UNIVERSITY OF CAPE COAST

A STUDY OF THE AESTHETIC RESPONSES OF UNDERGRADUATE STUDENTS TO MUSIC

GEORGE BLANKSON

2015

UNIVERSITY OF CAPE COAST

A STUDY OF THE AESTHETIC RESPONSES OF UNDERGRADUATE STUDENTS TO MUSIC

BY

GEORGE BLANKSON

Thesis submitted to the Department of Music and Dance of the Faculty of Arts, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy Degree in Music Education.

JULY, 2015

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this University or elsewhere.

Candidate's Name: George Blankson

Signature: ……. Date: ……..

Supervisor's Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Name: Prof. Isaac Richard Amuah

Signature: ……. Date: ……..

Co-Supervisor's Name: Dr. Eric Debrah-Otchere

Signature: …… Date: ……..

ABSTRACT

To yield the educational value of music education in schools, most music educators align music education with aesthetic education. Accordingly, the development of the aesthetic responsiveness and sensitivities of students have been widely embraced. Yet, there is little or no information regarding the delivery of music education which, in part, can contribute to the evocation of important aesthetic experience in listeners. This research work was an attempt to study the aesthetic responses of Ghanaian undergraduate students to music with the primary purpose of providing a strong information base for the delivery of music education in Ghana. Using a mixed method design, I compared the aesthetic responses of music and non-music students to six musical types. All subjects used the Continuous Response Digital Interface (CRDI) to track aesthetic responses to six different musical selections. Also, questionnaire administered after each listening experience asked subjects to indicate whether or not each had an aesthetic response. It was found that the frequency and magnitude of subjects' perceived aesthetic experiences were different for music and non-music majors. All subjects differentiated across the various musical selections, indicating relatively higher and lower aesthetic interest at various points within the music. Analyses of emergent data indicated that music students differed significantly from non-music students in aesthetic responsiveness.

ACKNOWLEDGEMENTS

I wish to express a heartfelt thanks and appreciation to my principal supervisor, Prof. Isaac Richard Amuah, whose selfless dedication, commitment, ideas and timely reminders have culminated in the completion of this work.

Also, I wish to extend my sincere appreciation to my co-supervisor, Dr. Eric Debrah Otchere for the inspiration and motivation to complete this work. I am particularly grateful for the deep insights he shared with me as well as the books and research works he made available for me to use.

To Katharina Langsch and colleagues, I extend my profound appreciation for the inspiration and encouragement. I am grateful for the opportunity to stay in Berlin and discuss my work at various platforms including a presentation at a doctoral colloquium at Potsdam University, Germany.

More so, I am thankful to all the lecturers, staff and students of the Department of Music and Dance for the cooperation, support and encouragement. I wish to single out for mention the Head of the Music and Dance department for the tremendous support he offered.

Finally, I extend profound appreciation to my father, Mr. George Blankson and my dearest siblings for all the love, care, prayers and support they offered me in diverse ways resulting in the successful completion of this work. To all those who have, in diverse ways, contributed to the success of this research work, I am grateful and thankful.

DEDICATION

To my two fathers who have lavished upon me love, care and support in diverse ways.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

CRDD	Curriculum Research and Development Division
CRDI	Continuous Response Digital Interface
CTG	Collective Temporal Graph
E.G	Example

CHAPTER ONE

INTRODUCTION

Background to the study

It is an ancient and pervasive idea that most people, more or less, respond to music. In fact, almost any human can report experiencing different feelings that would be regarded to have been generated by some piece of music. While some music may generate such feelings immediately, others depend on thought and knowledge. Much has been mentioned by researchers that music evokes or generates feelings in people (Reimer, 2009; Juslin & Sloboda, 2001; Langer, 1979). Another most familiar response to music for most people include overt movements such as tapping the beat to one's foot, swaying the body or dancing, goose bumps and gross behaviour changes.

In addition, as evidenced in the work of Bartlett (1996), responses to music can also result in marked physiological changes in the body, notably, changes in heart and pulse rate, breathing or muscular tension, among others. Understandably, some studies even show that the foetus responds to sounds and music in the environment (Amuah & Sracoo, 1996). According to Philips-Silver and Trainor (2007), responding to music appears to develop early, and it is fundamental to music processing throughout one's life; serving, possibly, the function of sharing aesthetic and emotional judgment of music with others. Taken together, the foregoing discussion underscores the centrality of the fact that responding to music is a necessary component, if not the essence, of any musical experience. And so, the idea of responding to music (physiological or psychological) is not a far-fetched phenomenon.

Now, owing to the ubiquity of music, which has been precipitated largely by a quantum leap in technology in the past decades, the range, diversity and accessibility of music to individuals and households have expanded remarkably. There is no gainsaying that "many people hear music everyday of their lives" (Hargreaves, 2001, p. 105). For better or worse, music is imposed on us in churches, offices, market places, schools and others too numerous to mention. According to Hargreaves, North and Tarrant (2006) "approximately 40-50% of most people's everyday lives involve music in some way, whether in passive listening, or in more active participation" (p.135). The implication of this is that the musical experiences of many people are by no means limited. Yet, let me say in passing that, many people who listen to music may be unaware of what music can do to them over a prolonged exposure (Otchere, 2013). By extension, this constant besieging of our senses with musical stimuli calls into particular attention the kind of musical experiences people encounter. It is, perhaps, more accurate to consider the nature and type of responses people experience every day principally through listening to music. What are the responses to the different kinds of music people listen to everyday? What are the reactions of people to various musical excerpts and what informs such reactions or responses?

To address such questions, McDermott (2012), in part, suggests that, normally, hedonic and aversive responses occur prominently as people experience music. While some types of music are considered by people to be relaxing, beautiful, enchanting or pleasant, other musical types are considered to be otherwise unpleasant and awful. In the same vein, according to Shimamura (2013), as people experience art works, responses such as disgust, surprise, anger, sadness, horror and a myriad of other emotions can be generated.

It remains to ask, what makes some encounters with music pleasant and self-rewarding and others not for people? How do we appreciate a work of music? Philosophers, psychologists and recently neuroscientists have sought answers to these questions both with focused and interdisciplinary approaches. The idea of aesthetics as a philosophical or scientific enterprise has provided valuable insights concerning the nature and value of arts works, including music. The field of aesthetics has offered insightful ways of appreciating and broadening experiences with art works in general. As early as the fifth century, philosophers (Plato and Aristotle) thought deeply about the nature and value of music, and developed conceptual approaches of aesthetic experiences (see literature review in Chapter Two for a detailed discussion). Specifically, psychological and brain sciences have shed important lights on our understanding of aesthetic responses to music.

Accordingly, most music educators justify the teaching and learning of music in basic schools on the basis of Aesthetic Education. Leonard and House (1959) hold that the development of people's responsiveness to the aesthetic qualities of musical works is the only basis for music education. To them, the core essence of music education in general education is to assist students to develop the ability to perceive and respond aesthetically to music. In the same vein, Peters and Miller (1982, as cited in Elliot, 1995) conclude that "the best use of music in the schools and the best reasons for the inclusion of music in the curriculum stem from music as part of what has been known as 'aesthetic education" (p. 28). Congruent with the foregoing, Reimer (1989) reaffirms the notion that music education ought to develop our responsiveness to the aesthetic qualities of sound. Clearly, at the heart of the foregoing quotations, is the persistent emphasis on conceptualizing music education to be aligned with the aesthetic concept of music.

Appropriately, there is a plethora of writing and research works with essential claims that remain congruent with the axioms of music education as aesthetic education (Reimer, 2009; Amuah & Sracoo, 1996). For example, McDermott (2012), maintains that music is the domain in which our aesthetic response to sound is most obvious and striking. He states further that for a typical human listener, music can be a highly rewarding stimulus. In contemporary societies, where music is universally present and accessible (Dutton, 2002), aesthetic responses to music such as aesthetic judgment (judging a piece of music as beautiful), aesthetic emotions (awe, enjoyment, nostalgia), aesthetic taste or simply enjoying a piece of music are important and frequent occurrences which develop early in life and lingers.

By keying in on the construct 'aesthetic response', Barrett (2006) claims it is one of a constellation of related terms and concepts such as aesthetic preference, aesthetic judgment, musical preference and music appreciation. For him, these terms are employed, predominantly, in music education (both theory and practice) when attempting to "describe and/or define the nature of music knowing, experience, and judgment" (p.173). Indeed, like many other concrete terms, the very object of interest, *aesthetic response*, is prone to heavy and serious debate. The main plank for such controversy is rooted in the fact that aesthetic experience is a multidimensional process composed of several components and stages, some of which are involuntary and implicit.

Now, to single out the construct (aesthetic response) for operational delineation, the Greek word *aisthesis*, literally meaning sense experience or perception, is the etymological root of the word aesthetics (sometimes spelled esthetic) (Sparshott, 1982). Although the philosophical study of artistic pursuits

can be traced to the Greeks (as evidenced in Plato's Symposium), *aesthetics* was coined by a German philosopher, Baumgarten in 1735. To the Greeks, art was conceived as a process more than as a product or entity. Virtually, Western philosophical thinking differed from the Greeks. In his *Critique of Judgment*, Kant in 1790 was of the view that aesthetic experience depended on our intuitive sense and perceptual faculties to perceive the formal qualities of an object, in order to make direct, personal judgment in a 'disinterested' manner. In other words, according to Kant, beauty in objects must be apprehended without consideration to external factors. Likewise, Sparshott (1982) believes that aesthetics, the umbrella term for all philosophical and scientific inquiries, was concerned with artistic efforts and people's responses to them.

From the initial stages, Baumgarten had a definite interest of establishing a field of inquiry that would analyse poetic imagery. However, during the eighteenth and nineteenth centuries, the precincts of aesthetics extended rapidly to comprise the study of visual images and objects, music works and ultimately natural things like sunsets, flowers and landscapes (Elliot, 1995). It is apparent that central to the discussions of aesthetics is a concern for the value judgment reflected in the expression of an object as beautiful. Generally, art works are the prototype domains for issues of aesthetic research, though natural things (sunsets, rainbow and landscape) may also be treated as aesthetically relevant. According to Radocy and Boyle (2003), although it is in relation to art and its value or meaning that the term aesthetic is mostly employed, aesthetic feeling may also result from interaction with nature. To recast the above discussion in terms of music, today aesthetics is commonly used to denote the nature, meaning and value of musical works and the sensory experiences of the human existence.

The latter term "response", according to Barrett (2006, p.173) implies "the end-point of some form of an interaction; one that could be the result of precipitate stimulation, behaviourist training, or, considered reflection." Put simply, an action or change in condition evoked by a stimulus is referred to as 'response'. It is important to note that responses can be varied and take on many forms. Hargreaves (2001) notes that, musical response covers a very wide range of human experience.

Aesthetic response is, in the words of Leder, Belke, Oeberst and Augustin (2004) the amalgamation of constant interaction of both cognitive and affective responses to music, resulting in an aesthetic emotion, which in many cases is both pleasing and self-rewarding. This view is based on the assumption that cognitive and affective responses are reciprocally linked (Scheerer, 2003). The rallying point expressed here is that a rather complex network of stimulus, personal experience and situational context all come into play in an aesthetic experience (Jacobsen, 2006). The foregoing shares in common with earlier philosophical conceptualization of aesthetics: that the end-point of such interaction with an art work is a reflection of value judgment. And such reflection is a product of cognitive and affective processes of an individual. Given its diversity, the study of aesthetics, can be couched in philosophy, psychology and sociology. This is given a thematic treatment in Chapter Two under the literature review. However, the primary focus in this study is the place of aesthetic experience in music education.

As stated before, research on aesthetic response to music has generated a large body of knowledge. A good starting point is to trace experimental studies of aesthetic responses to the work of Binet (1903). His research (*Experimental study of Intelligence*) was much slanted towards ascertaining the types of apprehension

or apperception. Binet, Myers and Valentine (1914, as cited in Hargreaves & Colman, 1981) studied the individual differences in attitudes toward tones in large samples of subjects. Later, Myers (1922) extended this research to include real musical materials. Since these ground-laying findings were obtained, a good number of studies have also examined the relationship between variables such as complexity, familiarity and predictability of music and various measures of the aesthetic response. For instance, Hargreaves (1986) was interested in the degree to which one likes and/or dislikes a piece of music and the level of subjective familiarity. The study revealed that familiarity with the music led to an increase in preference. Similarly, Silvia (2005) identified that the variables: novelty, complexity and predictability, had effects on the aesthetic emotions of interest and enjoyment. According to Davis (2003), some music psychologists have devoted considerable attention to investigating which musical elements are necessary for people to have an aesthetic experience. Among some of the musical elements researchers have explored include rhythm, timbre, harmony, dynamic levels and melodic contour. In a classical review of the studies on aesthetic responses, Davis (2003, p. 60) concludes that "much research on aesthetic response has focused on listener preference." There is heavy emphasis on comparison of musicians and non-musicians in listening preference. According to Davis's review, little variations exist between the two groups (musicians and non-musicians). In a related study, Amuah and Sracoo (1996) observed the ability of students to respond to the expressive qualities of music. In their study, it was concluded that "improved musical behaviour is a function of age" (p. 63). This array of enlisted studies is a testimony to the fact that the axioms of aesthetics have shaped and influenced the thinking of many music educators. More importantly, it underscores the fact that music education, among other things, must assist

students to develop aesthetic appreciation for the music they listen, perform and create. No wonder, in his oft-cited book, Reimer (1989) claims the ultimate goal of music education is to lead to the attainment of "profound feelingful reactions to music" (p. 46).

As an upshot to the above, most music educators align themselves with perspectives of music education as aesthetic education (Davis, 2003). Generally, in the history of Western music education, Jorgensen (2003, as cited in Davis, 2003) notes, two streams of musical thought, namely *Musica Practica* and *Musica Theoretica.* These have existed side by side, sometimes integrated, other times adjunct but both impacting the practice of music education. On the one hand, scholars, notably Reimer (1989), have reasoned that for a more complete understanding or perception of musical elements, musical experience must include a learned aesthetic response. To these scholars, music appreciation and aesthetics is best taught through listening to and analysing musical works. On the other hand, Elliot (1995) has vigorously contended that an aesthetic experience or response is acquired first through participation in or the practice of music. Nonetheless, contemporary philosophers and educators have argued for the use of both approaches. As a result, music education as aesthetic education seems to hold its sway the world over.

Music education in Ghana, in one way or the other, is closely aligned with perspectives of music education as aesthetic education. In an article, Ohene-Okantah (1996) attempts to situate Reimer's philosophy of music education as aesthetic education in the context of African music and explores some of its useful implications for music education in Ghana. In the same vein, Amuah

(2010) avers that the delivery of music education in Ghana must be based on socio-emotional education. The crux of Amuah's philosophy is that:

> Music education as an instrument for socio-emotional education engenders two major goals: to develop individual's sensitivity to music and, thus, enhance the process for his/her emotional development as well as the use of music as a tool to pursue the agenda of social solidarity and development (2010, p.188).

A manifestation of this is the heavy emphasis on developing aesthetic appreciation which is a latent function of the music programs of the Universities. Specifically, in some Ghanaian Universities, students are permitted to take courses like aesthetics of music, music appreciation and aural culture. Virtually, this phenomenon is no different from music in the secondary and basic schools. For instance, according to the teaching syllabus for creative arts (CRDD, 2007; p.11), teachers must take note of the following:

a) Perceptual growth (using the sense in exploring, observing the environment and performing creative activities).
b) Emotional growth (the pupils' feelings, attitudes and responses to what he/she thinks, sees and does).
c) Aesthetic growth (the pupils' ideas and response to beauty through appreciation and valuing).

