part on their existing knowledge. This principle can be extended to other non-musical domains. In the workshops, the balance of the existing and new knowledge on the spectrum may have favoured the new (the right hand side in the diagram), but it nonetheless required existing knowledge, as illustrated in Figure 7.1.

There were indications from the pilot data that the story-telling aspect in the workshops facilitated the children's musical fluency and flexibility in their improvisations (Section 5.1). However, there were also illustrations of the children applying these techniques in the pre-workshop tests and interviews. Therefore, it is reasonable to assume that a combination of existing ability and developed ability contributed to their use of this factor. Metaphorical representation of music was evident in many of the children's drawings, as described in Chapter 5. This characteristic was observed in both the pre- and post-workshop interviews—it was not necessarily a skill that was only developed as a consequence of the workshop experience. However, providing the opportunity for
children to further utilise this metaphorical skill is a way for them to develop their creative thinking. The storytelling and the use of metaphor allowed for the children to see things in different contexts. Rather than learn in a single context, they were able to extend the knowledge they learned and apply it to other situations, such as in their existing Western classical music lessons. A balance between the left and right hand side of the spectrum in the creativity system was then appropriate, as illustrated in Figure 7.1.

All of the children increased their scores in musical extensiveness, with the mean score for the group nearly doubling during the post-workshop MCTM–II, demonstrating a noticeable improvement in this measure of their creative fluency (Figure 6.1). This was due to a great extent to their motivation, confidence, and ability to fluently create. Through a combination of novelty-induced motivation, teacher encouragement, intrinsic motivation, and experience, this supports a strong argument for the development of creativity through participation in the world music workshops. For this factor, it appeared to be important to be far to the right side of the spectrum, and not promote the opposite approach of criticism, as illustrated in Figure 7.1.

In some cases, the various factors had both an enhancing effect and limiting effect on the children's creativity. With a group improvisation, there is a need to play in time with the group beat and to consider how the individual instrument fits into the overall sound created by the group from a dynamic level, and from a melodic and rhythmic perspective (in the case of the world musics involved in this study). This can result in a more group-oriented creativity, as the musical choices are not completely free and are determined by the group dynamic and collaboration. There were also examples in this pilot program of the children discussing and challenging each other with different ideas for their created musical sounds. This facilitated greater fluency in the number of sounds and rhythms that resulted in the group improvisation (Section 5.5). As part of the group creativity, there is always an element that comes from the individual: the combination of these factors is then a balance between individual and group creativity, as illustrated in Figure 7.1.

Teaching in a more holistic way was an important part of the pedagogy in the pilot program. While there was a slight modification in the way the world music teachers imparted knowledge, given the shortness of the program and the specific cultural environment, teaching holistically was still an objective. As discussed in Chapter 5, it was observed that the use of an immersive, whole piece approach to learning which
involved imagery, movement (in the case of West African djembe) and aural transmission, did seem to stimulate the children’s creativity. The importance of the role of the teacher was quite evident in the pilot. Through careful planning, the teaching team created a specific pedagogical environment—one that aimed to be conducive to creative development. The amount of structure and guidance given to students versus the amount of self-discovery and exploration was shown to be an important factor in this pedagogical environment for the effectiveness of creative teaching and for the children’s creativity. For this factor, the benefits for creativity appear to come from a greater amount of exploration, rather than didactic teaching. This is illustrated on the spectrum in Figure 7.1.

The results from the pilot showed that a mix of existing enculturation and acculturation that the children acquired were important for the way their creativity was expressed. As discussed in detail in Section 5.6, there was a combination of both of these factors involved in the workshops. This is illustrated in Figure 7.1. However, it is anticipated that different socio-cultural environments would yield a different balance of these factors.

The findings from the pilot program have implications for teacher education and teachers’ professional development. Teachers can draw on a number of aspects that the research has highlighted and incorporate these into their pedagogy. In particular, these aspects include the importance of flexibility in their pedagogical processes, encouragement for students to develop an openness to new experiences and a tolerance of uncertainty, the importance of a balance between encounter and instruction in their teaching pedagogy, the implementation of an iterative workshop program developed through feedback and reflection, the use of arts-based methods to better understand children’s learning behaviours and processes, and the importance of a pedagogical environment focused towards students’ motivation and engagement. The Creativity Framework can be used as a basis to encourage greater creative development for children and to further understand the teachers’ role in this development. Pre-service teachers across a variety of different disciplines can work in collaboration with world music teachers using the Creativity Framework, while a series of pilot programs introduced in different educational environments can enable teachers involved to learn from the program.
**World music factors**

In terms of the specific world music factors, the pilot program revealed blends of factors to create its unique pedagogical setting. A choice was made to involve multiple music traditions in the program. This assisted with novelty-induced motivation, as the children gained knowledge of three different musical traditions, which may have contributed to greater musical flexibility. There was a focus on improvisation in the pilot, with the emphasis on allowing a great amount of free improvisation. Despite this, the importance placed on “building blocks” and learned patterns assisted the children in their improvisations. There were many examples of the teachers making suggestions to guide the children’s improvisations. Therefore, the balance was placed further to the right on the improvisation spectrum, but still keeping some weight on the left. The method of transmission was exclusively aural/oral in this pilot. As discussed, this was observed to have contributed to enabling the children to engage more freely with the instruments and gain a more holistic understanding of the musics (Section 5.6). Finally, the use of movement, imagery, and storytelling were important elements of this pilot program, and they appeared to demonstrate positive benefits for the children’s creativity. Consequently, the balance was placed further to the right of the spectrum for the integration of other arts. All the world music factors are represented on the spectrum in Figure 7.1.

In this discussion, it is useful to consider the benefits that the world music factors bring. Would some of these factors also contribute to enhancing children’s creativity if they were used in a Western classical music context? All of the factors could indeed be applicable in this context, and it is possible that other frameworks could be constructed from a program utilising this style of music. However, the use of improvisation and aural/oral transmission is more easily applied in world music contexts, given that these factors are part of their tradition. As improvisation has contributed to a large part of the pedagogy used in the pilot, this highlights an important element that world musics have brought to this study. The world musics have also provided the opportunity for children to gain exposure to a wide variety of different structures, sounds, and rhythms, which they may not be able to experience in other contexts. This has been beneficial for their association of disparate ideas, and subsequently their creativity.

Given the potential for more general application, a more organic version of the diagram of the framework is represented in Figure 7.2. I have designed it in the shape of a leaf, with the various spectrums as the “veins” of the leaf. These veins are representative of
what I consider to be the organic and synergistic nature of the framework. Each of the factors in the pedagogical environment is represented on a spectrum, with a balance between the left and right-hand sides. The interaction and resulting synergy between the factors is represented by the small vertical lines. Each pedagogical environment using this Creativity Framework will be unique, with different blends and relationships between each of the factors. The following diagram represents a generic version:

Figure 7.2

Relationship between factors

Viewing all these factors together, there is a question about which factors make the greatest contribution and impact on children's creativity. Given this study's scope, it is not possible to determine the extent of contributing factors at this point. However, the data strongly suggests there are many relationships between the different factors. One of the reasons it is best described as a *dynamic* framework is that there is constant interaction between the factors, and a change of one factor can affect another. As discussed in Chapter 5, in some cases the children's enculturation helped their familiarity with the music, which in turn helped develop their confidence. The use of metaphor and multiple contexts also helped inspire the children's motivation, allowing for greater experimentation to occur, which influenced the children's capability for free improvisation. Familiarity with the music improved the children's confidence and, hence, their musical fluency, and there are many other examples. From these
relationships, it is reasonable to conclude that there are benefits from having a fair number of the factors in the pedagogical environment, rather than just a few or using each in isolation: essentially, an argument for the whole being greater than the sum of the parts. While the pilot workshops appeared to function synergistically, further exploration could identify whether it was at the optimal level to enhance creativity when all of the factors were combined and interacting.

**Summary**

In this study, I have tried to identify a blend of factors in world music workshops (and the relationship between them) that is likely to contribute to the development of children’s creativity in a framework. The research has yielded ideas on some factors, their interactions, and how they enhance creativity, but it is difficult to be definitive about an optimal blend. This very much depends upon each specific environment—factors including teachers, children, and specific musical traditions. However, the factors that are part of the pedagogical environment that supports a Creativity Framework can arguably be defined generically. In the case of this pilot, I have discussed the specific blend of factors that have yielded a level of enhanced creativity in the children who participated. This is one example of how a pedagogical environment conducive to creativity can be constructed.

Using this study as a basis, further insights can be gained about the nature and effect of specific factors in different socio-cultural environments. It is reasonable to deduce that different blends and interactions of the key factors will give rise to different outcomes. The importance of this study has been to explore how world music workshops can contribute to children’s creativity development in general and, from this, to identify some of the key factors in the construction of a Creativity Framework. By illuminating the links between characteristics of creativity and world music education, this study has tried to demonstrate how even a relatively short experience with world music learning can play an integral part in the enhancement of children’s creativity. Future practice and research is needed to fully show the validity and potential of this framework, as the importance of developing creativity is increasingly recognised in music education and education in general.
References


[https://experts.griffith.edu.au/publication/nce72bf3b8691d8b770c68d80ef6779e5](https://experts.griffith.edu.au/publication/nce72bf3b8691d8b770c68d80ef6779e5)


Bibliography

Further reading on topics and theories that informed the author.


APPENDICES
A. Survey and Interview Questions

As part of the case studies, surveys and semi-structured interviews were conducted with the various participants. These were implemented as follows:

- Parent/carer and child completion of surveys at the start of the study
- Child participation in interviews at the start and conclusion of the study
- World music teacher participation in interviews at the conclusion of the study

The surveys and interviews included questions that assist the research study to understand factors that influence children’s creativity. They focus on children’s perception and understanding of various world musics and teachers’ perception of the aspects of world music education that relate to creativity.

Parent/carer survey questions

- What is the age of your child/children who will participate in the world music sessions?
- Has your child had any previous formal musical education? Please provide details of any instruments and musical styles learned and length of time studied.
- Do you or your child/children listen to any music at home? Do you encourage this form of activity? Does this include world music? Please provide details.
- Do you or your child/children participate in any form of music-making or musical performance in either a social or educational environment? Do these activities involve any form of world music? Please provide details.
- What is your family’s ethnicity and cultural background?
- Do you feel creativity is an important skill? Please provide details.

Child interview questions (pre-workshops)

- What sort of music do you enjoy?
- Describe some of the musical activities that you enjoy doing and why? How often do you participate in these activities?
- Do you sometimes make up your own music? Can you describe this process?
- Children then participated in some listening exercises to assess familiarity and preference (using a Likert Scale measure) for a selection of world musics and some well-known popular and classical music pieces. Questions included whether they liked the sounds, how the music made them feel, what they imagined as they were listening and did they recognise the style of music played.
- For each of the different musics in this listening exercise: Can you draw a diagram or picture (you can use words, symbols and pictures) to show and explain this music to a person that had never heard this music before? Try and describe how you see the structure of the music, and consider the rhythm, melody, harmony and overall form of each music.
- How does your music teacher help you to learn? Can you tell me some of the best things about a music lesson and also some of the worst things?

**Child interview questions (post- workshops)**
- What sort of music do you enjoy?
- Do you sometimes make up your own music? Can you describe this process?
- For each of the different musics in this listening exercise: Can you draw a diagram or picture (you can use words, symbols and pictures) to show and explain this music to a person that had never heard this music before? Try and describe how you see the structure of the music, and consider the rhythm, melody, harmony and overall form of each of the different musics.
- Using stimulated video recall from the case studies, children were asked to describe their process of improvisation and how they were feeling as they did it.
- In thinking about the world music sessions, can you tell me what you liked or didn’t like about each of the world music teachers’ style of teaching?
- Has participating in the world music sessions changed your views about music?

**World music teacher interview questions**
- What did you learn from the recent world music sessions?
- Can you describe your process of improvisation and/or composition? In thinking about this process, what do you think is unique to your particular style of world music?
- Can you draw a diagram or picture (you can use words, symbols and pictures) to show and explain to a person that had never heard your world music before? Try and describe how you see the structure of the music, and consider the rhythm, melody, harmony and overall form.
- What is the balance between encounter and instruction in your teaching style and how do you feel this contributes to creative learning?
- How did you teach creatively during the world music sessions? Stimulated video recall will be used to prompt this discussion.
B. Webster’s Measure of Creative Thinking in Music

MEASURE OF CREATIVE THINKING IN MUSIC II (MCTM II) Administrative Guidelines

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Evanston, Illinois 60208
© Peter Webster, May, 1994

Administrative Guidelines

The following information is provided as a service to those professionals interested in administering this measure to children. The instrument has been given to over 300 individuals to date and the results made available in six separate studies by the author and other researchers. These studies are listed in the bibliography that follows this document and are also available from the author upon request. Technical information, including normative data for children ages 6 to 10, is also available.

Description of the Measure

Equipment and Setting

The Measure of Creative Thinking in Music (MCTM II) uses three sets of instruments: (1) a round "sponge" ball of about 4" in diameter that is used to play tone clusters on a piano (either in a rolled fashion or as individual clusters), (2) a microphone that is suspended in front of the piano and is attached to an amplifier and speaker, and (3) a set of five, wooden resonator blocks (temple blocks) that produce different pitches when struck by a mallet. The instruments are all in easy reach and can be played easily by children who have had no musical training. There is a brief warm up period that is not scored and is designed to familiarize the children with the simple techniques necessary to play the instruments. All activity takes place in a private room with only the child and the administrator. All tasks are videotaped unobtrusively and scored at a later time. It requires about 20 to 25 minutes to administer per child.