As evident in the above, to a large extent, the music education program operated at the various educational levels in Ghana is congruent with the axioms of aesthetic education. More or less, most music educators agree that music

education must, among other things, develop the aesthetic appreciation of students. This granted, it remains to ask if the music education program (with emphasis on aesthetic development) captures the essence and meaning of music to Africans within the context of the role, value and performance practices of music in our culture. Obviously, Reimer's philosophy of music education as aesthetic education has some very useful implications for music education in Ghana. But as Oehrle (1991) cautioned, music education must take into consideration the modes of thinking and ways of music making in Africa. Likewise, Nketia (1999) notes rightly that:

> Philosophies of music propounded for particular cultural environments such as the philosophy of aesthetic education cannot be copied or borrowed lock, stock and barrel. Though each one dealing with a particular human condition, cultural ideals or values or problems of transmission and reception in music may have something to offer, it may not provide all the answers that may be needed in the African context (p. 10).

The foregoing assertions set the tone for developing a music education program that attempts to factor in the African perspective into the equation of aesthetic education. Ideally, to do this, one requires scientific research to inform choices and practices. In Ghana, the need for a strong knowledge base to inform musical practices cannot be adequately stressed. For this reason, a quality music program which is targeted, among other things, to develop aesthetic responsiveness of students must be informed by empirical evidence. According to Boyle and Radocy (1987), it is apparent that decisions on musical development

may have vital and long-ranged consequences on individuals, schools, community and societal goals for music education. Therefore, it is imperative for studies to be carried out to, first and foremost, ascertain the level of aesthetic responses of students to different types of music in order to assist in conceptualizing and developing a music education program that is well suited for Ghanaian students; and this is a primary goal for this present study.

The foregoing underscores the need for music educators to carefully design a framework (especially one that takes into account the Ghanaian perspective) to assist students to respond aesthetically to music. As such, one of the initial steps is to study the responses of students to music. It is for this reason that this present work studies the aesthetic responses of undergraduate students to music.

Statement of the Problem

Generally, there is a large body of extant literature on aesthetic experiences and responses. Much research on aesthetic response to music has focused on listener preference (e.g. Madsen & Geringer, 2004; Flowers, 2002; Frega, 2001; Capperella-Sheldon, 1993). Other researchers have also explored various measures of the aesthetic response, such as the degree to which one likes or enjoys a piece of music, in relation to different variables such as complexity, novelty, familiarity, predictability, just to mention a few (Silvia, 2005; Hargreaves, 1986). Furthermore, there are also a considerable number of studies that view aesthetic response to music as a function of age, education and socio-economic status (Madsen & Geringer, 2004; Amuah & Sracoo, 1996). Two things all of these previous studies have in common are that:

a) fundamentally, the aesthetic experience is a human experience (Reimer, 1989);
b) these studies are Western oriented in content and approach.

Once one begins to consider the depths and components that could make up aesthetic response, it becomes clear that the arena would include a broader realm of human endeavours. Indeed, aesthetics of music will include and require studies from different angles, perspectives, approaches and locations to shed more light on human sensitivity and responsiveness generally. Research to date has brought us a large body of knowledge, but much more yet needs to be done.

Apparently, despite the general extant literature on aesthetic experiences and responses, no study has been done in Ghana that focused on eliciting the aesthetic responses of undergraduate students. Yet, music education in Ghana is aligned closely with aesthetic education. Perhaps, studies which come close to this have broadly covered overt/verbal responses to music and listener's ability to identify intrinsic qualities of a musical stimulus. However, in this study, the focus goes beyond preferential judgment or response to a musical stimulus. By way of extension, my goal is to attempt to correspond the aesthetic peaks of students with musical elements and dimensions that are mostly associated with such responses. In other words, this present work looks at which musical devices drive the aesthetic responses of students. This will yield vital information for the development of an aesthetic framework that encapsulates the Ghanaian culture and music. As Nketia (1999) rightly puts it, "aesthetic education cannot be copied or borrowed lock, stock and barrel" (p.10). There is the need for a strong informational base to support teaching of music in schools. Any aesthetic stance to be used as a basis for teaching music must be relevant to the society in which

we live and satisfy the general conditions under which the Ghanaian education operates.

Amuah and Sracoo (1996) identified a problem that places the need for an empirical evidence to back the delivery of music education in Ghana into proper perspective. They note that, "it has been observed that very few people respond to music aesthetically, a process that involves, not only reacting to the expressive qualities of music, but also responding to it feellingfully" (p.48). This phenomenon, according them, is due to the fact that most people listen to music for the sheer pleasure of musical sounds. And as a result, most people do not derive maximum benefits from the music they listen to. Although musical behaviours like performance, composing and analysis could stimulate musical experiences (aesthetic experiences), listening is the foundational interaction to a musical experience and a channel through which people experience the power of music. It follows then that to improve the quality of musical experience, it is fundamental to improve the ability to listen with perceptual discernment and affective sensibility.

On a closely related point, despite its fundamental place in any musical experience, relatively few empirical studies have addressed conceptual approaches to listening to music in Ghana. Even so, most previous studies employed either verbal or written data acquisition techniques in measuring perceived musical expressions of listeners to musical performance. The problem is not only about the need to augment the extant literature, but also the techniques employed for data collection in previous studies. Scholars, like Asmus (2009) have highlighted the potential flaws associated with the verbal or written measurement strategies for assessing musical responses. Suffice it just to mention that according to him, while most people find it difficult to vividly verbalize their

musical experiences, written measurement strategies predetermine responses of subjects and therefore bias results.

By keying in on data acquisition strategies, a technology based measurement strategy such as Continuous Response Digital Interface (CRDI) has a relative advantage over the traditional ones. Through the use of equipment that allows for real time tracking of responses to music, researchers are rigorously exploring how individuals and groups perceive and interpret musical information as it is presented during the act of listening. Consequently, this measurement tool has been used widely in preference research, emotional, affective and aesthetic responses to music (Madsen & Geringer, 2004; Capperella-Sheldon, 1993). In Ghana, no study has focused on measuring perceived musical expressions (responses) of listeners to musical performance with a CRDI despite its relative advantage over the verbal and written measuring strategies. Hence, this calls into particular attention the need to incorporate the CRDI into studies of music listening nature conducted in Ghana.

Purpose of the Study

Generally, the purpose for this study was threefold. My primary purpose for undertaking this research was to explore the nature of aesthetic responses of undergraduate students to different musical genres (using six broad musical types specified by studies on musical preferences of college students). Stemming from this, specific objectives of the study were:

a. To study the aesthetic responses of Ghanaian students to different musical types.

b. To find out if there was a significant difference in the aesthetic responses of Ghanaian music and non-music students to different musical types.
c. To study if there was a significant relationship between familiarity of music and aesthetic responses of Ghanaian students.
d. To explore a possible relationship between Ghanaian students' participation in a musical groups or ensembles and aesthetic responses.

Research Questions

Based on the purpose of this study, the following research questions were set to guide the research:

a. What are the aesthetic responses of Ghanaian undergraduate students to different music types?
b. What differences exist in the aesthetic responses of Ghanaian music and non-music students?
c. What is the relationship between familiarity of music played and aesthetic response among Ghanaian students?
d. To what extent does participation in musical groups influence Ghanaian students' aesthetic responses?

Research Hypotheses

The following null and non-directional alternative hypotheses were set to statistically test the three research questions above (excluding the first research question):

1) **H_0 -** There is no significant difference in the aesthetic response of Ghanaian undergraduate music and non-music students to different musical types.

   H_1- There is a significant difference in the aesthetic response of Ghanaian undergraduate music and non-music students to different musical types.

2) **H_0-** There is no significant relationship between aesthetic response and the familiarity of music played to Ghanaian students.

   H_1 -There is a significant relationship between aesthetic response and the familiarity of music played to Ghanaian students.

3) **H_0 -**There is no significant relationship between Ghanaian student's participation in musical groups and aesthetic response.

   H_1- There is a significant relationship between Ghanaian student's participation in musical groups and aesthetic response.

Significance of the study

Through this study, the empirical research on aesthetics and music will be augmented. In other words, this study will add to the literature on aesthetics related to music. Generally, many theories and studies concerning aesthetic experiences are tethered to aesthetics response to paintings and sculpture. Hargreaves and Castel (1987) claim that the aesthetic research has remained

lopsided in favour of the figurative arts at the expense of performing arts such as music, dance, drama and theatre. Yet, it is through music that our aesthetic responses are most striking and profound (McDermott, 2012). And so, this study is an attempt to redress the imbalance, by filling in the gaps in the empirical field of aesthetic experiences in music.

Furthermore, the findings of this study, it is hoped, will vastly influence the delivery of music education in Ghana. This study will provide a strong informational base for developing a framework to assist students to respond aesthetically to the music they listen to. As Reimer (1989, p.10) points out, "practice must be grounded in a secure philosophy", music educators, scholars, teachers and curriculum planners, informed by the empirical evidence of this study, can develop theoretical conceptions for the delivery of music education in Ghana.

In addition, this study will provide music educators with relevant data for the selection of learning activities and musical repertoire for use in the classroom. This study will assist music educators to decisively select songs or suggest types of music to be studied in schools, having a good idea of what musical variables drive the aesthetic development of students. As such, this study will provide relevant data on what underpins the aesthetic responses of students, which can be used to consciously hone in on the pertinent variables, and thereby enhance the musical appreciation and aesthetic responses of students by making those responses more focused.

Beyond the classroom, composers, performers, advertisers, teachers, parents and all music stakeholders can also incorporate the findings of this research into their respective activities. Knowing which aesthetic devices drive

aesthetic response of students, composers and performers can purposely employ musical resources that will engender aesthetic responses. Lastly, the findings of this study may initiate a forum for further discussions concerning aesthetic responses.

Need for the study

The centrality of the need to make aesthetic encounters ecumenical for people has become apparent. Viewed historically, aesthetics has attracted the attention of many scholars. Given its diversity, the study of aesthetics has promoted dialogue among people in various disciplines, including philosophy, psychology, sociology, musicology, music education, empirical aesthetics and most recently neuroscience. Recent debates have given way to an interdisciplinary approach to studying and understanding aesthetic experiences. Emerging from the study of aesthetics are divergent theories, models, research methodologies and assumptions. Indeed, a summary of a review of all that pertains to aesthetics will simply exhaust this study. Although researchers have made substantial strides in illuminating the complex interaction of many factors and processes that underlie an aesthetic experience to music, the literature indicates the need for much additional research to be carried out. Due to the fact that individual differences, dispositions, expertise and values that people bring to an aesthetic encounter differ (Silva, 2005), conducting studies with diverse samples and musical stimuli will increase the chances of hiking up the right path.

To recast this study into perspective, the sample (Ghanaian undergraduate students) and the inclusion of musical types like Ghanaian traditional and popular music used here are different from all existing works on aesthetic response. Also,

the study attempted to explore the influence of participation in music group on Ghanaian students' aesthetic response.

In particular, the need for this study is further heightened by the necessity to develop a framework that is suited for the delivery of music education in Ghana. In their oft-cited book (2003), Flolu and Amuah, make a striking report that "very few people, if any, who pass through the school system are given the opportunity to develop skills in effective music listening" (p.124). Yet, many people in Ghana experience music through music listening activities. Therefore, there is the need for studies to be carried out to develop a framework to help people respond aesthetically to music.

Delimitation

The purpose of this study was to explore the aesthetic responses of Ghanaian undergraduate students to different musical types. With respect to this, the parameters for this study were set. To this end, reasons why certain dimensions or types of music were identified by subjects to be more pleasant or interesting than others are not prime subjects of this study. At best, I offer logical speculations based on what the literature indicates, personal experiences and observation. Also, the aesthetic responses of participants in this study were measured with Continuous Response Digital Interface (CRDI) and its accompanying exit questionnaire.

Finally, the population target used for this study was undergraduate students from a public university in Ghana. By focusing on the aesthetic response, this study perceived, interpreted, deduced, inferred and concluded within the scope of the selected population target.

Definition of Terms

Aesthetic Response: For this study, in accordance with Shimamura's definition, I considered aesthetics as a 'hedonic' response (response to a sensory experience), "which is simply a judgment of preference or interest" (2013, p.2). He avers further that such responses can be graded from very positive to very negative or from very interesting to very dull. Given this definition, aesthetic responses transcend just the emotional thrill of 'wow' or just undergoing an emotional interlude an aesthetic response does more than just evoking a feeling of 'wow'.

Musical Preference: As used in this study, the term is associated with Hargreaves, North and Tarrant (2006) view that musical preference refers to "a person's liking for one piece of music as compared with another at a given point in time…" (p.135).

Music students: As used in this study, music students refer to participants who were majoring in music at the time this research was conducted.

Non-music students*:* Here, all participants who were studying any other subject apart from music in the University, at the time this research was conducted, were considered to be non-music students.

Organisation of Chapters

The next section will focus on the review of related and relevant literature. It will focus on what other authorities have said about various aspects of the research problem. This will help to clarify and streamline the research and give the study its focus.

The next chapter will be the methodology for this study, which will cover a description of the procedures by which data required for the study will be collected and analysed. It will specifically take a critical look at the research design, population, sampling and sampling procedure, research instrumentation, data collection procedure and data analysis. The next chapter will be the presentation of pertinent data collected from the field and the subsequent analysis and interpretation of the emergent data.

Finally, presentation of the summary of this study, suggestions and recommendations for future research will follow. References and the appendices used in the research work will also be presented.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

An essential early step in the research process, regardless of the approach adopted, is reviewing the accumulated knowledge about the variables of interest. According to Neuman (2003), the assumption for reviewing literature is that "knowledge accumulates and people learn from and build on what others have done" (p. 96).

Here, I look broadly at the literature on aesthetic responses to music, particularly focusing on the mechanisms that underlie or come into play in an aesthetic encounter. In this way, the literature on aesthetic experience as addressed by a variety of intellectual domains such as philosophy, psychology, sociology is reviewed. The primary focus of this section is to provide an overview of research findings reported in the past decade and how they have contributed to the understanding of aesthetic responses to music. Given the enormous corpus of literature related to the focus of this study, I carefully employed topical, thematic and conceptual approaches. By way of concluding this chapter, a summary of the main issues in the literature of aesthetic responses to music is provided.

Definitional Issues of Aesthetics

The subject of aesthetic response to music has attracted the attention of many scholars from diverse intellectual domains including philosophy,

psychology, music education and sociology. Consequently, the extant literature covering all these disciplines on aesthetics is enormous. Yet, what actually constitutes an "aesthetic response" has eluded a concrete definition. For centuries, scholars have pondered on those attributes of music that give meaning and lead to a heightened sense of emotion, intellectual engagement and a profound sense of awe - a general perspective of aesthetic response, although not univocally embraced by all scholars.

In what follows, I consider how various scholars from various perspectives have addressed these questions and the lights they have shed on aesthetic response. To begin with, it is appropriate to look at some philosophical approaches on the aesthetic concept.

Philosophical approaches on Aesthetic Response to Music

Throughout history, people have wondered about the nature and function of music - what it is all about, and why do humans seem to care about it so much. The branch of philosophy concerned directly and primarily with questions about the nature and value of the arts, and value judgment reflected in the expression of an object as beautiful is called "aesthetics". Now, it is important to note that the study of the nature of music, its effects and values, and human response has been a topic of philosophical debate since the time of early Greek philosophers. To the Greeks, music was a force that affected everything that existed (Abeles, Hoffer & Klotman, 1995). This conception of music, called ethos, underpinned the belief that music had an influence on the will, character and behaviour of an individual. In actual sense, the Greek concern is rooted in *The Republic* of Plato and *The Politics* of Aristotle, where Plato, for example, believed that music in Dorian and Phrygian modes could instil a sense of courage and soberness and restraint,

respectively. In the same vein, Aristotle is cited as noting that "if one listened to the wrong type of music he or she would become the wrong person" (as cited in Abeles, Hoffer & Klotman, 1995). Influenced by German romanticism and French classicism, many other scholars (Schiller, 1967; Maritain, 1924) sought explanation for arts (including music) from metaphysics and arithmetic problems respectively. Implicit in the aforementioned works are traces of various ways to conceive of music. Now, while the above discussion points out the divergent viewpoints, formalization of this discourse sprang from the work of Baumgarten (1750) under the rubric 'aesthetic'.

In the account of Baumgarten, who coined this term, aesthetics connotes "a type of understanding that occurs through sensory experience of the world, that is, through perception rather than conception" (Barrett, 2006; p. 174). From Baumgarten's initial concern with poetry, the boundaries of aesthetics widened rapidly during the eighteenth and nineteenth century to include the study of visual images, effectiveness of music and eventually all natural objects. Taking a cue from Baumgarten's ground laying conception, Immanuel Kant (1790) also thought that the faculty of judgment enabled people to have an experience of beauty and grasp those experiences as part of an ordered, natural world with purpose (cited in Kant, 2012). Furthermore, he reasoned, the apprehension of beauty in objects without consideration to external factors. This view enjoyed the espousal of many scholars until later other scholars (e.g. Hargreaves, 1989) emphasized the context and social use and production of a work.

Generally, philosophical enquiry into aesthetic response to music has centred on definitional issues concerning the nature of music, value judgment about its nature and quality of musical works as well as experiences. As a matter of fact, owing to the broad dimensions aesthetics of music has assumed, there are

as many aesthetical standpoints as there are theorists (Hanslick, 1986; Sparshott, 1982). Aestheticians have proffered theories, usually under various guises, to account for determining factors in making meaning and judgments of music. From the review of these theories, I noted that, from an initial emphasis on the rational, cognitive engagement with music separate from emotions and the sensuous, to contemplation of intrinsic qualities in abstraction to the context of social use and production, aesthetic theories expanded to assume various dimensions. Accordingly, writers have grouped aesthetic theories, as a way of providing a modicum of order, in dealing with theories of aesthetics. In general, most of these aesthetic theories (under various guises) fall into four major domains: Absolutism/Formalism, Referentialism, Expressionism, and Absolute-Expressionism.

Absolutism. According to the Absolutists account, the meaning of music is derived from contemplating exclusively on musical elements or structural qualities (melody, harmony, rhythm, timbre, dynamics, textual and form) in abstraction to the other experiences. Essentially, here, the listener considers a musical work purely on the basis of sensory features - that is the aesthetic interplay of musical elements and structures. Within the absolutist framework, there is an additional distinct view called Formalism. Formalists maintain that "musical meaning is primarily intellectual and based on perception and understanding of the formal structural relationships within a composition" (Radocy & Boyle, 2003). An absolutist may be a formalist when aesthetics is conceived as focusing exclusively on the so-called aesthetic qualities which give form to the music. However, the formalists restrict this capacity of contemplating on music to elites. In short, not all absolutists subscribe to the elitist view of formalists, but all formalists are absolutists.

Now, to recast the above discussion in terms of aesthetic response to music, the absolutist's (formalist's included) concept of music rests on three basic assumptions. The first assumption is that musical works exist to be listened to in one way: only by focusing on the aesthetic qualities (elements and structural properties of music). The second assumption is that the value of musical works is always intrinsic or internal. And finally, the assumption that if listener's listen to pieces of music aesthetically they will undergo a special kind of emotional or disinterested pleasure. Viewed historically, aesthetic theories under the rubric absolutism/ formalism, take their root from nineteenth century elitist view of the arts. As pointed out by Abeles, Hoffer and Klotman (1995), this elitist view holds that musical understanding and appreciation are the exclusive reserve of the intellectual elites. Here, the composers, conductors, critics and the likes are cited as people with extra-ordinary and superior ability to contemplate music.

This approach to aesthetics, although it underscores the uniqueness of music, artistic development and the need to educate the masses to understand the musical properties, is not immune to shortcomings. First, with its limitation to a 'special' group of people (music elites), it is doubtful if most average persons will ever appreciate 'great works of music (Abeles, Hoffer & Klotman, 1999). Second, the assumption that it is by attending solely to the formal properties of music that listeners will undergo an aesthetic experience limits the scope of musical experience. The possibility of music embodying or representing other sensuous or expressive power is eminent. Thus, to conceive of music in abstraction to any moral, social, religious, political, personal or otherwise practical connection that these formal qualities may embody, or represent, as claimed by the formalists, is woefully inadequate to account for the nature and value of music and lacks

practical usefulness. But as a theory of aesthetics, the absolutist/formalist claim holds some iota of truth and accounts partially for the nature and value of music.

Referentialism. As the name itself suggests, the referentialists hold that music refers listeners to non-musical ideas or associations. In other words, the meaning of music is derived 'outside' of the music. By and large, the culture of the music, the context of the performance, past experiences of the listener and lyrics of the music all serve to influence the meaning of music. Often when people hear a piece of music that represents or embodies an idea, emotions or events, they derive some meaning and value from the work. A clear evidence of this happens when one listens to patriotic songs or national anthems. Notwithstanding its practical soundness, as a theory of aesthetics, referentialism is prone to flaws. The main plank on which arguments are levied against it is that, it violates the meaningfulness of artistic experience. Such a position makes aesthetic reactions vague and can lead discussions on aesthetics down a thorny path.

Expressionism. From the name, it may be apparent that this position holds that music expresses feelings and emotions. For most people, music serves the primary goal of expressing emotions. According to Langer (1979), music is the "tonal analogue of the emotive life." Expressed through tempo, tension and relaxation as well as other musical devices, music can simulate real life experiences. On the surface view, this theory sounds appealing and consequently, many people resonate with it because of the common experience of the emotional dimension of music, but, like all the above foregoing theories expressed herein have flaws, the expressionist theory of aesthetic response is no exception.

Now, the concept of equating aesthetic response to the arousal of emotions has remained mired for many years. First, this aesthetic stance makes evaluations

largely subjective. What this means is that any emotional thrill can qualify for an aesthetic experience. But a more pressing concern is that other experiences, other than music, including food, sex, drugs, money also elicit pleasurable emotions. That is emotional expression is not unique to music only. On the basis of this, it remains unclear if this theory can account adequately for aesthetic response to music.

Absolute-Expressionism. The next aesthetic position to consider, which also has been adopted as one of the theoretical frameworks under whose aegis this study is placed, is absolute-expressionism. According to this theory, the arts offer meaningful cognitive experiences and enable the individual to derive optimal enjoyment of the arts (Reimer, 1989). This philosophical strand is discussed in detail under the 'theoretical framework.' In the following, I shall review the aesthetic response through the lenses of psychology, which inadvertently provided scientific accounts of some of the key issues raised in the philosophy of aesthetics.

Psychological approaches on Aesthetic Response to Music

There is a longstanding connection between the field of psychology and musical understanding and appreciation. Although aesthetics was born as a branch of philosophy, psychological views have offered valuable insights by way of providing empirical and scientific explanations to the phenomenon of aesthetics. According to Barrett (2006, p. 176), "psychological views of aesthetic response have arisen largely from the study of music perception and cognition in the field of psycho-acoustics, specifically the subfield of empirical or experimental aesthetics." Psychological views from experimental aesthetics have basically

informed theoretical and methodological approaches for conducting research in aesthetics.

Psychological science of aesthetics. The empirical investigations of aesthetic experience can be traced to Gustav Fechner (1860) who wanted to give a scientific treatment to human sensation. In the bid to offer a general understanding of the perceptual qualities that drive our aesthetic experiences, Fechner focused on analysis of the elemental properties of an artwork, rather than confronting complex philosophical concepts of beauty. Despite the influence of Fechner's account, Gestalt psychology proffered an alternative which was more of a holistic approach to perception. Gestalt psychologists reasoned that perception cannot be dissected into basic elements because the whole is different from a sum of its parts.

Building on Fechner's work, Berlyne (1971), who is credited with establishing the field of empirical aesthetics, took a different dimension and developed a theory about the way artworks arouse feelings. According to Berlyne, the most liked stimuli (musical work) are the ones with optimal degree of arousal, and this degree of liking gradually decreases towards the extremes of arousal potential. A major component of Berlyne's experimental aesthetics is the optimal-complexity model (also described as inverted U shaped curve). This is discussed in detail in the theoretical framework.

Having paved the way for the experimental study of aesthetics by offering theoretical and methodological approaches, there has been an immense interest in research works examining aesthetic response using a wide range of variables and measures. Informed by Berlyne's work, North and Hargreaves (1997) offered alternative explanations to aesthetic responses, based on a review of research

related to music in everyday life. They are a) radio plugging b) preference-feedback c) acculturation and familiarity, and d) complexity and tempo. Put together, the underlying assumptions for the proffered theories can be conveniently summarized as:

a) At any given time there should be a positive relationship between liking and familiarity, but over time liking should wax and wane as a person chooses to or not to listen to given pieces of music.
b) Through acculturation some music becomes more familiar and predictable, thus less subjectively complex.

Cognitive science. With heavy reliance on digital computers, cognitive scientists basically seek to understand mental processes such as perception, memory, language, emotion and reasoning. In fact, cognitive science adopts a multidisciplinary approach to the study of psychological processes. Cognitive scientists study mental abilities from information processing perspective - information is encoded, stored and retrieved by the brain. This kind of processing is *top-down* where knowledge guides the sensory processes and orients critical features of the arts. This position is distinguished with the *bottom-up* where low-level sensory processes lead to knowledge. The cognitive science approach is founded on the assumption that people apply their knowledge of this world to interpret experiences.

Applied to aesthetic experiences, cognitive scientists hold that based on personal and cultural knowledge, the listener forms expectations that help to interpret musical works and direct listening to salient features. “Prior knowledge”, according to Shimamura, “influences aesthetic experiences” (2013, p.18). The idea expressed herein is that schemas (conceptual framework) are used as guides

for perception and understanding. When listening to music, people may have expectations of how the music should be performed and this requires some form of knowledge in music; knowledge of the music can help in processing the music from top to the elemental qualities of the music (Shimamura & Palmer, 2014). In recent years, cognitive science has gained interest as an approach in addressing the ways in which we process sensory experiences, especially our aesthetic responses to music. The implication for this study is that, as participants (especially those with musical training) apply conceptual framework in interpreting or processing a piece of music, aesthetic responses may be evoked. In this study, conscious effort is made to sample music and non-music majors who apparently may express different processing and interpretation of the played musical stimulus.

Sociological Approaches on Aesthetic Response to Music

Most people will readily agree that beyond the music (physical properties of music) and the one who listens to music, the social engagement aspect of music forms an integral part of musical enjoyment and appreciation. To this end, the cultural, situational and social context of any musical engagement cannot be downplayed. The sociological views on aesthetic response tend to centre on musical 'preference' or 'taste', under the broad rubric of 'musical appreciation'. Here, of particular interest to music educators and researchers is the examination of adolescent's preference for specific musical genres. In this respect, Frith (1987) notes that adolescents consider popular music as a possession and also that, they feel a sense of ownership of such song(s), the performance and its performer(s). The findings of Frith is further buttressed by Hargreaves and North (1999), who note aptly that music plays an important role in adolescent's identification and

delimitation of their social groups. For adolescents, 'their music' is used as a means of including others into their social group and excluding others.

In relation to this current study, the sociological views of aesthetic response highlight the fact that individual and collective experience of music in a social and cultural setting are central to the development of aesthetic response and this is manifested in a range of musical modes of engagement. By way of extension, in the analysis and interpretation of emergent data, this study gives due cognizance to the cultural context in which musical behaviour (aesthetic response) occurred.

Aesthetic Experience

Having couched aesthetics under the intellectual domains of philosophy, psychology and sociology, it remains to consider how this particular affective musical behaviour called 'aesthetic response' has been variously described by scholars. Mention must here be made that an aesthetic response to music is the outcome of an aesthetic experience. But most of the time, the two terms (aesthetic response and aesthetic experience) are used interchangeably. And, regardless of what it is or what constitutes it, "aesthetic experience" is recognized as a human experience (Reimer, 1989). Now, in the discussions to follow, the focus is more on the experience than the aesthetic qualities of objects, events or phenomenon.

The common view for most people will be to equate the aesthetic experience or feeling with the sense of beauty. While this may be partially true, other scholars (e.g. Hargreaves, 1986) reason that certain aspects of music which contribute to the aesthetic value may not fit neatly into the rubric of beauty. Before any further discussions on aesthetic experience to music, it must be observed that the terms aesthetic and affective responses are sometimes used

interchangeably (Amuah & Sracoo, 1996). However, some scholars have drawn distinctions between the two terms. To this end, a musical response that involves awareness of emotional component to the stimulus is often regarded as affective response whilst an aesthetic response constitutes an intense, subjective and personal experience resulting from an interaction with a musical event. Consequently, since musical responses are inherently subjective, a clear cut demarcation of the two cannot be drawn. Even so, Hargreaves (1989) aptly argues that an aesthetic experience applies to "more or less any reaction that any person might have to any work of art, defined in the broadest possible terms" (p. 108). This implies that a lay person's judgment or preference for a piece of music and a music critic's critique both reflect aesthetic experience. Although this position is broad and automatically encompasses any musical response, other proffered positions either pertain to a particular situation or rather delimits the range of responses that could be generally considered as an aesthetic experience. Yet, other scholars (Madsen & Geringer, 2004; Hancock, 2008) have opined that aesthetic experiences are too subjective to be studied by researchers and therefore, what actually aesthetic experiences represent, elude definition. These concerns notwithstanding, some scholars have attempted to offer explanations to aesthetic experiences.

Radocy and Boyle (2003) maintain that, most often, aesthetic experience is described as a particular type of affective behaviour which is a subjective, personal response to the aesthetic qualities of music. However, in their view, what exactly constitutes these aesthetic qualities is not mentioned. Reimer (1989) also believes that an individual's response to the aesthetic qualities is based on his/her ability to perceive the expressive qualities of music. For him, aesthetic experience is the outcome of attending or being absorbed in music's embodied meaning and

reacting feelingfully to the expressive aesthetic qualities. According to Reimer, the aesthetic qualities are conveyed by melody, harmony, rhythm, tone colour, texture and form which also are "expressive of or analogous to isomorphic with the patterns of felt life or subjectivity or conditions of livingness" (p.102). In addition, Reimer maintained that the "aesthetic experience serves no utilitarian purpose. It is experienced for the sake of experience in and of itself" (1989, p. 116).

It seems clear enough from the discussion that Radocy and Boyle (2003) and Reimer (1989) conceive of aesthetic experience in two ways. First, aesthetic experience is subjective which implicitly connotes diverse degrees and intensity of this experience depending on a number of variables. Second, for an experience to be truly musical, listeners must perceive and respond to the aesthetic qualities, and that this experience is valuable in itself. However, Bowman (2003) and Elliot (1995) have levied heavy criticisms (which even sympathetic critics identify) against Reimer's work on the grounds of narrowing our musical understanding and experience of the diversity of musical endeavours and musical products worldwide by a) imputing a single purpose to all of them, b) imposing a single mode of response on all their listeners, and c) attributing a single motivation to all music makers and music listeners everywhere. By so doing, Elliot claims, the fallacy of inculcating the ethnocentric ideology of the eighteenth-century is committed.