Additional equipment required includes: (1) a set of line drawings depicting space travel (included in these materials), (2) three pieces of blank paper, (3) (optional) an audio cassette player and blank cassette tape (re-usable for each child), and (4) a video camera and recorder with blank video tape in quantities suitable for the number of children to be tested.
Diagrammed on the following page (p. 305) is a suggested arrangement of the instruments and camera (seen from above). Other arrangements are possible as well.

Content

The measure consists of a series of 10 scored tasks, divided into three parts: exploration, application, and synthesis. The tasks begin very simply and progress to higher levels of difficulty in terms of divergent behaviour. The atmosphere is game-like in nature, with no indication that there are any right or wrong answers expected. The text used by the administrator is standardized for all children and few models of performance behaviour are given.

The exploration section is designed to help the children become familiar with the instruments used and how they are arranged. The musical parameters of "high/low", "fast/slow", and "loud/soft" are explored in this section, as well as throughout the measure. The way the children manipulate these parameters is, in turn, used as one of the bases for scoring. Tasks in this section involve images of rain in a water bucket, magical elevators, and the sounds of trucks.

The application tasks ask the children to do more challenging activities with the instruments and focus on the creation of music using each of the instruments singly. Requirements here ask that the children enter into a kind of musical question/answer dialogue with the mallet and temple blocks and the creation of songs with the round ball and the piano and with the voice and the microphone. Images used include the concept of "frog" music (ball hopping and rolling on the piano) and of a robot singing in the shower (microphone and voice).

In the synthesis section, the children are encouraged to use multiple instruments in tasks whose settings are less structured. A space story is told is sounds, using line drawings as a visual aid. The final task asks the children to create a composition that uses all the instruments and that has a beginning, a middle, and an end.

Specific text for the administrator and directions for administration are contained in Appendix I - Text and Directions.
Scoring

Individual Factors

The scoring of the video tapes involves both objective and subjective techniques. The scoring must be done by a professional who understands the factor meanings and can identify them in musical behaviour. There are four factors used, each derived from theoretical literature and from content analysis sessions with a panel of experts from the fields of music composition, music education and psychology:

*Musical Extensiveness* -- the amount of clock time involved in the creative tasks

*Musical Flexibility* -- the extent to which the musical parameters of "high"/"low" (pitch); "fast"/"slow" (tempo) and "loud"/"soft" (dynamics) are manipulated

*Musical Originality* -- the extent to which the response is unusual or unique in musical terms and in the manner of performance

*Musical Syntax* -- the extent to which the response is inherently logical and makes "musical sense"
The factors of Musical Extensiveness (ME) and Musical Flexibility (MF) are measured objectively by either counting the actual seconds of time a child is involved in a task (ME) or by observing the manipulation of musical parameters (MF). This objective work can be done with a stop watch and direct observation of the video tape. In most cases, one observation is sufficient. However, if a response is a complex one, a second observation is sometimes necessary for proper scoring of MF.

Musical Originality (MO) and Musical Syntax (MS) should be evaluated by a panel of judges for best results, however one observer is certainly possible. Rating scales based on carefully developed criteria are used for these factors. Some practice is necessary at first to achieve a sense of the proper rating categories. Once this is achieved, the scoring process becomes straightforward. In most cases, a rating for MO and MS can be assigned after two viewings.

Inexperienced evaluators are urged to view a random sample of children's performances in order to achieve an overall sense of the behaviour patterns. This is especially important for proper evaluation of MO and MS. A careful review of the scoring sheets themselves will also help to direct the evaluator to key points of observation.

For new evaluators, the scoring time necessary for one student performance might be as much as a full hour. However, with experience, forty to forty-five minutes is often the norm. Of course this time varies greatly with the length of the child's performance and the particular equipment used for playback.

One technique that seems to work well is to first score all children for the objective factors (ME and MF). This will take one complete observation of the tape(s). During this scoring, also note the point on the tape where the rating tasks occur. Re-wind the tape(s) and view only those tasks that require the ratings and score those sections.

Scoring Summaries

The Summary Scoring Sheet (displayed as the first page in Appendix II-Scoring Guidelines) indicates which tasks are scored for which factors. The user simply adds the scores in the factor columns for the total factor scores. These individual factor scores can be compared to normative tables which can be developed locally.

The measure is designed to yield a set of scores - a profile that can be used in identifying strengths and weaknesses. A total score is possible, however the user must convert each total factor score to a standard score and compute an average standard score across the four factors.
Appendix I

Text and Directions

Measure of Creative Thinking in Music

Procedures for Administration

Procedures for administration follow. The suggested text is in **boldface** type and general directions are in regular type face. As the tasks are described, note that some are scored (see Scoring Summary on p. 315) and some are not. The text for those tasks that are scored are indicated in *italics*.

It is extremely important that the administrator’s tone of voice and reinforcement remarks be consistent from person to person. It may be necessary to practice on a few individuals and study the video tapes to make sure that you are consistent. Also remember to avoid providing "models" of how you want the child to respond, except in those cases where indicated.

Warm Up

Hi, ____________. We are going to play some games. Let me show you some things which we will be using. Have a seat here in front of the piano. Let’s both talk into the mic.

"**Hello. My name is ______.** What's your name? (child responds) **How old are you?** (child responds) **Now try making some sounds in the mic that are not words. It can be anything!** (child responds) **Can you think of another sound?** (child responds)

If the child hesitates greatly, the administrator may need to give an example of a sound to get things started. The sound supplied should be short and as plain as possible, perhaps a whistle or a clicking sound.

**Did you hear that echo? OK! Now let's look at these temple blocks. Take this mallet and hit them.** (child responds) **Hit all of them many times!** (child responds)

**Good. Now try making some sounds by playing the piano with this sponge ball!** (child responds) I bet you've never played the piano this way before! Try playing several places on the keyboard.
Part I Exploration

Let’s try playing a game. Pretend that you are outside when it begins to rain. You are sitting on the ground next to a metal bucket when the raindrops just begin to fall. Can you make sounds on the temple blocks that would sound like raindrops in the bucket? (child responds)

Now pretend that you are next to the bucket during a raging thunderstorm. What would the rain in the bucket sound like then? (child responds)

The hope here is to have the children produce slow, then fast raindrop sounds on the temple blocks. It may be necessary to work with some children for a moment to get them to demonstrate their understanding of this, although most will do it automatically. For those that need a little help, try to be as non-directive as possible.