Commenting on the aesthetic experience, Knieter (1971, as cited in Radocy and Boyle, 2003) also cites five characteristics that embody an aesthetic encounter, namely: focus, perception, affect, cognition and cultural matrix. For him, an individual must first focus by devoting attention to the music and respond thereto. Upon focusing, the next process is perception (awareness of the sensory

data). Granted that an individual focuses and perceives the musical stimulus, Knieter further states that two types of affect occur; physiological changes (such as change in blood pressure, respiration and electrodermal response) and feelingful reaction (emotional sets). Concomitant to the affect is cognitive processing which is particularly important to the aesthetic experience. This stage involves analysis, synthesis, abstraction, generalization and evaluation. In this sense, musical knowledge and training contribute greatly to the quality of an aesthetic experience. Finally, reflected in the aesthetic experience are the values that one learns within a cultural context. Kneiter's model for the aesthetic experience seems to capture the core constituents of the aesthetic experience (cited in Radocy & Boyle 2003). Eventually, his work informed many research works and other aesthetic theories. Similarly, Abeles, Hoffer and Klotman also identified six characteristics of the aesthetic experience: the non-utilitarian value (aesthetic experience is an end in itself), the feeling dimension, intellect engagement, focus of attention, experiential nature of the aesthetic experience, and a rich and meaningful experience it offers.

From the discussion above, for an experience to be aesthetic, it must result in a feelingful reaction to the perceived interaction of the aesthetic qualities the music embodies. It also seems clear enough to recognize that an aesthetic response is meaningful within a cultural matrix. Expressed in the foregoing is that, an amalgamation of affective and cognitive processes of a musical stimulus is the outcome of aesthetic experience (Leder *et al*, 2004). The general idea is that aesthetic experiences transcend undergoing an emotional interlude.

Music Preference(s)

The preferences for music types affect aesthetic responses to that music. Also musical preferences result from a complex mixture of musical, personal and environmental characteristics. Just as preference for certain foods or clothing to a large extent has an effect on us, so does preference for certain types of music influence aesthetic responses. Taking into consideration research findings on familiarity of musical stimulus and likeness, it may seem plausible that aesthetic response to preferred piece of music or musical types can be positive. It is in view of this that this study reviews literature in the area of music preference, particularly in looking at the factors that affect musical preference as they also affect aesthetic responses. In addition, this will also place into perspective the musical preferences of university students (who form the research participants) and inadvertently inform the musical stimulus to be used for the study.

Factors that Affect Music Preference(s)

Individuals manifest different preferences for various musical types. Accordingly, a myriad of factors tend to affect the musical preferences of individuals which mainly are categorized into inherent musical factors (structure, style, complexity, familiarity of music), individual psychological factors (age, gender, cultural group, musical training), and social variable factors (work, leisure, entertainment situations, presence or absence of others) (Hargreaves, North & Tarrant, 2006). The authors refer to these dimensions as the three-tier framework of musical preference. In the subsequent paragraphs, these three broad dimensions are discussed.

The person (human-related factors). In relation to this current study, the human-related factors of musical preference which have far reaching consequences are age, gender, and musical training. First, age is a major determinant of musical preferences. Generally, age accounts for differences in behaviour among people and as a result studies on musical preference contain numerous references to age effects. The literature indicates that while popular music appeals to adolescents, other musical types, especially classical, are less preferred (Hargreaves & North, 1997). Here, while older (40 years and above) people had larger preference for classical music, adolescents resonated more with popular music including soft rock and country. A number of explanations have been offered to account for the disparities in musical preference for different age groups. The most obvious may be that as people grow older, their musical preferences also change. Alternatively, Otchere (2013) explains that,

> compared with classical music, popular music incites responses that make listeners move, dance, clap or shout (which are typical tendencies of people in the teen ages). Classical music is comparably more relaxed and requires deeper intellectual processing (which typically reflects adulthood rather than teenagers) (p. 36).

As far as this study is concerned, this review highlights the point that people of differing age group have a liking for different musical types.

Another human-related factor of musical preference is gender. Like many other empirical studies, although gender is not a primary variable in this study, it is also considered to ensure representativeness of population. The literature on music preference and gender seem to converge on the fact that, compared with females, males are more likely to prefer music described as ‘hard’ or ‘tough’.

Females, in stark contrast, tend to prefer music described as 'softer' and 'romantic' (Hargreaves & North, 1997). A possible explanation of this apparent gender differences in music preference is that of the established conventional general gender stereotypes and social roles. From the point of view of physiological make-up of both sexes, where males exhibit gross motor skills and females fine motor skills, according to scholars such as Agak (2002), males prefer loud and rigorous music while females prefer soft and gentle music. Now, since this current study includes students from both sexes, this review offers another parameter for interpreting to the responses that may emerge.

All through this study, the effects of musical training on musical behaviour is expressed. As has been observed by Davis (2003), the majority of studies on experimental aesthetics have focused on comparing listening experiences of musicians and non-musicians. Interestingly, results from these studies show that little variation exists between the two groups. Taking a cue from the literature on aesthetic response, this study also investigates musical training as a variable.

The final point to consider is the influence of ethnicity and cultural background on musical preferences. In the light of the fact that music is performed in a cultural, national and ethnic group context, music preferences may vary widely from one person to the other. Music is organized within a cultural context and listening or performance is done in a particular setting that influence preference for that music. For example, Radocy and Boyle (2003) maintain that musical meaning can be derived within a particular context. In Ghana, musical styles of the various ethnic groups have distinct features that make them unique to their respective cultures. Individuals in their respective cultures easily relate and identify with musical types prevalent in their ethnic group as well as the

performance context. However, it needs pointing out that people from other ethnic groups can have preference for music associated with another ethnic group. In view of this, since Ghana is a multi-ethnic society, research participants were sampled from different cultural backgrounds and ethnic groups which implied varied musical preferences. Hence, this provides, yet, another parameter for interpreting emerging data.

Musical factors. A consideration of music characteristics brings to focus elemental components of music such as structure, style, complexity and familiarity of music, among others. It would seem apparent that different musical types embody various characteristics. Generally, four classes are primary properties of the musical stimulus: physical properties, complexity, referential meaning and performance quality. Physical properties include rhythms, structure, form, melody, harmony, timbre, harmony among others. The other three classes stem from how the physical properties are employed in the music. Obviously, all these properties which are experienced at different levels by people may contribute to the differences in the musical preferences.

From the foregoing discourse, a number of factors come into play to result in peoples' preferences for musical types. In fact, a detailed review of all of these factors is beyond the scope of this study. In accordance with the purpose of this study, the literature on musical preference was reviewed to encompass those factors which have direct bearings on this work. This was to provide a palpable ground for the interpretation and analysis of emergent data.

Theoretical Framework

To provide a particular perspective, or lens to examine the questions set in a study, it is extremely important to review the work in the light of theoretical framework. In this sense, theoretical framework may be referred to as foundations that set the parameters and boundaries for a study. Founding a study on theoretical framework carries with it a number of advantages. Among these advantages include directing the focus of the work and providing particular perspective for examining the work. For these reasons, this study was placed under the aegis of four theories: (a) Absolute expressionism, (b) Berlyne's arousal theory, (c) Mere exposure theory (d) Piaget's Genetic Epistemology.

Absolute Expressionism. Based on the understanding that aesthetic responses may be a function of complex interplay of variables including musical stimulus, personal experiences, situational context, among others, this study was viewed through the lens of absolute expressionism. Absolute expressionists believe that the nature and value of music is derived from attending to the internal qualities such as melody, rhythm, tone colour and harmony (Abeles, Hoffer, Klotman, 1995). However, other extra-musical concepts can serve to enhance the experience with the music. Commenting on this view, Reimer (1989) insists that the meaning and value are internal; they are a function of attending to the internal qualities themselves and how they are organized. But, additionally, Reimer realized that the artistic or cultural influences surrounding the work of art may be strongly involved in the experience of the work. Expressed in the foregoing discussions are two core issues that bear significantly on this study.

First, aesthetic experiences can result from attending to the internal qualities of the art music and how these qualities have been employed in the

music. By extension, the perceptual capacity of an individual in identifying these musical qualities (form, structure, elements, organization, technical, and dynamics) and how they have been ingeniously used to embody an idea in the music may elicit some aesthetic experiences. However, most people are not sufficiently conscious of musical details. And so, invariably such people listen to music for the sheer pleasure of musical sounds. By their training, undergraduate music students are expected to develop their musical perception to be conscious of musical details and their usage in the music. In effect, since learning how these musical elements work and are organised greatly enhance the musical experience, undergraduate music students are expected to respond differently from other students who may not have acquired any formal music training.

Second, absolute expressionists recognize that artistic or cultural factors influence the meaning and value of a piece of music. Commonly, the words in a song, such as patriotic, social protest and religious songs, and so on, can indeed evoke powerful feelings or affective responses. This theory affords a parameter which will be appropriated in the analysis and interpretation of the emergent data. Figure 1 provides a visual display of the absolute-expressionist position.

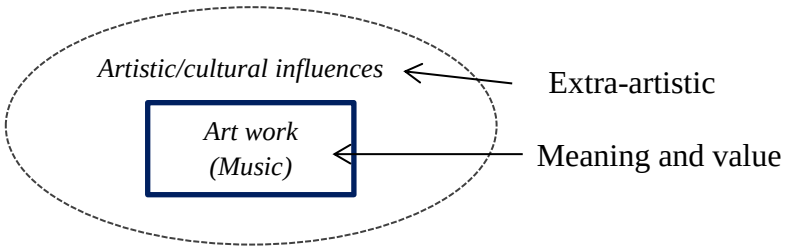

Figure 1: Diagram of the absolute expressionist position

Illustration cited from Reimer (1989)

Berlyne's Arousal Theory. Another influential theory that borders on this study is Berlyne's arousal theory of experimental aesthetics. The basic thrust of Berlyne's theory is that preference for stimuli is related to their arousal potential, which is the amount of activity they produce in areas of the brain such as the reticular activating system (Hargreaves & North, 2004). Put differently, the most liked stimuli (musical work) are the ones with moderate degree of arousal, and this degree of liking gradually decreases towards the extremes of arousal potential. Another tenet of this theory is that, liking for music is determined principally by the effect of collative stimulus properties of the music (complexity, novelty/familiarity, redundancy/uncertainty, surprise, incongruity).

Essentially, this theory accounts for how people may have different preferences for various musical types. Carrying this theory to its logical conclusion, Hargreaves and North (2004) claim, there is an inverted-U relationship between preference and stimulus arousal potential. The original idea of the inverted U adapted by Berlyne and subsequently other scholars (Hargreaves, North and Madsen) was first proposed by Wundt. There are a considerable number of studies which are supportive of the inverted U-shape curve hypothesis (Radocy, 1982; Hargreaves & Casting, 1986). In Figure 2a, the low level intensity of stimulus starts from zero and then rises to a peak and after further increases in exposure, likeness for the music declines.

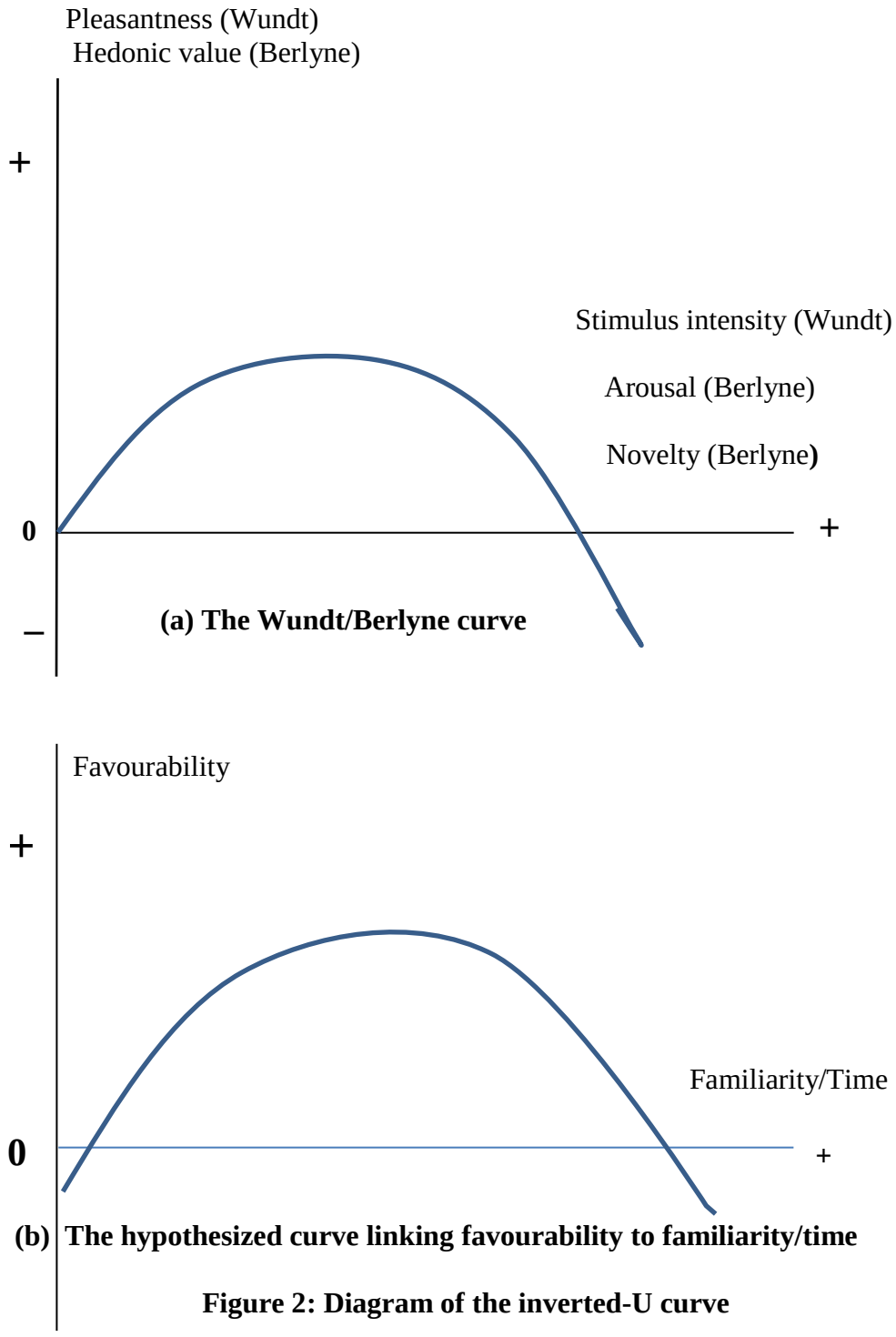

Figure 2: Diagram of the inverted-U curve

Hargreaves (2001) building on Berlyne/Wundt's curve, notes that, zero familiarity with musical stimulus (nil exposure to the musical stimulus) could also imply complete familiarity with the stimulus. For him, (as illustrated in Figure 2b) liking for completely novel stimuli is initially negative: people initially dislike novel objects. However, Hargreaves (2001) notes that,

> as the objects become more familiar, liking becomes increasingly positive, reaching a peak at some optimum familiarity level, and further increases in familiarity give rise to a decline in liking, which eventually becomes negative at very high levels of familiarity (p. 110).

In essence, this theory highlights the differences in preferences of individuals for certain kinds of music and underscores the role of collative properties such as familiarity and complexity of music on responses.

A closely related theory to Wundt/Berlyne's arousal theory (discussed earlier) is the mere exposure theory (Zajonc, 1968; Sawyer, 1981; Miller, 1976; Kunst-Wilson & Zajonc, 1980). The basic tenet of the mere exposure theory is that, the more exposure we have to a stimulus, the more we will tend to like it. That is familiarity breeds liking more than contempt. Choices are made based more often on familiar things than on unfamiliar things. The explanation for this is that things grow on us and we acquire tastes for things often over time with repeated exposure (Otchere, 2010). Generally, empirical studies abound in showing the relationship between familiarity of music (as a variable) and musical responses. For example, Bradley (1999) found a significant positive correlation between song familiarity and song preference across a number of selected songs. In relation to this study, the mere exposure theory provides an overarching framework for explaining how familiarity can influence people's responses to music (which can be achieved by repeating stimulus). This inadvertently can either serve to enhance or diminish an aesthetic encounter.

Piaget's Genetic Epistemology. Piaget proposed this theory to account for the essential part of the organisation of thinking. His concept of genetic

epistemology enabled him to explain how children tend to develop towards increasingly abstract and logical forms of thinking. From birth, children gradually acquire the logical forms of thinking through the accumulation of experiences pertaining to the environment. According to Hargreaves (2001), Piaget's theory is based on the idea of adaptation to the environment. Adaptation is seen as the process by which cognitive structures are developed. According to Piaget's account, adaptation takes place via the processes of assimilation and accommodation. Hargreaves (2001) rightly notes, "we assimilate new objects and events that we encounter in the environment: we accommodate to objects and events by changing our ways of thinking about them."

By the process of enculturation, people grow with cognitive schemes for listening to music. The development of conceptual framework (scheme) is essential for processing, analysing and appreciating musical pieces and performances. This theory offers another parameter for understanding the music preference of students.

Research on Aesthetic Response and Various Aspects of Music

For this study, reviewing some of the earlier studies relating to aesthetic response and various aspects of music highlighted the salient variables as well as informed the methodology. Two of such studies are reviewed in the subsequent paragraphs.

In the first study, Madsen and Geringer (2004) examined the aesthetic responses of trained musicians to graduated pitch changes in a musical context. In their study, the primary goal was to ascertain the perceptive ability of music majors in identifying a graduated pitch change compared with nonmusic majors. Of particular interest, in their study, was to find out how perception of a graduated

pitch change affects aesthetic responses. To achieve this purpose, subjects (music and non-music majors) listened to an excerpt of Haydn's symphony number 104 modified to reflect an initial rising or lowering pitch centre at the rate of one cent for every 1.2 sec until a 300-cent pitch centre change was attained. The results of this study indicated that when the aesthetic responses of both music and non-music students were compared, music students tended to have a more favourable response towards the unaltered performance than performances with sharper or flatter pitch change conditions. Apparently, Madsen and Geringer stated further that subjects (music and non-music majors) could not conclusively determine the presence of a pitch change. Subsequently, the researchers in their study concluded on the note that identification of "a gradual change of pitch remained in the threshold of quite sophisticated musicians" (Hancock, 2008; p. 178).

In another related work, Madsen, Byrnes, Capperella-Sheldon and Brittin (1993) studied the aesthetic responses of musicians and non-musicians to music selections composed by Haydn, Holst, Strauss, Mozart and Puccini. In their study, the CRDI was used to measure on-going and changing responses to the music played. The results identified in the CRDI graph showed that the responses for research participants were unique for each selection. However, group data were similar for both frequency and magnitude of recorded aesthetic response. The authors acknowledged that participants had an aesthetic response while listening to the piece of music. However the intensity of the aesthetic responses varied over the course of the performance resulting in both subtle and extreme changes.

With respect to all these studies, various methodological approaches have been adopted in the study of aesthetic response. These include eliciting response during the aural event using devices such as CRDI (Madsen & Geringer, 1999). Now, issues concerning timing (during or after the aural event) for elicitation of

response have, in reviewing the body of related research, implications for the study. Significant questions are raised relating to a) responding in a listening as a 'reflection-in-action' and b) responding after listening as a 'reflection-on-action'. While the proponents of the latter claim that listening is 'action' and capable of bearing distinction between the two types, Barrett (2006) is of the view that "what is accessed 'in' rather than 'after' the event may be qualitatively different in ways that are important to understanding aesthetic thinking and response" (p. 176). Taking precedence from earlier research works, this current study employs both 'reflection-in-action' (using the CRDI) and 'reflection-on-action' (using a questionnaire) for the elicitation of responses.

Summary of the literature review

In this review, pertinent and related literature on aesthetic response has been discussed. The introduction to the chapter set the tone for the discussion by acknowledging the importance of the whole exercise and presenting the structure of the review. Subsequently, discussions on aesthetic response were couched in philosophy, psychology and sociology as they all shed important light on the topic. Now, drawing from the three major intellectual domains, the theoretical framework adopted for this study was subsequently addressed. These included Absolute-expressionism, Berlyne's arousal theory, Mere-exposure theory, Piaget's Genetic Epistemology. In this review, interest was given to relationships between this current study and the theoretical framework. Next, the potential influence of musical preference on aesthetic response was reviewed. This encompassed factors such as age, gender, musical training, musical variables, cultural and situational context which affect musical preferences of people. Two studies, in particular, were identified to have direct bearings on this study. From these studies, important issues concerning the nature of sample, variables to

consider in this study, musical resources, research instruments, research methodology and data collection techniques were ascertained. All in all, the relevant ideas stemming from this review were indispensable in shaping this current study.

CHAPTER THREE

RESEARCH METHODS

Introduction

In this chapter, I discuss the general procedures and methods designed and carried out for this study. Generally, research methods represent the research procedures for collecting, analysing, interpreting and reporting research studies. Here, I divulge the array of activities: methods, techniques and procedures which were associated with conducting the entire research. In this sense, the research design used in this study encompassed the population and sample, the sampling procedures, the nature of the data collection, the research instruments used, validity and reliability, data collection procedure, and data analysis procedures. It also includes the role I played as the researcher in the entire research process, the anticipated limitations in the study and suggested solutions to the limitations, and these are described in details in the subsequent paragraphs.

Research Design

The general research design of this study is discussed to help establish the parameters of the study and specify data collection methods. A closer look at some classic studies reveals that, thorough and high-quality studies result from well-designed research procedure. Below is a description of the research design used for this study.

Concerning the types of research work, McMillan and Schumacher (2001) identified three basic types, namely: *basic, applied and evaluative research*. Generally, the distinctions between these types are essentially in the degree to which the research facilitates decision making. Of the three types, this study tends to be more of a basic research by function. Ultimately, results from this study will provide empirical evidence that will inform the delivery and development of aesthetic responses to music in the field of music education.

Another dimension of the research design to consider is the purpose of the study. Neuman (2003) broadly categorized research works into three purposes that they can serve, namely: descriptive, exploratory and explanatory research. Notwithstanding the interrelatedness of the identified purposes to which a research work can serve, Neuman claims further that most studies fall dominantly into one type. Accordingly, this study heavily slants towards exploratory study. Otchere (2013) cites Kumar (2005) as noting that exploratory studies are "usually carried out when a researcher wants to explore areas about which s/he has little or no knowledge" (p. 10).

With respect to the time-frame, this study was conducted within the framework of the cross-sectional design. In a cross-sectional study, unlike longitudinal studies where data is collected across time periods, data is collected from research participants at a specific period of time.

Typical of most studies, the next dimension to consider is the general procedure of the research work. Considering this present research, casual-comparative design procedure was used to conduct this research. According to Macmillan and Schumacher (2001), "rather than manipulating what will happen to subjects, as in experimental designs, the research focuses on what has happened differently for comparable groups of subjects, then explores whether the subjects

in each group are different in some way"(p. 34). The quotation above succinctly captures the nature of this current research. Specifically, two different groups of University undergraduate students (music and non-music majors), were measured on aesthetic responses, to ascertain the differences and similarities in responses between the two groups. By simulating the listening conditions of students, this study, without manipulating the variables, canvassed the experiences (aesthetic response) that actually happen when students listen to music.

Finally, the mode of inquiry adopted for this study was the mixed method approach. This term refers to "a class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approach, concepts and language into a single study" (Johnson & Onwuegbuzie, 2004). This present study combined quantitative and qualitative research methods, approaches and techniques. Most studies that have employed mixed method research approach have premised its use on the fact that more than one method carries some benefits. The mixed method approach offers multiple approaches that capitalize on the strengths of each approach (quantitative and qualitative) and offset their different weaknesses (Creswell, 2002).

Indeed, research methodologists and scholars have devoted a great deal of attention to explore the variant models of mixed method. However, the selection of a variant model is premised on three key factors: a) the time order of data collection, b) the relative weighing (priority) of the two approaches, c) how the quantitative and qualitative methods are mixed. In view of the identified factors, the specific research method design employed in this study was concurrent, embedded correlational model (Johnson & Onwuegbuzie, 2004). Procedurally, the time order for this study was concurrent: meaning that the quantitative and

qualitative data were collected, analysed and interpreted at approximately the same time. Also, the two approaches (quantitative and qualitative) were given unequal weight (priority) in addressing the problem of this study. In this case, quantitative method had a greater emphasis within the study than qualitative. In relation to the mixing of the two approaches, the qualitative method was embedded within a larger quantitative design. Here, the qualitative method was embedded concurrently with the collection of quantitative data. Subsequently, interpretations were made using the embedded qualitative data, as the two datasets were brought together in a concurrent approach. Specifically, qualitative analytical procedures (descriptive statistical procedures, relevance of context as well as thematic analysis) were used in analysing and interpreting the emergent datasets which were predominantly quantitative. As may be apparent, the above description represented the defining characteristics for the selected mixed method approach for this current study. The rationale for the selection of this approach was that the quantitative data and the subsequent analysis would provide a general understanding of the research problem. The embedded qualitative data and the ensuing analysis of it, was to explain the statistical results by exploring the participant's views in more depth.

Population

The population for a study refers to a collection or set of measures of variable that share common characteristics (Glenberg & Andrzejewski, 2007). The population for this study was University undergraduate students. As a step in this direction, the target population for this study was a public University in Ghana. Understandably, members of this population shared some common characteristics. In terms of age, members of this population may possibly be 17

years old and above. In terms of education, they must have all gone through prior education to at least high school level or its equivalent. Consequently, the population for this study was carefully selected taking into account some specific reasons.

First, the selection of this population was on the basis that, participants of this study will be old enough and fairly matured to manipulate and handle the dial of the CRDI device. This assumption was backed by the understanding that very young and very old people have been found to have lower reliabilities than other subjects (Asmus, 1999) and also that younger participants may not understand the task they are to perform. The second reason was based on the assumption that the educational level and experiences of the participants relatively will afford them a sense of awareness of their preferences, value judgments and responses to diverse music genres. Beyond this awareness, the required skill and vocabulary needed to fill out the questionnaire would have been acquired by participants by virtue of educational level. Lastly, to a considerable extent, participants would have been amply exposed to different music genres. In sum, the population target for this study was carefully selected in order to achieve the anticipated purposes for this study.

Sample

In all, a sample size of 64 was selected from the population. For this study, a sample size of 64 was considered ideal because, according to Glenberg (1988), a sample size of 30 randomly selected from the population is large enough to display important characteristics of the population from which it is selected. Considering the purpose of this study, it became obvious that the sample must reflect a number of diverse characteristics. Of particular interest for this study

were the following: age, gender and academic program of study. It became necessary for the sample for this study to be randomly selected to display these variables. To this end, a sample of 64 was composed of 16 students from each of the four undergraduate levels (100, 200, 300, and 400), out of which 32 were males and 32 were females, as well as 32 music students and 32 non-music students were stratified.

Upon these levels of stratification, it would be seen that the sample naturally constituted a wide variety of features including association in musical performing groups (choir, band, orchestra, among others) religion, ethnicity and preferences. Thus, it can be said that the sample for this study was representative of the population and also carefully selected to align with the variables considered for this study.

Sampling techniques

To ensure that the sample reflected the population, probability sampling techniques were employed. Glenberg (1988) puts it that each time any observation in a population has an equal chance of occurring in the sample, it becomes random sampling. In this section, the sampling techniques used to select the participants for this study are described.

Considering the purpose of this study, it was important to divide the population (undergraduate students) into mutually exclusive units before random selection of participants could be done. This sampling technique is called stratified random sampling. As the name suggests, stratified random sampling involves dividing the population into groups called strata before simple random sampling is carried out. In this case, the first strata was the level of undergraduate

students (100, 200, 300 and 400) from which the sampling units were drawn. A number of 16 students were drawn from each stratum (levels) in the selected University. The type of stratified sampling techniques used here was disproportionate because each level had unequal number of students.

Next, a secondary stratum considered was gender, where students from each of the four undergraduate levels (first stratum) were subsumed into 16 males and 16 females. Since this study, essentially was to explore the aesthetic responses, it was important to have participants with varied musical training. As a step in this direction, a third stratum composed of music and non-music majors was done. The music students (n = 32) consisted of those who offered music in the selected university whereas the non-music students (n = 32) were students who studied course areas other than music.

The three levels of strata used here, although naturally constituted a wide variety of features including, religion, educational level and participation in musical groups, were purposely aligned with the aim of this study. By extension, this sampling technique typified a mixed method sampling technique called stratified-purposive sampling.

Having subsumed the sample under various strata, the independent within-sample random sampling was conducted. As typical of this sampling technique, it was to give each member of the population an equal chance of inclusion in this study in order to make inferences from the sample about the population. Johnson and Christensen (2000) aver that a sampling procedure which gives every member of the population an equal chance of being selected is suitable for making inferences about the population from which the sample was drawn. The choice of these sampling techniques were aligned to the purpose of this study. Figure 3 shows a visual representation of the sampling techniques used for this study.