Task 1

Now let’s pretend that you are sitting next to the bucket for the whole storm. The raindrops begin to fall and little by little the storm begins to gather and get stronger until the rain is coming down quickly and heavily. What would that sound like? (child responds)

Let’s play a game with the piano now. Use the sponge ball and show me how the piano would sound if it talked in a low, “growly” voice. (child responds)

How would it sound if it talked in a high, squeaky voice? (child responds)

Task 2

Now suppose that you were going for a ride on a magic elevator. When you get onto the elevator your voice will be very low and gruff and then as the elevator goes up the floors your voice gets higher and higher and squeakier and squeakier. How would that sound on the piano with the sponge ball? (child responds)

Place the sponge ball next to the child and turn attention to the microphone.

Now let’s play a game with the microphone. Pretend you hear a truck that is very far away. Can you make a sound in the mic with your voice that would sound like the truck? (child responds)

Now let’s pretend that the truck is right in front of your house. What would it sound like then? (child responds)
Task 3

Now pretend that you are listening to the truck coming at you from very far off. First you just hear it in the distance and then it gets closer until it is right in front of you. Can you make some sounds into the mic with your voice that would sound like that truck? (child responds)

Part II Application

Now let's pretend that you are a robot from another world! Can you make some robot sounds into the mic with your voice? Don’t use words like you and I might use, because comes from another world. Try making some high, squeaky sounds and then some low, growly sounds. (child responds)

Good. Now try making some loud sounds and then some very soft robot sounds. (child responds)

Now can you make some fast and slow robot sounds? (child responds)

Task 4

Gee, I like those robot sounds. Now, I wonder if we could make up a robot song!?! I want you to pretend that you are the robot and that you are singing a song in the shower!! Now, don’t use words, because your robot does not know any words like you and I use, just use sounds like what a robot might use from another world! You may use any of the sounds you just made, or make up some new ones. You may put them together in any way you like to make up your song. You can have high robot sounds or low sounds, fast or slow, or loud or soft. Now, I want you to think about your song and when you think you’re ready, then go ahead and sing it! (child responds)

As with other tasks which are similar to this that follow, it is important to (1) remind the children of the musical parameters and (2) allow them time to think through the music before they begin.

The administrator should move to the rear and to the side of the child during performance so that the child will not be tempted to seek approval from the administrator for the various parts of the composition.

After this task is completed, move to the temple blocks. There should be two mallets placed by the blocks. The administrator should take one and the child the other. At the conclusion of the block tasks, the mallets should be returned to their place. In future tasks that might use the blocks, the child should be allowed the opportunity to use both mallets if desired.
Task 5

Let’s play a game now with the temple blocks. In this game, we are going to talk to each other on the blocks. You are to listen as I play first. When I stop, it will be your turn to play to me. You do not have to play the same thing that I play. You may play something different if you want to. You can make sounds that are high or low, loud or soft, or fast or slow. Are you ready? OK. Listen to me, then you play. (child responds after each stimulus)

There are six stimulus patterns in all. Each pattern is 3 pulses in duration, with a fourth beat of silence during which time the administrator should point to the child to cue him/her to begin the response. The administrator should choose in advance which blocks are going to be played for each stimulus pattern and keep that consistent for all children measured.

A variety should be chosen. Notated patterns and relative dynamic and tempo levels are indicated below for each stimulus:
Pattern | Dynamic and Tempo Level
---|---
1. | Loud, slow
2. | Soft, slow
3. | Loud, fast
4. | Soft, slow
5. | Loud, fast
6. | Soft, slow
Task 6

OK! Now you play some sounds to me and I will play some back to you. You can play anything you like.  
(child responds)

The administrator should imitate the child's pattern as closely as possible. Allow for seven interchanges.

Now move to the piano and the sponge ball. (Show the picture of the frog jumping.)

What is happening in this picture? (child responds) Can you show me with your hand the way a frog moves? (child responds) Using this sponge ball on the piano, can you make up some frog music that begins soft and little by little, gets louder and louder? (child responds) Now can you make some smooth, rolling sounds with the ball? (child responds)

Task 7

Great! Now it's time to make some more frog music! I would like you to make up a piece of music that has jumpy sounds and smooth sounds, soft and loud sounds, and fast and slow sounds. Feel free to use all the keys on the piano and to make your piece as long as you want. Now think about your frog music for a while and when you think you're ready, I would like to hear it. (child responds)

The administrator should move to the rear and to the side of the child during performance so that the child will not be tempted to seek approval from the administrator for the various parts of the composition.

After this task is finished, proceed immediately to the concluding set of tasks by placing the first space picture on the piano music stand.

Part III Synthesis

Boy, I liked your frog music. Now, we are going on a trip to outer space. I am going to show you some pictures that you might see. Look at this picture, first. (Show the space creatures picture.) Look at this picture of outer space creatures.

Task 8

Can you think of some sounds that they might make? Use your voice in the mic to make up as many sounds as you can. (child responds)
The administrator should always stand behind the child during the time of response, both in this task and those that follow. This discourages the child from looking to the administrator for approval for the sounds produced. The response is over when the child turns around and acknowledges completion. Put up the picture of stars in space.

*Can you use your voice in the mic and the sponge ball on the piano to make some sounds that go with this picture?* (child responds) Put up the space battle scene.

*Here is a big space battle! Using your voice in the mic, the sponge ball on the piano and the temple blocks, can you make some sounds that go with this picture?* (child responds)

Thank you! I really liked your sounds!

Arrange the pictures in the following order: (1) space ship taking off, (2) space creatures, (3) star scene, (4) space battle, and (5) space ship crashing.

**Task 9**

*Now let’s make a sound story out of these pictures. Let’s imagine that we take off, talk to some outer space creatures, fly through space, get into a space battle and then crash.* (Administrator should point to each picture as this is explained.) *Now, I’m going to close my eyes so that I cannot see the pictures. I want you to tell me this story using sounds. Pretend that you are in this space ship and that you are telling me this story through the music you make. You can use any of the instruments that we have been using. You can make high sounds and low sounds, fast and slow, high and low. It can be as long as you want. Now I want you to think about your sound story and when you think you are ready, I will give you a count down.* (Administrator should wait until the child is ready.) *Are you ready to take off? OK, here is your count down, 5...4...3...2...1...blast off!* (child responds)

**OPTIONAL:**

You might want to record the space story and have the child listen to their work while pointing to the pictures. This might help when rating syntax, however this does add more time to the administration of the measure. If you decided to add the recording, see the directions that follow. Otherwise, go on to Task 10.
Administrator should turn on the cassette tape recorder in order to record the sound story. This should be done without the child knowing it if possible.

Great! That was quite a sound story! Now I recorded your story on tape. Let’s go back and listen to it. As you listen, I want you to point to the picture that fits with the sounds that you make.

(Administrator should now re-wind tape and play the story back. Child responds by pointing.)

Task 10

Now, I have one more game for you. We don’t need the pictures because you are going to make up your own story with sounds. The only thing I ask is that it have a beginning, a middle and an end.

(Administrator should put up the three blank pieces of paper as this is said.)