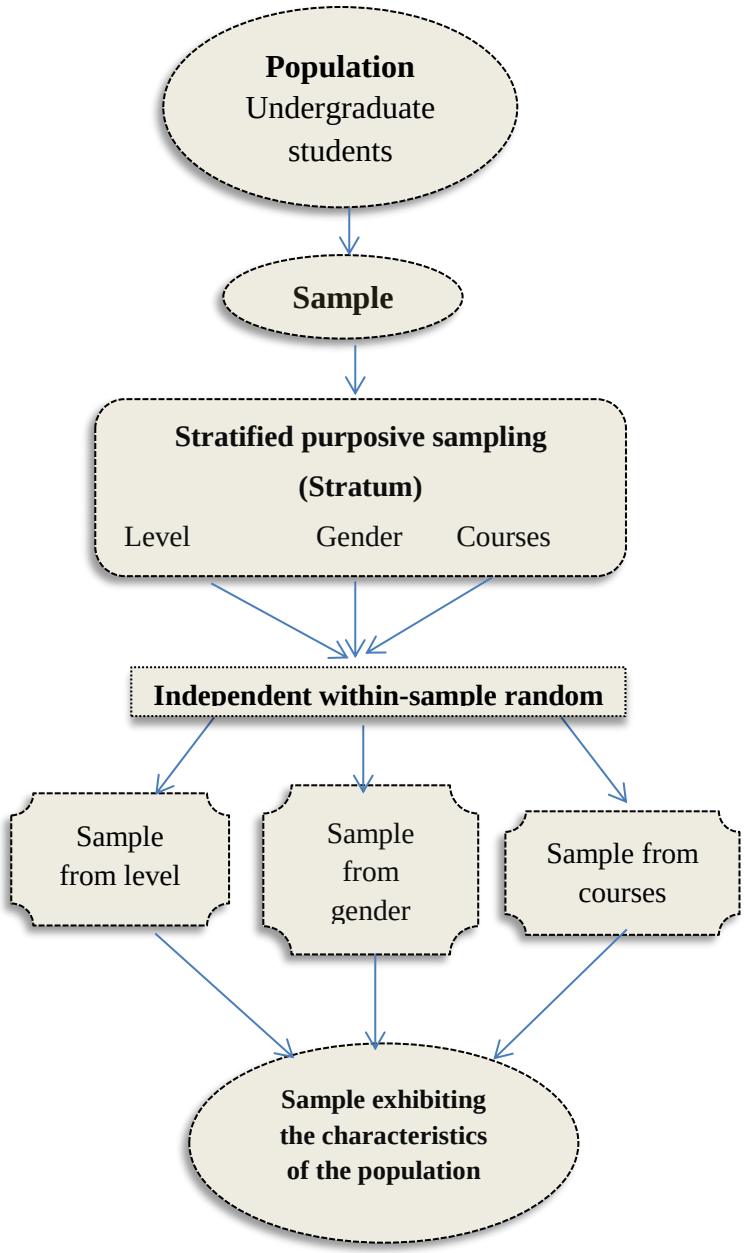

Figure 3: A diagram representing the population, sample and sampling techniques used in this study

Research Instruments

The CRDI was the principal instrument used to measure aesthetic responses to music. In addition, questionnaire was administered to ascertain the biographical data. Participants were also required to indicate on the questionnaire

whether or not they had an aesthetic response. The following is a description of the instruments as well as their usage in this present study.

The Continuous Response Digital Interface (CRDI)

The CRDI device is a technologically based measurement strategy for measuring on-going and changing responses to musical stimulus in a continuous manner. This kind of measure is done synchronous to provided musical stimulus. Developed in the late 1980's at the Florida State University Center for Music Research, the CRDI has been used for a wide range of studies including music therapy and educational studies (Madsen, 1996). The basic work of this device is that, a computer interface translates incoming voltage to a digital representation ranging from 0 to 255; that is, placement of the pointer along the dial sends a corresponding voltage that is converted to a numerical rating. These recorded numerical ratings represent the dependent variable (aesthetic response) across time.

This device is a non-verbal means of assessing musical responses in real time synchronous with provided musical stimulus. Unlike the traditional measuring strategies like adjective checklist, semantic differential method and the use of Likert-scales, the CRDI has a relative advantage of measuring on-going and changing musical responses while people listen to music. This advantage is premised on the fact that when people listen to a particular type of music, responses may vacillate or remain constant from the start to the end.

The choice of the CRDI was informed by four key factors which were considered necessary to obtaining the desired results of this study. First, it is a common experience that, most times, from an initial contact until the end of a music listening episode, responses may largely swing back and forth. Secondly,

to understand the self-defined aesthetic responses of students, it was deemed appropriate to synchronize responses to music heard with aesthetic peaks. Thirdly, the quantitative nature and graphical representation output of the CRDI was considered ideal for this purpose. Finally, in reviewing earlier research works related to this study, I found that most studies employed the CRDI in its data collection (Geringer, Madsen, & Gregory, 2004). Now, to set up this device for use, a computer, potentiometer, 16-bit analogue and dial were required.

Potentiometer. This component (also known as the interface box) is connected to a computer using a 16-bit analogue. The interface used for this study had eight ports, meaning eight responses could be ascertained simultaneously. The function of the interface is to receive information from the dials which is manipulated by the listener. In addition, the interface sends information to a computer which is read as a graph. Further still, it has an inbuilt memory capacity to store information.

Figure 4: A picture showing the potentiometer and the 16-bit analogue

The Dial. The next component of this device is the dial which is manipulated to signify a change in aesthetic response. Attached to the dial is a pointer which ranges from 0 – 255 degree arc.

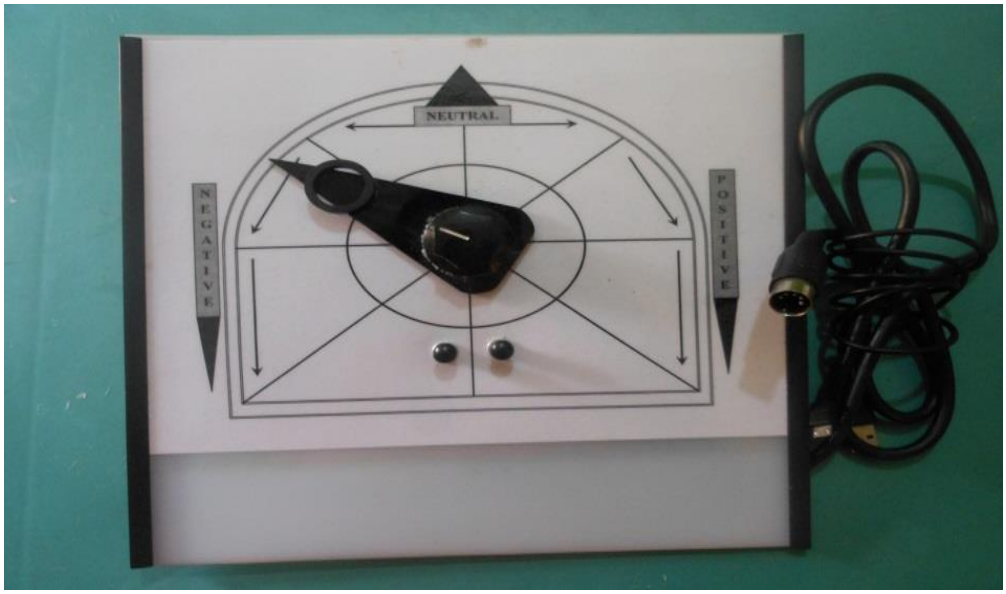

Figure 5: A picture showing the dial and the 16-bit analogue

Reliability and Validity

As a general rule, research instruments to be used for data collection must exhibit a high degree to consistency (reliability) and measure exactly what it purports to measure (validity).

Validity of the CRDI. It must be noted that pertinent issues on validity relate to several different aspects of measurement. In actual sense, tests and devices are designed for a variety of purposes. According to Geringer, Madsen and Gregory (2004), the validity of a research instrument must be evaluated based on specific purposes, and there are a number of ways that validity can be expressed.

Most often, the content validity, which primarily relates to the judgment of whether or not a test measures an intended content area, is used for classification.

To do so requires establishing both face validity (judgment that the test appears to measure some intended content area) and sampling validity (attaining a representative sampling of the content area). Both of these issues have implications for the application of CRDI in eliciting aesthetic responses. Now, given the nature of the constructs being assessed by the CRDI, validity is situation-specific and relates to the impinging factors of the particular research context. As such, the CRDI has been used to measure a number of types of responses to music including affective, mood, aesthetic, preference, and emotional responses among others. In all these measurements, the CRDI was used to measure various content areas depending on the focus of the research work. Then again, as may be apparent from earlier discussions, aesthetic experience often is multi-dimensional - an interplay of complex variables (idiosyncrasies of particular settings, personal dispositions, population and musical selection). According to Asmus (2009), no real conclusions have been drawn regarding the validity of the CRDI.

Another way validity can be expressed is concurrent validity - a procedure that attempts to relate the degree of relationship between one set of scores and another previously recognized set measure earlier or at about the same time. In this sense, the CRDI measures have been compared with other sets of measurement. Among the studies that have recorded a high similarity between CRDI measures and other sets of measurements include Brittin, 1991; Brittin and Duke, 1997; Brittin and Sheldon, 1995; Geringer and Madsen, 1995/1996; Johnson, 1992. Indeed, Geringer, Madsen and Gregory (2004) claim the validity of CRDI is situation specific - that is, how the construct (in this case, aesthetic response) has been conceived and the conditions that impinge on the particular study.

Reliability of the CRDI. Reliability is concerned with the degree to which an instrument provides consistent measures. Like validity, the reliability of an instrument can also be ascertained in a number of ways: test-retest, split halves, parallel forms, sample observations compared with subjects, judges, observers or devices. Unlike validity, establishing the reliability of an instrument is quite straightforward. The reliability of the CRDI has been a focus for a number of scholars including Capperella (1989), Madsen (1996) and Schmidt (1996). For example, Capperella's (1989) is credited with conducting one of the foremost reliability studies of CRDI using the test-retest. Using the lever version of the CRDI, Capperella divided the horizontal line into five music elements such as dynamic and melodic. Forty participants listened to 10 classical musical excerpts and moved the lever to the section of the dial corresponding to their focus of attention. Test- retest reliability with musicians and non-musicians in each of the five music element zones ranged from .73 to .98 with a mean of .90. Generally, test-retest reliabilities have been found to range between .64 and .94 with most of the studies being in the range of .85 and .95. Since the closer reliability tests are to a correlation coefficient of 1.0 the more reliable the instrument is, the figures above indicate that the CRDI is a reliable instrument. Even so, Schmidt (1996) indicates that reliability can vary due to the subjects' knowledge of the construct being assessed and the subject's age. This, of course, points toward the need to give clear instructions on the use of the CRDI and also to ensure that subjects understand the task they are to perform.

Questionnaire

Most of the studies conducted with the CRDI have included an exit questionnaire which basically ascertained some important information to

complement and confirm CRDI data. Participants were required to complete a two-part item questionnaire. The stem question items, taken from Madsen and Geringer (2004) were "did you have an aesthetic experience while listening to the music?" "Did your movement of the dial correspond to what you define as an aesthetic experience?" (p. 102).

Part one of the questionnaire consisted of biographical data including age, level, subject of study, gender, indication of participation in musical group. Part two, which participants completed after each music selection consisted of the level of familiarity of music and the magnitude of the aesthetic response (compared with other listening experiences), if there was any, during the listening session. Seven response choices ranging from "dislike strongly" to "like strongly" were employed. The objective was to confirm the presence or absence of aesthetic experience during each music listening episode. Taking precedence from previous studies, I felt it was extremely crucial for questionnaire to be completed after each music selection to allow ample room for emotions aroused to stabilize before the onset of another musical type (see Appendix A for a detailed account).

Procedure for Data Collection

The procedure for the collection of data in this study was subdivided into two stages: pre-field activities (before the field) and in the field. The activities that went under each of the stages are described below.

Pre-field activities. Having clarified and set the research topic into perspective, I ensured that the CRDI device was properly set-up for use. This process involved installing the software and making all the associated hardware connections. Next, the settings of the CRDI device was calibrated to accommodate two dials and mapped to read from a minimum value of 0 to a

maximum value of 255. This was subsequently divided into five zones (zone 1 was approximately (0-51), zone 2 (52-102), zone 3 (103-158), zone 4 (159-210) and finally zone 5 (211-255). This process was followed by setting the sampling interval to the value of 1.0 second- meaning that response will be sampled once per second. After this, the timings of the various music stimulus used in this study were captured by recording the beginning time to the end point.

As part of the preparations, permission was also sought to use the seminar room of the selected University's music department for the collection of data. Once permission was granted for the set days for data collection, I called the research participants to remind them of their respective date and time and to also get a confirmation of their participation.

In the field. While in the field, the research instruments and documents to be used were made ready before the participants started reporting. This process followed the standard protocols for conducting listening sessions and exercises. Once the participants arrived, they were given orientation on the subject of investigation (aesthetic response) and the use of the CRDI device, especially the manipulation of the dial. Ample time (10 minutes) was allowed to ensure that participants were well familiar with manipulating the dial to indicate a change in aesthetic response. Two participants were made to sit at one of the two individual CRDI stations. The stations were purposely arranged with large partitions to physically and visually isolate one participant from the other. Once participants were comfortably seated, the research assistants handed out the questionnaire to them. Next, participants were instructed to fill-out the questions on the side labelled Part one (biographical data) and be honest as they could in answering the

questions. When the participants had completed this task and appeared comfortable, I gave the following instructions:

> Thank you for agreeing to be part of this study. You are about to hear a series of six musical pieces from different musical types. This study is an attempt to provide information about your aesthetic experience to various musical types. As you sit quietly, relax and listen to the music, move the dial to correspond to the degree of aesthetic experience. Allow the music to take you wherever it takes you as far as aesthetic response is concerned. Are there any questions?

Using headphones, participants listened and responded to the music stimulus as assigned. The participant's assessment of their aesthetic response, determined by their position of their arc pointer on a 255 arc, was recorded every 1.0 seconds (Gregory, 1992). Immediately the music was over, participants were instructed to turn over to complete the section labelled Part two. Part two of the questionnaire comprised questions to indicate whether participants had an aesthetic response, the extent to which the CRDI correctly recorded their response, and the level of familiarity of the music heard. In all, administration time per session was approximately 30 minutes. The same process was duly followed until all the responses of the research participants had been measured. After measuring the responses of each participant, the emerging continuous data was named to tally with a code on the questionnaire, classified and stored on the computer for further processing (coding, entry analysis). As a gesture of appreciation for participating in the research, participants were given some refreshment.

Musical Stimulus

For this current study, in line with the purpose, six musical types of varying complexity and familiarity levels were selected from a study of musical preferences of college students in Ghana. Using Otchere's (2013) study as a paradigm, important information on the various musical genres that undergraduate students preferred was obtained. He identified Gospel, New age, Country, Classical, Hip-life, Traditional and Hip-hop among others to be the musical preferences of college students (see Appendix B). It should be carefully noted, however, that my intention here was not to focus on preferences for musical genres, but, rather using music of varied modes of engagement. By varied modes of musical engagement I refer to the organization, structure, form and use of musical elements in a piece of music. Accordingly, the selection of music (classical, country, hip-life, traditional, new age and avant-garde) was based on the fact that each type provides uniquely different mode of musical engagement (see Appendix C). In addition, because familiarity of music is considered a key variable in this study, the selection of music for classical and hip-life were selected based on fame and popularity. In this manner, the selection of hip-life was based on popularity, determined by sales as reported in the media (Media chart down Ghana show, 2015) at the time of the study. Also, the selection of *Mozart's variation for piano in C major* was based on the familiarity of the theme and qualities that the music embodies. The other musical types (avant-garde, country and traditional) were based solely on musical reasons like mode, structure, form and organization of musical elements.

The Classical musical type was *Mozart's variations of the piano in C major*. In general, the theme is composed of a balanced round binary form. While keeping the tempo and harmony pure and simple, the theme of this music is

varied in a number of ways: through increasing or decreasing tempo, mode change and dynamics, among others.

The Country musical type was *I'll be there for you* by Kenny Rogers from the album *Back to Home Again*. This lyrical music, performed by a male vocalist, is accompanied intermittently by strings and airy vocal sounds. This music is characterized by simple chord progressions, repeated melodic themes, slow and sometimes freely flowing tempo with a steady percussion beat. Also, the music has an upbeat which creates a light-hearted feel.

The hip-life musical type was *Adonai* performed by Ghanaian popular artists (popularly known as Sarkodie and Castro). Rendered in two languages (English and Twi), this music is half-sung and half-rapped. It has definite synthesized tones emphasized by an electronic guitar and heavy pound beat. Harmonically, the entire music is built around two chords with little dynamic variations.

The Traditional musical type titled *Yaa Yaa Kole* was an instrumental piece performed by the Ghana dance ensemble. This music combines percussion and wind instruments. In general, the piece is organized around a series of rhythmic patterns that are each different but still complementary. While the master drummer plays changing patterns, the other subordinate drums and percussion instruments make up the accompanying mosaic of rhythmic patterns. Generally, the rhythmic interplay and the harmonic effects convey a dramatic and powerful overall feel.