You can use all the instruments in any way you want. Remember, you can use high sounds and low sounds, fast and slow, and loud and soft. It can be as long as you want. Just remember that it should have a beginning, a middle and an end. Now think about the music you would like to make and when you are ready, let me know.

Once the child indicates readiness, the administrator should let the child begin.

OPTIONAL

You may want to record this composition on cassette tape as well, asking the child to listen to their music and point to the blank pieces of paper. If so, do the following. Otherwise, skip to the last “thank you.”

Now let’s go back and listen to this. As you listen, point to the section that you are in, whether it is the beginning, middle or end (Administrator should now re-wind tape and play the story back. Child responds by pointing.)

Thank you very much. I enjoyed your music!
### Summary Scoring Sheet

<table>
<thead>
<tr>
<th>TASK</th>
<th>Musical Extensiveness (ME)</th>
<th>Musical Flexibility (MF)</th>
<th>Musical Originality (MO)</th>
<th>Musical Syntax (MS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Rain Bucket</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Elevator</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3 Truck</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>4 Robot Song</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Talking Blocks (Responses)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>6 Talking Blocks (Stimuli)</td>
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<tr>
<td>7 Frog Music</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>8 Space Pictures</td>
<td></td>
<td></td>
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<tr>
<td>9 Space Voyage</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10 Free Composition</td>
<td></td>
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</tbody>
</table>

| Raw Totals    |                            |                          |                          |                     |
Scoring Guidelines I  Measure of Creative Thinking in Music

Child’s Name or Other Identification _________________________

I. Part One: Factors of Musical Extensiveness (ME) and Musical Flexibility (MF)

(Enter score here and on the Score Summary Sheet)

Task 1 Rain Bucket -- MF

If child responds by beginning relatively slowly, then increases tempo gradually, award 2 points. If child shifts from slow to fast without gradual increase, award 1 point. If child does not increase tempo in any way, award no points.

MF1: ______

Task 2 Elevator -- MF

If child responds by beginning in the low register of the piano (bottom third of the keyboard) and progresses to the high register (top third) gradually, award 2 points. If child shifts without gradual motion, award 1 point. If child does not change register, award no points.

MF2: ______

Task 3 Truck -- MF

If child responds by beginning relatively softly, then increases loudness gradually, award, 2 points. If child shifts from soft to loud without gradual increase, award 1 point. If child does not increase loudness in any way, award no points.

MF3: ______

Task 4 Robot Song - ME

Record clock time in seconds from the beginning of the song until the end

ME4: ______
**Task 4 Robot Song -- MF**

If child responds by changing any parameter (slow to fast OR fast to slow; low to high OR high to low; soft to loud OR loud to soft), award 1 point for each parameter changed. Score an additional point for any change that is done gradually. Use boxes below by checking the appropriate space when change occurs. (Total number of possible points: 6)

**Gradual Change**

- Soft/Loud
- Fast/Slow
- High/Low

MF4: ________

**Task 5 Talking Blocks (responses) -- ME**

Record clock time in seconds from the beginning to end of each response. Total time for all six responses represents score.

ME5: ______

**Task 5 Talking Blocks (responses ) -- MF**

*Within a response*, if a child responds by changing the dynamics parameter (soft to loud or loud to soft) or by changing the tempo parameter (slow to fast or fast to slow), award 1 point for each parameter change. Also award 1 point for each gradual change in each parameter.

If changes also occur *from one response to another*, award 1 point for each parameter change. Finally, award 1 further point if, in any one response, all five blocks are struck. Use boxes below by checking the appropriate space when change occurs. (Total number of possible points: 7)

**Response to Within Stimulus Response Five Blocks**

- Soft/Loud
- Fast/Slow

MF5: ________
Task 6 Talking Blocks (Stimuli) -- ME

Record clock time in seconds for each stimulus performed by the child. Combine for a total score.

ME6: _____________

Task 6 Talking Blocks (Stimuli) -- MF

Follow guidelines described in Task 5 -- MF.

Response to Within Stimulus Response Five Blocks

Soft/Loud □ □ □

Fast/Slow □ □

MF6: __________

Task 7 Frog Music -- ME

Record clock time in seconds from the beginning of the frog music until the end.

ME7: ______

Task 7 Frog Music -- MF

Follow guidelines described in Task 4 -- MF.

Gradual Change

Soft/Loud □ □

Fast/Slow □ □

High/Low □ □ MF7: ________

Task 8 Space Pictures -- ME

Record clock time in seconds for each of the three pictures. Combine for total.

ME8: __________
Task 8 Space Pictures -- MF

Consider the child’s response for all three pictures. Award points for changes in each parameter for each instrument as described in Tasks 4, 5, and 6 MF, Boxes are provided below to record changes. (Total number of possible points: 17)

Task 9 Space Voyage -- MF

Follow guidelines as described in Task 8 MF.

<table>
<thead>
<tr>
<th>PIANO</th>
<th>VOICE/MIC</th>
<th>TEMPLE BLOCKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradual Change</td>
<td>Gradual Change</td>
<td>Gradual Change</td>
</tr>
</tbody>
</table>

| Soft/Loud | | | |
|-----------| | | |
| Fast/Slow | | | |
| High/Low | | | Five Blocks Used |

MF9: __________

Task 10 Free Composition -- ME

Record clock time in seconds from the beginning of the free composition to the end.

ME10: __________

Task 10 Free Composition -- MF

Follow guidelines as described in Task 8 MF.

<table>
<thead>
<tr>
<th>PIANO</th>
<th>VOICE/MIC</th>
<th>TEMPLE BLOCKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradual Change</td>
<td>Gradual Change</td>
<td>Gradual Change</td>
</tr>
</tbody>
</table>

| Soft/Loud | | | |
|-----------| | | |
| Fast/Slow | | | |
| High/Low | | | Five Blocks Used |

MF10: __________
Scoring Guidelines II Measure of Creative Thinking in Music

Child’s Name or Other Identification ________________________

II. Part Two: Factors of Musical Originality (MO) and Musical Syntax (MS)

(Enter score here and on the Score Summary Sheet)

Task 4 Robot Song -- MO

Listen for unusual musical aspects of the robot song. Consider:

1. Changing and/or unusual meters
2. Large and/or frequent dynamic contrasts
3. Changing tempi
4. Unusually large or small pitch range
5. Unusual use of words or sounds
6. Other musical aspects that seem unusual or particularly imaginative

Using a rating scale of 4 to 0 ("4" as the highest and "0" as the lowest), rate the child's performance in terms of its originality. For ratings of "3" or higher, briefly note the qualities that serve as the basis for your rating:

MO4: ______________

Task 5 Talking Blocks (Stimuli) -- MO

Listen for unusual musical aspects of the stimuli. Consider:

1. Changing and/or unusual meters
2. Large and/or frequent dynamic contrasts
3. Changing tempi
4. Unusual use of the instrument (i.e. special use of mallet(s))
5. Other musical aspects that seem unusual or particularly imaginative
Using the rating scale as defined in Task 4 - MO, rate the child's performance in terms of originality. For ratings of "3" or higher, briefly notate the rhythmic stimuli that are marked by their originality:

MO5: ____________

Task 6 Frog Music -- MO

Listen for unusual musical aspects of the performance. Consider:

1. Changing and/or unusual meters
2. Large and/or frequent dynamic contrasts
3. Changing tempi
4. Unusual use of the instrument (i.e. special use of the sponge ball and/or use of the hands)
5. Unusual use of direction change
6. Unusually large and/or small intervals.
7. Marked rhythmic complexity
8. Other musical aspects that seem unusual or particularly imaginative

Using the rating scale as defined in Task 4 - MO, rate the child's performance in terms of originality. For ratings of "3" or higher, briefly note the qualities that serve as the basis for your rating:

MO7: ______________

Task 7 Frog Music -- MS

Listen for the syntactical logic of the performance. Consider the following:

1. Return to a motive heard before
2. Elaboration through sequence and/or repetition or a rhythmic idea or melodic contour
3. Musical phrasing, with spots of relative repose
4. Complimentary rhythmic or melodic motion
5. Sensitivity to dynamics in relation to the whole

6. Awareness of piano tone quality and this awareness used to shape the piece musically

7. Sense of overall form

8. Other musical aspects that contributed to syntactical logic

Using the rating scale as defined in Task 4 - MO, rate the child's performance in terms of syntax. For ratings of "3" or higher, briefly note the qualities that serve as the basis for your rating:

MS7: ____________

Task 9 Space Voyage -- MO

Listen for unusual musical aspects of the performance. Consider:

1. Changing and/or unusual meters

2. Large and/or frequent dynamic contrasts

3. Changing tempi

4. Unusual use of the instruments

6. Unusual use of direction change

7. Unusually large and/or small intervals

8. Marked rhythmic complexity

9. Unusual use of words or sounds

10. Unusual musical combination and/or interchange between instruments

11. Unusual use of the body in playing instruments

12. Other musical aspects that seem unusual or particularly imaginative

Using the rating scale as defined in Task 4 - MO, rate the child's performance in terms of originality. For ratings of "3" or higher, briefly note the qualities that serve as the basis for your rating:

MO9: ____________
Task 9 Space Voyage -- MS

Listen for the syntactical logic of the performance. Consider the following:

1. Sensitivity of musical materials to suit pictures
2. Feeling of logical movement from one large event or set of events to another
3. Return to a motive heard before
4. Elaboration through sequence and/or repetition or a rhythmic idea or melodic contour
5. Musical phrasing, with spots of relative repose
6. Complimentary rhythmic or melodic motion
7. Sensitivity to dynamics in relation to the whole
8. Awareness of instrument tone quality and this awareness used to shape the piece musically
9. Feeling of musical climax
10. Sense of overall form
11. Other musical aspects that contributed to syntactical logic

Using the rating scale as defined in Task 4 - MO, rate the child’s performance in terms of syntax. For ratings of "3" or higher, briefly note the qualities that serve as the basis for your rating:

MS9: _____________

Task 10 Free Composition -- MO

Listen for unusual musical aspects of the performance. Consider:

1. Changing and/or unusual meters
2. Large and/or frequent dynamic contrasts
3. Changing tempi
4. Unusual use of the instruments
6. Unusual use of direction change
7. Unusually large and/or small intervals

8. Marked rhythmic complexity

9. Unusual use of words or sounds

10. Unusual musical combination and/or interchange between instruments

11. Unusual use of the body in playing instruments

12. Other musical aspects that seem unusual or particularly imaginative

Using the rating scale as defined in Task 4 - MO, rate the child's performance in terms of originality. For ratings of "3" or higher, briefly note the qualities that serve as the basis for your rating:

MO10: ___________

Measure of Creative Thinking in Music, Administrative Guidelines

© Peter R. Webster, May 5, 1994
c. **Sample of TCCT– Verbal and Figural Scoring**

Material removed due to copyright
Dear Ms Lindblom

I write further to the additional information provided in relation to the conditional approval granted to your application for ethical clearance for your project "NR: The potential of cultural diversity in music education to develop children's creativity" (GU Ref No: QCM/33/12/HREC).

This is to confirm receipt of the remaining required information, assurances or amendments to this protocol.

Consequently, I reconfirm my earlier advice that you are authorised to immediately commence this research on this basis.

The standard conditions of approval attached to our previous correspondence about this protocol continue to apply.

Regards

Rick Williams
Manager, Research Ethics
Office for Research
Bray Centre, N54 Room 0.15 Nathan Campus
Griffith University
ph: 07 3735 4375
fax: 07 373 57994
email: rick.williams@griffith.edu.au
Information Sheet and Informed Consent Package  
The potential of cultural diversity in music education to develop children’s creativity

Principal Researcher/Student: Shari Lindblom  
Queensland Conservatorium, Griffith University

Chief Investigator/Supervisor: Huib Schippers  
Contact email: h.schippers@griffith.edu.au  
Contact Phone: (07) 3735 6298

Why is the research being conducted?

This study will investigate whether cultural diversity in music education aids the development of creativity in primary school age children.

Participation and Involvement

Participation: Children will participate in an hour and a half weekly world music education sessions. These sessions will expose children to a selection of diverse world musics, in order to build children’s understanding of different sounds, rhythms, styles, techniques and musical structures. A key goal of these sessions is to ultimately facilitate a greater level of musical flexibility and creativity for the participants. Measurement will be through interviews, surveys, psychometric evaluation, and observation.

Involvement in this research will include

• Parent/carer and child completion of surveys at the start and conclusion of the study  
• Child participation in interviews at the start and conclusion of the study  
• Child completion of psychometric measures at the start and conclusion of the study  
• Teachers participation in interviews at the conclusion of the study  
• Participant consent via video  
• Participation in world music sessions

Confidentiality of records and reporting of results (Privacy)

In accordance with The Commonwealth Privacy Act 1988 and the Privacy Amendment (Private Sector) Act 2000 this research will protect the information gathered for the purposes of analysis.

The confidentiality of records will be maintained through the secure storage of data in a locked cabinet at the principal researcher’s residence. To ensure a direct flow of benefits back to the communities in which the research has been conducted, the research findings will be discussed with participants and presented in academic forums (conferences and journals).

Voluntary and confidential participation
All participation is entirely voluntary and all responses will be treated in the strictest confidence. All responses will be treated as anonymous. Participants will not be mentioned by name in the reporting of the research, nor will anything that could identify them.

Benefits: The aim of the study is to improve children’s musical and general creativity through a development of understanding and cultural engagement with the diverse musics included in the world music sessions.