The New Age musical type was titled *Pilgrim* from Enya's Amaranthine (Reprise Records). Generally, this music is characterized by very basic, tonal melodies in major keys sung softly by a solo female vocalist, accompanied by sustained, synthesized tones, including muted organ and airy choral sounds.

Sustained diatonic block chords or gentle arpeggios created the bass lines. Slow and sometimes freely flowing tempos, abundant use of echoes, little dynamic contrast, and lack of percussion give the music an overall gentle dreamy feeling.

The next musical type used was Avant-garde music - *Chamber Symphony No. 1, Opus 9* by Arnold Schoenberg. This music is purely instrumental performed by a chamber orchestra. Most sections of this music are primarily dissonant while others have clearly distinguishable progressions.

All in all, the different musical types were selected to reflect varying musical styles, familiarity, complexity and preferences, musical dimensions, among others. The selected musical types were recorded to synchronize with the timing of the CRDI and played in the order listed above. The total time duration for the listening was approximately 25 minutes. The listening times were as follows: Classical, 04:44; Country, 02:46; Traditional, 03:24; Hip-life, 03:50; New-age, 03:01; Avant-garde, 2: 22.

Data Analysis Procedure

The analysis of the data involved quantitative and qualitative approaches. The initial stages of the analysis included descriptive statistical procedures: measures of central tendency (mean, median, and mode) and measures of dispersion (variance/standard deviation).The second order of analysis comprised testing the pre-set hypotheses and answering the research questions. The analysis procedures used here included ANOVA and T-test.

More so, the outcomes of the hypotheses testing were addressed with inductive analysis (evidence gathered from data and manifested by the outcome of the hypotheses), deductive analysis (top-down relationships of the outcomes to the available literature) and theoretical foundations as well as logic (personal

interpretation based on my own experiences as a researcher). During interpretation and discussion of results, ecological factors, time of data collection, were all factored in to give a comprehensive picture of the aesthetic responses.

Limitations

As with most research works, in this study there were some anticipated limitations. These limitations can broadly be classified into ecological issues and difficulties in measuring inherently subjective responses.

A major concern for the study was the concurrent manipulation of the CRDI dial and listening to music. An anticipated limitation is that due to lack of familiarity with the CRDI device, research participants may centre attention on manipulating the dial rather than synchronizing the felt aesthetic response with the movement of the dial. This may lead to the movement of the dial not reflecting any felt response to the musical stimulus. In this sense, Asmus (1999) found lower reliabilities in studies where research participants were not fairly familiar and matured enough to manipulate the CRDI device.

Another concern for this study was the general difficulty in measuring inherently subjective responses to music. This study relied on the assumption that respondents were very honest and had developed the capacity to recognize their aesthetic responses to music which may not necessarily be the case. Owing to the inherently subjective nature of responses to music, much cannot be done to ascertain the veracity of such responses.

Suggested solutions to limitations

Notwithstanding the anticipated limitations highlighted above, some practical measures were taken to reduce the errors that possibly could have arisen in this direction.

To circumvent the anticipated lack of familiarity with the use of the CRDI device, before the actual elicitation of responses commenced, ample time (10 minutes) was allowed for participants to get well acquainted with the CRDI device, its use and manipulation. Also, participants were given instructions on the use of this device. Again, the data collection was conducted in an atmosphere where researcher and some research assistants were present to offer further clarifications regarding the entire research process. All questions arising from the use of the device from the research participants were satisfactorily addressed. Furthermore, excerpts of music in each of the particular genre were played before responses were taken.

Now, the general challenge associated with measuring inherently subjective response was reduced by first, giving clear instructions on the general nature of what is to be measured. Additionally, to be sure if there was an aesthetic response to any of the musical stimulus, the questionnaire was used to confirm such a response and its magnitude compared with other listening experiences.

As a further measure, an alpha level of .05 was used in the testing of the hypotheses. Hence, a considerable margin of error was created to accommodate the limitations in the research instruments as well as any sampling error.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND DISCUSSION OF DATA

Introduction

Here, the emerging data collected on the aesthetic responses of undergraduate students are presented and discussed. The analysis was organized into three major stages: the general trend of responses, variable effects, and answering research questions and hypotheses. In relation to the initial stage, the different facets of each of the identified variables relating to the sample of this study were discussed. For the next stage, the various aspects of the variables were integrated in order to show the general meaning, relationships and interconnections between them. Finally, analysis was tailored towards proffering answers to the hypotheses and research questions set for this study. At all these levels of analysis, data was converted into graphs, figures and tables to give visual summaries and further clarification to emergent results from data.

General biographical data

Of the total 64 research participants for this study, many (62%) were within the 22-26 year group with the others (in descending order of frequency) between the age ranges of 17-21 (25%), 27-31 (11%) and finally, 32 and above (1.7%). The majority of the participants (70%) indicated that they had had some form of formal musical training ranging between one year (minimum) to seven years and above. Accordingly, 25% of participants indicated having received

formal musical training from 1-3 years, 23% for 4-6 years, and finally, 22% for 7 years and above. However, only 30% of the (non-music) participants indicated that they had had no formal musical training. Then again, many of the participants (79%) indicated that they were at least members of one musical group or the other (choir, band or orchestra).When asked to indicate the level of familiarity of the musical stimulus used, the participants indicated hip-life and classical music to be the most familiar whilst the avant-garde music was the least familiar. The other musical types (country, traditional and new age) varied across the participants. The results showed that the responses for research participants were unique for each musical selection. Essentially, group data differed principally in terms of frequency and magnitude of recorded aesthetic response.

General Trend

All the 64 participants listened to six musical types and indicated their aesthetic response using the CRDI device. Apparently, 91% of participants indicated having aesthetic response to the music played whiles the remaining (9%) indicated having no aesthetic experience to the music played. On the questionnaire, some participants indicated having no aesthetic experiences elicited to the music played. On the CRDI scale, the aesthetic data read zero for all such participants who had no aesthetic response to the music played. Strikingly, many of the participants (92%) indicated having no aesthetic response to avant-garde music (see Table 1 for details).

Table 1: Number of participants who had Aesthetic Response to each of the Musical Types

		Did you have an aesthetic experience?		
		Yes	No	Total
Musical type	Classical	63	1	64
	Country	64	0	64
	Traditional	61	3	64
	Hiplife	64	0	64
	New age	61	3	64
	Avant-garde	5	59	64

The total raw aesthetic data on the CRDI scale consisted of 65,332 scores ranging from 0 to 255 for all the research participants. From the responses of the participants, it was identified that classical and hiplife musical stimuli elicited the most aesthetic responses with a mean of 144 and 141 respectively. This was then closely followed by new age music with a mean of 112 and traditional 110 as well as country music 108. With a mean of nine, the avant-garde music played elicited the least responses with most (91%) of the participants indicating having no aesthetic experience. Figure 6 shows a linear graph of the mean aesthetic responses of the research participants to the six musical types. Mention must here be made that the participants who indicated high aesthetic response for classical and hiplife also indicated that these two musical types were the most familiar. In stark contrast, the less familiar music (Avant-garde) to the participants turned out to be the one with the lowest mean. Another finding was that the initial response to a familiar stimulus often resulted in a sudden leap in the responses from low to high.

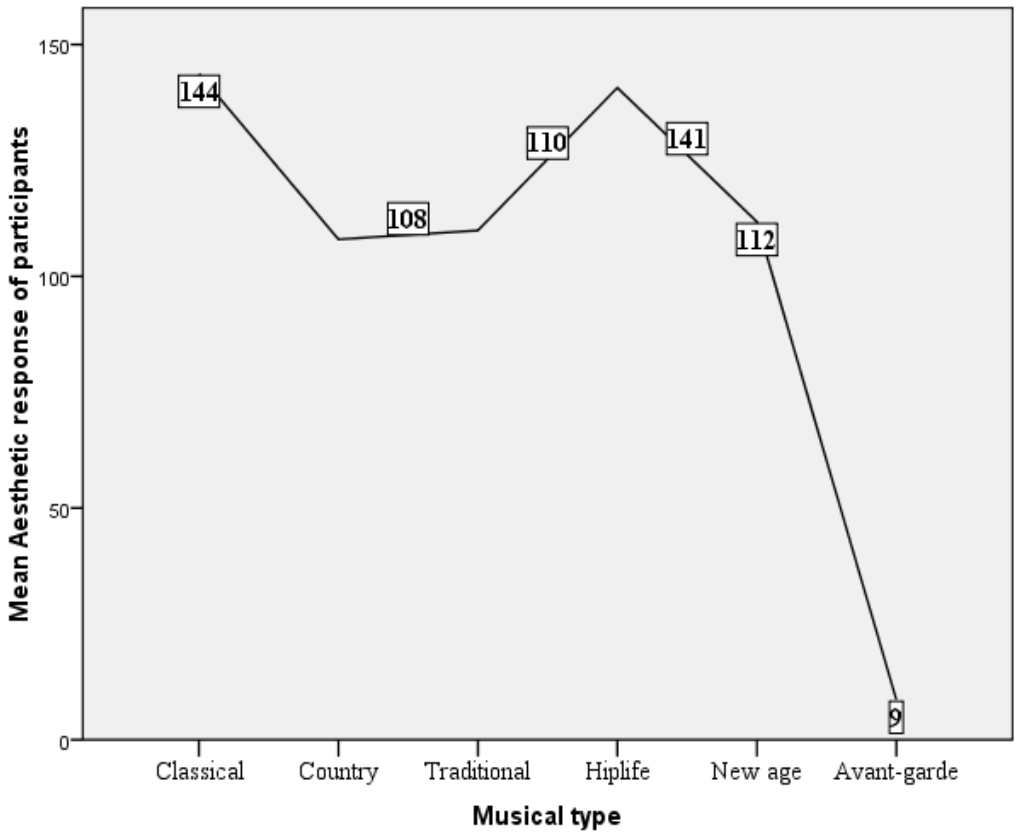

Figure 6: A linear graph showing the mean Aesthetic response to the six musical types

A study of the collative temporal graph revealed peaks, lulls and declines in the aesthetic responses. Most of the musical stimulus (country, hiplife, new age and traditional) had a progressive rise in the responses until the end of the music. That is to say that, for these pieces, the peaks in the responses were approached or arrived at gradually. The same cannot be said of the classical and avant-garde music, which had remarkable lulls, valleys and decline in the aesthetic responses. A glance at the visual representation of aesthetic responses gives a general indication that, responses were tied to the music in its entirety. However, during each musical listening episode, there probably were some musical elemental properties or interplay of such properties which drove profound aesthetic reactions.

The collective temporal graph created with the CRDI data showed comparable peaks and valleys in the responses to the musical excerpts. Beyond the general trend of aesthetic responses, the collective temporal graph enabled analysis of the responses to musical types synchronous with the stimulus across time. This brought to light the musical properties which were mostly associated with peaks, lulls and declines in the aesthetic responses along the temporal axis. Accordingly, information on the characteristics which formed the basis for the selection of the six musical types (such as modulation, change of mode, slow and fast, dynamics, dissonances) and their respective aesthetic responses were also ascertained. Also, the familiarity level of music, which is inadvertently tied to the relative simplicity or complexity of music, played a major role in the various aesthetic responses. Furthermore, variables such as gender, age and extended period of musical training also were identified to have an influence on the aesthetic responses.

In what follows, I divulged the factors which affected aesthetic responses and the general character and nature of aesthetic responses to each of the six musical types used in this study. Using collective temporal graphs created with the CRDI data, visual analysis yielded information on the aesthetic responses to the provided musical stimuli across time. The results identified in the CRDI graph showed that the responses for research participants were unique for each selection. However group data were similar for both frequency and magnitude of recorded aesthetic response. It must also be acknowledged that although some participants had an aesthetic response while listening to the music, the intensity of such aesthetic responses varied over the course of the performance resulting in both subtle and extreme changes.

Factors Affecting Aesthetic Response

Reviewing the literature on aesthetic response to music, a number of variables were identified to have an effect on the aesthetic responses of people to music (Hargreaves, North & Tarrant, 2006; Rentfrow & Gosling, 2003). These variables included gender, economic status, musical training, familiarity and age. As a result of this, I consciously sampled the research participants to encapsulate some of these variables to be explored in this study. Below are the discussions on four of these factors as they relate to this study.

Gender

From the literature on aesthetic response and gender (Finnas, 1989), clearly marked differences in the preference for different musical types between males and females were observed. In this study, there were marked differences in the musical preferences of males and females. The differences in the aesthetic response between males and females were associated with the different preferences for the musical types. Now, to ascertain whether the observed difference between aesthetic response and gender was significant, an independent sample *t*-test was conducted and examined. The *t* test revealed a statistically significant difference between males (M = 120.98, s = 78.69) and females (M = 113.38, s = 79.95), t (63) = 12.232, p = .001, α = .05 (see Appendix D for details). Overall, male participants reported significantly higher aesthetic responses than did female participants. Here, compared with the females, male participants of this study had higher musical training and this could account for the significant difference.

With regard to the various musical types, aesthetic response for the Traditional music recorded the highest difference between males and females,

whilst the Avant-garde music recorded the least difference. Here, males indicated high aesthetic responses to Traditional, Hiplife and Classical music than females. On the flip side, compared with males, females indicated higher aesthetic responses to Country, and New age. There was a slight difference between the responses of males and females to the Avant-garde musical types. As shown in the Figure 7, the bar graph provides a visual representation of the gender preferences to the various musical types. The aesthetic responses of males and females were unique for each musical type. However, the differences associated with the musical types were in terms of the magnitude of aesthetic responses.