Risks: While participants will have the right to withdraw from the study at any time without explanation, because of their age the participants may not understand this, or may feel uncomfortable asserting this right. Parents and carers may exercise these rights at any time. However, please be assured that the course has been designed to appeal to children of this age group and to provide an enjoyable, engaging learning experience. It is not anticipated that participation will be harmful or unpleasant for your children in any way.

Mechanism for distribution and return of information

Surveys will be posted or emailed to parents and carers of participants and they are requested to complete and return these two weeks prior to the commencement of the world music sessions.

Questions / further information

This research is being conducted as part of the principal/student researcher’s Ph.D. candidature at Griffith University.

Griffith University conducts research in accordance with the National Statement on the Ethical Conduct of Human Research (2007). If you have any concerns or complaints concerning the manner in which the research project is conducted, it may be given to the researcher or if an independent person is preferred they should contact the Manager, Research Ethics on 3735 5585 or research-ethics@griffith.edu.au.

Feedback to participants

Feedback will be given to participants, their parents, or carers at the conclusion of the study. Parents and carers will be forwarded results at the completion of the study if they have indicated on the permission form, or upon request. Participants will not be identified in the reporting process. A debriefing session will take place following the completion of the study.
Informed Consent

I, _____________________________ have read the information contained in this document.

I agree to (child’s name) ______________________________ participating in this study.

Child’s date of birth: ______________________________.

I understand that the results of this research are anonymous, and that (child’s name) ______________ will not be identified in any way.

I understand that (child’s name) ______________ involvement in this research will involve participation in music lessons for the course of the study.

I understand that the lessons will be recorded on video. These recordings will not be made public and are for the research purposes outlined in this document only.

I understand that my involvement in this research will involve completion of a survey relating to my child’s musical and socio-cultural background, which is to be completed at the beginning of the study.

My responses will be treated with the strictest confidence and will be used only in the manner and for the study described in this document.

This study, the risks involved, and the ethics have been explained to me, and I have had any questions answered to my satisfaction. I understand that if I have any further questions I can contact the research team.

I understand that participation in this research is voluntary and that I have the right to withdraw my child from this study at any time without consequence.

I have been provided with the contact details for the manager of Research Ethics at Griffith University and understand that I can contact him/her if I have any concerns about the ethical conduct of this project.

I understand that there will be a participation fee to be paid at the commencement of the world music sessions. This is required to compensate the world music teachers for their preparation and facilitation of the sessions.

I would / would not like to receive results from this study when they become available.

I would like the survey to be forwarded to: my postal address / electronically via email

Signature: __________________________________________________ Date: ______________________________

Relationship to participant: ________________________________________________________________

Address: ____________________________________________________________

Email: _________________________________________________________________

Thank you for agreeing to participate in this study. You will be contacted by the research team in due course.

Chief Investigator: Prof. Huib Schippers. Principal/Student researcher: Shari Lindblom. This research is being conducted as part of the principal/student researcher’s Ph.D. candidature at Griffith University and forms a component of her academic program.
E. Workshop Lesson Plans

Tabla

First Tabla Workshop:

Introduction (10 mins)

The aim at the beginning of each of the workshops was to facilitate children to develop an appropriate mood and state of mind that can heighten their creative ability. The activities in this part of the workshop are designed to promote a mental state of focus, clarity, enjoyment, relaxation and flow (the mental state of being completely present and fully immersed in a task). Using music and narrative, which combines the elements of rhythm and rhyme, imagery and also some movement, children were encouraged to develop these states of mind. The workshop’s introduction was designed to complement the main part, by relating the images, sounds and narrative to the relevant culture of that particular workshop.

Tabla Introduction (15 mins)

Dheeraj: Introduced the instrument and the music. He described where it comes from, its background and its role in Hindustani classical music. This was done through stories and demonstration.

Children then had the opportunity to feel and play the tabla. Two children shared a set of tablas between them. The basics of playing and the different sounds produced in an interactive manner were explained. This was facilitated by short demonstrations on the tabla by Dheeraj.

Tabla Basics (30 mins)

Dheeraj: Used a combination of vocal percussion (Bols) and strokes on the tabla to introduce the different possible sounds made by the tabla. This was taught by imitation and repetition in an interactive manner with the children. After the initial introduction, some children used vocal and some used tabla, to demonstrate the same sounds on both. Although no notation was used, Shari wrote the mnemonics on a white board to assist the children’s memory.

A kaida was presented first:

A kaida is a form based on theme and variation. A rhythmic seed or theme is introduced, which is then used as a basis for elaboration through improvisation and/or composition. For example, the
initial theme may be *Dha Dha Te Te*. This can then be changed and elaborated to highlight a different mood or expression.

A *tala* is a rhythmic cycle of a certain number of beats. The initial ones that children learned were *Tintal, Kherwa* and *Dadre*. For example:

**Tintal (16 beats)**

*Dha Dhin Dhin Dha | Dha Dhin Dhin Dha | Dha Tin Tin Ta | Ta Dhin Dhin Dha*

*Dha Dhin Dhin Nana | Dha Dhin Dhin Nana | Dha Tin Tin Na | Tetekata Dhin Dhin Dha*

**Kherwa (8 beats)**

*Dha Ge Na Tin | Na Ke Dhi Na*

**Dadre (6 beats)**

*Dha Te Te | Ta Dhin Dhin*

Dheeraj did some more advanced demonstrations during this section of the workshop to allow children to listen and hear some of the capabilities of this instrument, using these talas.

**Tabla Story (15 mins)**

**Dheeraj, assisted by Shari**: A variety of stories were read to children during the world music workshop program. By using a story, children can imagine and associate their musical improvisations and compositions to different aspects of the story. The theme of the story for the tabla workshops was the folk tale, *The Rabbits and The Elephants*. Dheeraj used the sounds of the tabla to bring this narrative to life for the children and allow their imaginations to engage and enhance their musical creativity.

**Following tabla workshops**

Over the following weeks, the classes reinforced their learning with repetition of the various kaidas and Dheeraj also introduced different combinations of these basic patterns.

The children had the opportunity to improvise using these basic patterns, with suggestion of ways to combine the patterns from Dheeraj.

The improvisations on the folk tale continued each week and the children gained more confidence in this activity.
Another improvisation activity was using the piano and tabla together. Shari and Dheeraj played piano and tabla together – using music that was aimed at creating the mood, sounds to portray the story. Heather narrated the main points of the story while we were playing. The children were then able to create their own sounds of the elephants, rabbits and water to accompany the story.

**Gamelan**

**First Gamelan Workshop**

**Introduction**

As described in the tabla workshop.

**Gamelan Introduction (15 mins)**

Julia: Introduced the gamelan and all its different instruments. She gave a short overview of gamelan music and described where it comes from, its background and its role in Javanese culture. This was done using demonstration and CD excerpts. The etiquette involved in playing the gamelan was emphasised to the children.

Children then had the opportunity to feel, play and hear the various instruments in the gamelan. Each child tried a different instrument. The basics of playing and the different sounds produced in an interactive manner were explained. The children were asked what each instrument sounds like to them or what they imagined when they hear the instruments played.

**Learning Gamelan First Piece (30 mins)**

Julia: A simple piece *Lancaran Ricik Ricik* was introduced. This was taught by demonstration, imitation and repetition in an interactive manner with the children. Although no notation was used, the numbers were written on a white board to assist the children’s memory. The balungan was taught first on all the instruments. Then the other parts were added (*kenong, gong, peking and bonang*). The children were asked to rotate to different instruments after they have had a chance to play a first one.

Notation:  

\[
\begin{align*}
\text{3} & \text{ 5  6 5  6 5 i } \text{ (x2)} \\
\text{3 2  3 2 i } \text{ (x2) (5} \\
\end{align*}
\]
The emphasis on the 4th beat, the different layers of sound produced by the gamelan and playing collaboratively were highlighted.

**Javanese Story (15 mins)**

**Julia, assisted by Shari:** The story for the gamelan workshops was *Kancil and the Magic Gong*, which tells of the adventures of *Kancil*, the mouse deer. Julia encouraged the children to try different improvised elements that relate to the narrative of this story, performed at the appropriate moments in the gamelan pieces. In the first workshop, the story was introduced, to allow children to think about it before the next workshop.

**Following gamelan workshops**

The *Ricik-Ricik* piece was revised and children had the opportunity to each play the various instruments in the gamelan e.g. drums, *saron, peking, kenongs* and gongs.

There was also activity involving a group improvisation, with one child conducting and directing each child to start and stop and different dynamic levels. The children were encouraged to listen to each other as they were playing. The children chose to play different instruments in each version and were able to experiment with different tempos and getting different timbres out of their instruments.

The improvisation for *Kancil and Magic Gong* was worked on over a number of weeks. For example we revised the Kancil theme (pekins and saron), humming sound on the gongs, Kancil running away from tiger, bees stinging the tiger to improve on different ideas and create new sounds.

In keeping with the gamelan concept of embellishing on patterns (Supanggah, 2011), Julia introduced a pattern on the *bonang* – 6 3 6 1 2 61612. This was used as the basis for the improvisations. With one child acting as the conductor of the ensemble, each child had a turn at playing the pattern on the *bonangs*, while the others tried to listen and create complementary sounds on their different instruments.

**Djembe**

**Djembe Lesson Plans**

The overall plan for the djembe workshops was to focus on the use of rhythm games, dance, song, and storytelling as avenues for personal and interpersonal development. In African societies, the arts are part of a child’s upbringing. The arts, especially traditional African performing arts, emphasise
relationship. It is this relationship that so effectively supports integrated development in the child. They emphasise their capacity to stimulate a child’s cognitive, emotional, and social development and in particular, their creativity.

These workshops had less planning than the tabla and gamelan ones, as Nii Armah felt it was important to let the methodology be guided by the class to a great extent.

Introduction

As per the tabla and gamelan introductions, but with the music and visuals relating to West Africa.

Djembe Introduction (15 mins)

Nii Armah introduced a variety of instruments to the class by playing them and then he encouraged various children to also experiment with playing them. The instruments included Axatse – a large round shaker with shells attached around it, Woosu-woosu (two hand held shakers), Kashaka (two hand held small round balls attached to strings that makes shaker sounds).

The djembe was introduced with a ‘call and response technique’. The children were shown how to hold the drum and then Nii Armah taught them a rhythm - 5 even strokes using alternating hands. Then we introduced a variety of different rhythms with 5 or 7 strokes (e.g. long, long, short, short).

The three basic sounds of djembe were discussed – 1) bass sound played with flat of hand in middle of drum, 2) tone sound played on edge of drum 3) slap sound played with gaps between 4 fingers on edge of drum. The importance of playing together as a group was discussed e.g. starting and finishing together.

Djembe Rhythms (30 mins)

Songs were introduced to both classes – ‘Che che le che’ and ‘Kilale’, meaning welcome. Nii Armah sang the songs and asked the children to repeat.

The older class learned a rhythm called Bashiba, which means ‘energy’. First they learned the introduction of the Bashiba rhythm:

\[ \text{pa-te-pa-te-pa, boom, boom} | \text{boom, boom, pa-te-pa-te-pa} \]

They then learned another rhythm:

\[ \text{pa-te-pa-te-pa, pa-te-pa-te-pa, boom, boom, boom} \]
Then both these combinations were put together – two times the Bashiba rhythm with one beat in between (Nii Armah used the Axatse to mark this beat), which was then followed by the second rhythm.

We also used vocalisations with the children to reinforce this rhythm. Nii Armah demonstrated how the rhythm would sound when played fast.

**Variety for the Finale (15 mins)**

Nii Armah showed the class the *dunun* drums – 3 drums small (*kenkene*), medium (*sambang*) and large (*dunun*). He played these drums while the class played djembe with a different accompanying rhythm.

Children had the opportunity to ask some questions at the end of the class, about the music, instruments, songs, stories, country and culture that they had been introduced to during the workshops. Nii Armah explained that the djembes had different carvings on them that represent symbols from his tribe in Ghana.

**Following djembe workshops**

The Bashiba rhythm was revised, refined and played in different combinations over the following weeks. In addition, other rhythms were also experimented with by the class.

Another song ‘Zongele’, was learned by the younger class, both the words and drumming rhythms. Nii Armah showed the class some movements for this song, which they enjoyed doing.

The *dunun* accompaniment played by either Nii Armah or myself was added to the Bashiba rhythm, to give an extra rhythmical complexity.

Nii Armah also sang some other songs for the children and told the class a number of stories through song. He played a variety of different instruments during these activities.

The storytelling activities with their accompanying instrumental improvisations were also part of the djembe workshops. I read an African folk tale – *The Clever Jackal* and children created a variety of different sounds on their djembes to accompany the tale e.g. jackal howling, jackal fearful, jackal trotting, lion lifting the rock, lion roaring cross, jackal bounding away.

Other improvisation activities included individual children leading the call by making up their own rhythms, with the class then responding.

Another activity involved each child experimenting with a dance to a rhythm played by the group.
F. Promotional Material: Flyer, Website and Video

Flyer – Recruitment and Promotion of World Music Workshops
Workshops for ages 6 – 10 years old.

15 weekly workshops, commencing July to October, 2013.

World musics include African Djembe, Javanese Gamelan and Hindustani Tabla.

Location: Griffith Young Conservatorium of Music, Southbank.

Part of research supervised by Prof. Huib Schippers, Head of QCRC, Griffith University.

For more details and bookings, please contact Shari Lindblom
Email: shari.lindblom@griffithuni.edu.au
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Website and Promotional Video

www.magictreeofmusic.com