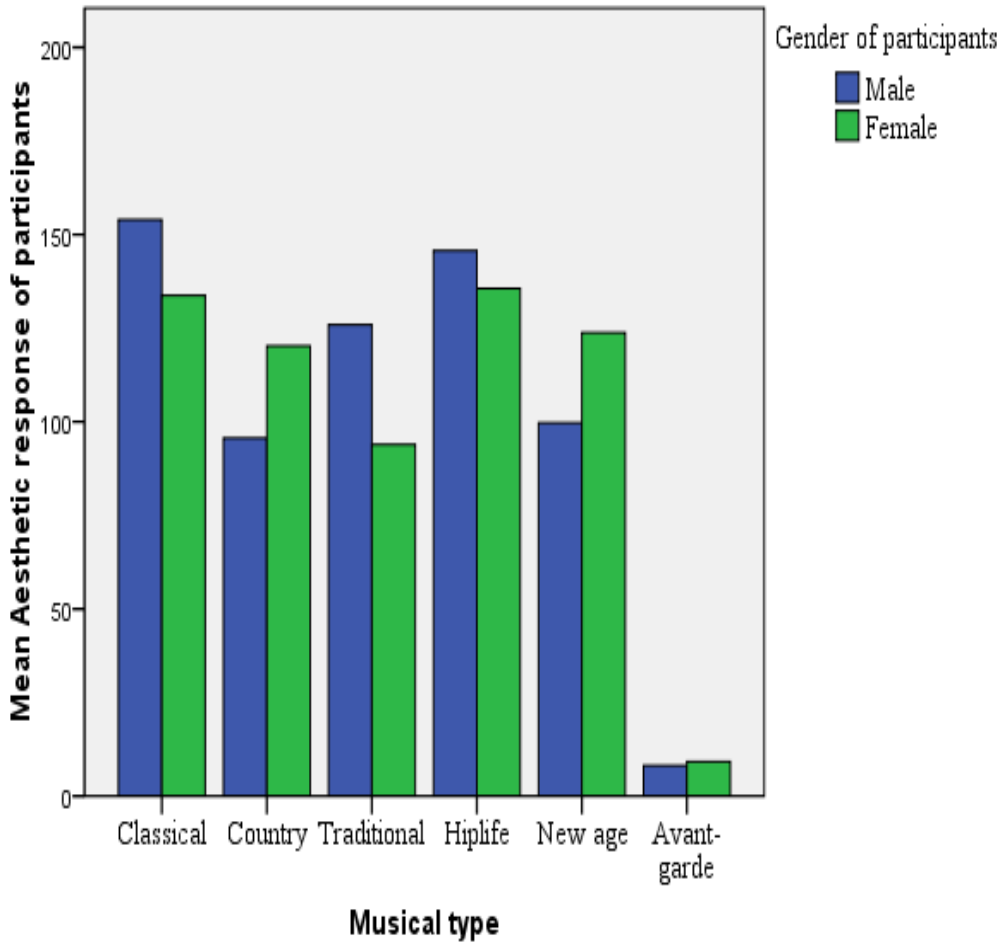

Figure 7: Bar graph of the Aesthetic response of males and females

Age

According to the literature reviewed, another factor which has been identified to have an effect on musical preference is age (Russell, 1997; Hargreaves & North, 1997). Taking a cue from previous studies (e.g. Hargreaves, Tarrant & North, 2006), each participant was classified into one of four different age groups: (17-21), (22-26), (27-31), and (32 and above). This classification was informed by the fact that undergraduate students could be 17 years old and above. Also, from the literature (e.g. Madsen & Geringer, 2004), most similar studies had used age ranges with an interval of five between the groups. Generally, responses of the various age groups to the six musical types remained largely similar (SD ≥ 74 in each case). Accordingly, a one way ANOVA was conducted to examine if there were statistically significant differences among participants in different age groups and their aesthetic responses to the different musical types. The results revealed statistically significant differences among the age groups F (3, 60) = 86.511, p = .000, α = .05 (see Table 2). This shows a quantitative evidence to support a difference in aesthetic response between the age groups.

Table 2: Age Groups of Participants and Aesthetic Response

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.6306	3	543480.231	86.511	.000
Within Groups	4.0978	60	6282.174		
Total	5.7454	63			

A Post-hoc Scheffe test was carried out to provide multiple comparisons of the various age groups. In all, research participants between the age groups of

(32 and above) differed most significantly in their aesthetic responses compared with the other age groups. Apparently, this statistical significance must be understood in the light of the fact that a small number of participants (1,7%) were in the 32 and above age group. Also, the aesthetic responses of participants in the age group (22-26) and (17-21) differed significantly (see Appendix E). Figure 8 shows a linear graph of the aesthetic responses of the various age groups.

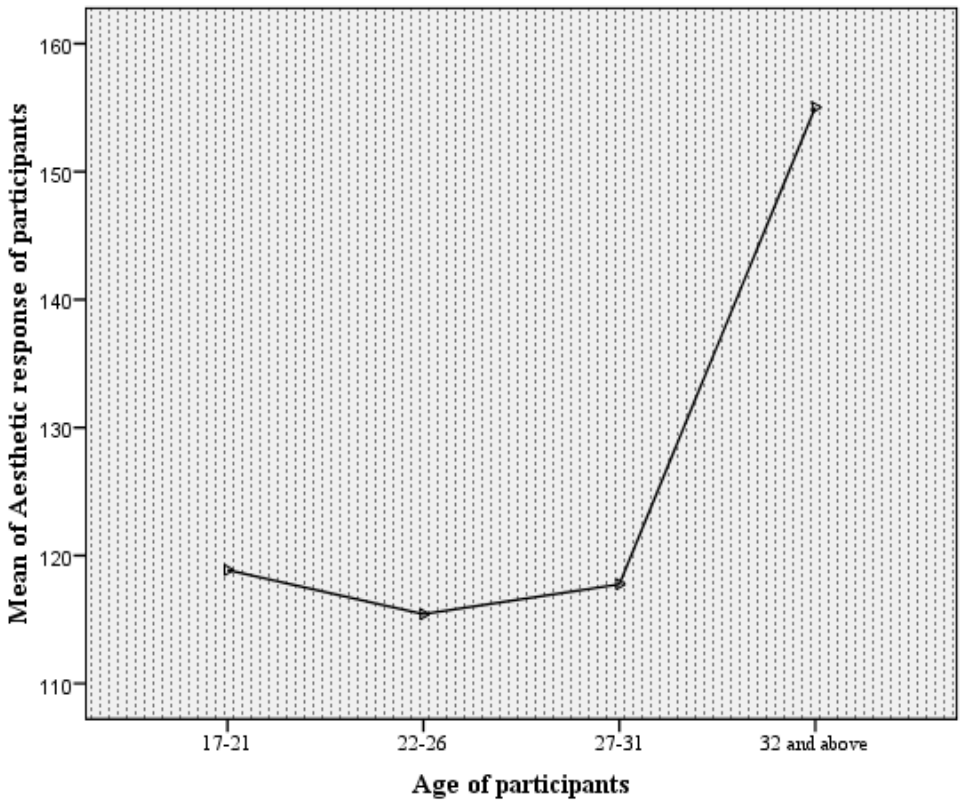

Figure 8: Differences in age groups and Aesthetic response

Now, placing the findings of this study into proper perspective yields some convergence with some previous studies. A closer look at the mean aesthetic responses of age groups revealed that the responses of participants in the age group of 32 and above were much more varied and of a wider scope than that of all the other age groups. This finding is similar to a study by Otchere (2013), who observed that by virtue of the infinite age range (32 and above), unlike the

other age groups with a range of five (5) (e.g. 17-22), it is logical for this age group (32 and above) to have a wide-ranging set of preferences and responses. Moreover, it was also observed that aesthetic responses of people in the age groups 22-26 and 27-31 did not differ greatly.

Musically, aesthetic responses for avant-garde, classical, traditional, country and hiplife remained largely the same for the first three groups (17-21, 22-26 and 27-31). This is a clear pointer to the fact that musical tastes, when developed, remain largely consistent across some number of years. Apparently, the participants in the age group of 32 and above had higher aesthetic response to avant-garde, classical, traditional and country musical excerpts.

Another important observation was that the means of aesthetic responses for avant-garde and traditional music increased by function of age. Compared with the other musical stimulus, avant-garde and traditional musical stimuli had more complex harmonic intervals and progression as well as rhythms. Possibly, this result may be an indication that by reason of the differences in the ages (which may reflect different levels of musical enculturation), some musical types become more familiar and predictable, thus resulting in preference for complex rhythmic and harmonic progressions as the age of subjects increase. Similarly, a study by Hargreaves and Castell (1987) found that preference for complex melodies increased as subjects' age increased. By extension, the observed statistical significant difference obtained in this study could be attributed to the possibility of a wide age difference between the -32 and above- age group and the other age groups.

Musical Training

Another variable which has remained very important in the discussions on aesthetic response is musical training. From the literature, Davis (2003) makes it clear that experimental studies on aesthetic responses focused on comparing listening experiences of musicians and non-musicians abound. Buttressing the aforementioned, Madsen and Geringer (1990) also observed that most of the studies on aesthetic responses have looked at musical experiences that require little prior knowledge and extensive knowledge and experience. Now, as the discussion on aesthetic experience has delved into cognitive science, the generated body of literature seems to converge on the fact that the development of conceptual structures and frameworks, which is a function of musical training, is important for processing and evaluating musical pieces, which inadvertently, gives meaning or appreciation to the music (Nieminen, Istok, Brattico, Tervaniemi, Hautilainen, 2011). This idea is crisply captured by Shimamura (2013) who writes that "prior knowledge influences aesthetic experiences" (p.18). The idea expressed herein is that musical training can serve to enhance or diminish musical behaviours. In this study, my focus for musical training was twofold: Program of study (music and non-music) and number of years of musical training.

Program of study. By virtue of their education and training, music majors are expected to differ in their responses to music compared with non-music majors. For instance, music majors are expected to develop conceptual schema for processing, analysing and appreciating musical pieces and performances. Interestingly, according to the literature, most results from these studies show that little variation exists between the two groups (Davis, 2003). Amidst all these findings, a number of studies also point to significant differences between both

groups (e.g. Madsen & Geringer, 2004). In actual fact, it was against the background of recommendations from these studies for further investigation into this subject matter that this undertaking was embarked on. In the case of this study, however, the observed differences between the responses of music and non-music students did amount to statistical significance. An independent sample *t*-test showed a statistical significance between music (M = 117.97, s = 77.91) and non-music (M = 116.30, s = 80.99) students, t (63) = -2.675, p = .007, α = .05 (see Appendix F).

Number of years of musical training. Beyond the program of study of participants, I set out to examine whether the number of years of musical training acquired could also influence the aesthetic responses. This was borne out of the fact that, regardless of the program of study in school, some non-music participants may have had some form of musical training and experiences. To this end, all the participants were required to provide information of their number of years of musical training. This constituted four main categories: None (those without any form of music training, whatsoever), 1-3 years, 4-6 years and 7 years and above of musical training. Analysis of variance revealed a statistically significant difference between the number of years of musical training and aesthetic response, F (3, 60) = 130.33, p = .000, α = .05.

Table 3: Number of years of Musical Training and Aesthetic Response

Sum of Squares		Df	Mean Square	F	Sig.
Between Groups	2.4516	3	817127.920	130.332	.000
Within Groups	4.0898	60	6269.587		
Total	6.5414	63			

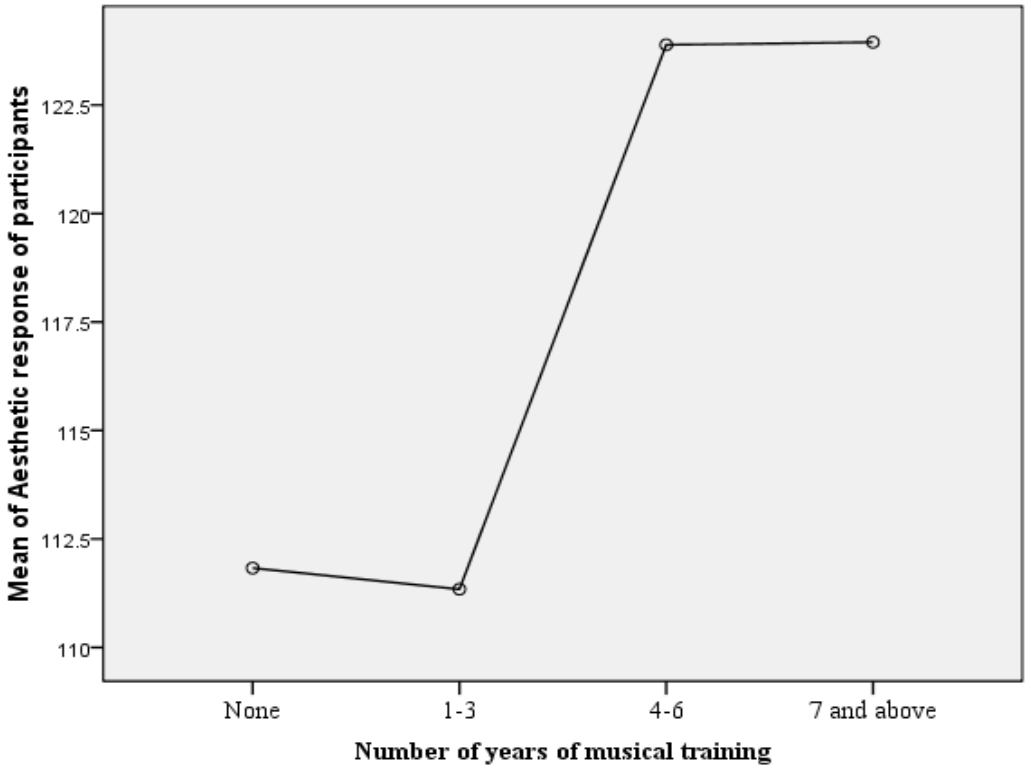

Figure 9: Number of years of musical training and Aesthetic response

A Post hoc Scheffe test was further carried out to provide multiple comparisons of the statistically significant difference between ae sthetic responses and the number of years of musical training. The test showed that the highest difference was between participants with (1-3) and (7 years and above) years of musical training (see appendix G). Between participants with (none) and (1-3) years of musical training there was no significant difference. Interestingly, between 4-6 and 7 years and above there was also no significant difference.

The implication of this result found in this study is that 1-3 years of musical training was not adequate enough to amount to any statistically significant difference between those without any musical training. However, according to this study, extended musical training (4 years and above of musical training) seems to influence aesthetic responses, at least, when compared with those without any form of musical training. Juxtaposing the findings in this study

and the classical review of studies on aesthetic responses by Davis (2003), there seem to be a convergence. Davis observed that most of the studies found little variations between the aesthetic responses of music and non-music majors. However, some studies, Davis admits, found musical training to impact on the aesthetic responses. An array of studies (Madsen & Geringer, 2004; Hancock, 2008; Radocy & Boyle, 2003), have reported that extended years of musical training strongly influenced the perception and appreciation of music. A case in point is a study by Madsen and Geringer (2004) who reported that a gradual change of pitch remained in the threshold of quite sophisticated musicians. Thus, the finding of this study that higher number of years of musical training impact on aesthetic response, yet again, is not new-fangled at all.

Musically, the intensity of aesthetic responses varied for the musical types resulting in subtle and extreme changes for the various groups. In this case, classical and hiplife musical stimulus recorded the highest differences between participants with extended number of years of musical training (4-6 and 7 and above) and those with fewer years of musical training (none and 1-3). The intensity of aesthetic response for classical music increased by the number of years of musical training. In other words, the higher the number of years of musical training, the higher the magnitude of aesthetic responses. However, traditional and avant-garde music stimulus appeared to be similar in frequency and magnitude across the groups. Then again, responses to new age and country musical stimulus appeared to be unique for each of the groups.

Analysis of Research Questions and Hypotheses

Research Question 1: What are the aesthetic responses of Ghanaian undergraduate students to different music types?

The aim of this question was to study the aesthetic responses of research participants across a number of musical dimensions and characteristics. In the light of this, the six musical types were carefully selected to represent varying modes and styles of musical engagements, musical dimensions and qualities, familiarity and complexity as well as duration. As such, each musical stimulus was selected based on a predominant musical idea or property. Using collective temporal graphs, created with the CRDI data, visual analysis was carried out between each musical stimulus and the resultant aesthetic response.

Now, synchronizing the six musical types with the aesthetic response (using the CRDI) yielded information on the nature of responses and the most associated musical dimensions such as modulation, change of mode, dynamics, tempo as well as dissonant sounds. In what follows, I divulge the aesthetic responses to each of the six musical types used in this study.

Classical Music (*Variations for piano in C major by Mozart*). Generally, this music is considered to be an ornamental type of variation. Qin (2005), states that the melody of the theme dissolves "into notes of shorter value, playfully embroidering the melody with runs, trills and arpeggios, utilizing transposition into various registers of the keyboard" (p.107). This music was purposefully selected to aid in studying the responses of participants across a number of musical elements, dimensions and dynamics. Some of these included a change of mode from major to minor and vice versa, contrasting dynamics such as loud and

soft, theme and variation, among other things. To this end, five (5) clearly distinguishable variations out of Mozart's entire twelve variations were used in this study. A collective temporal graph using the CRDI data for all the participants who listened to this musical excerpt was created to visualize the aesthetic responses.

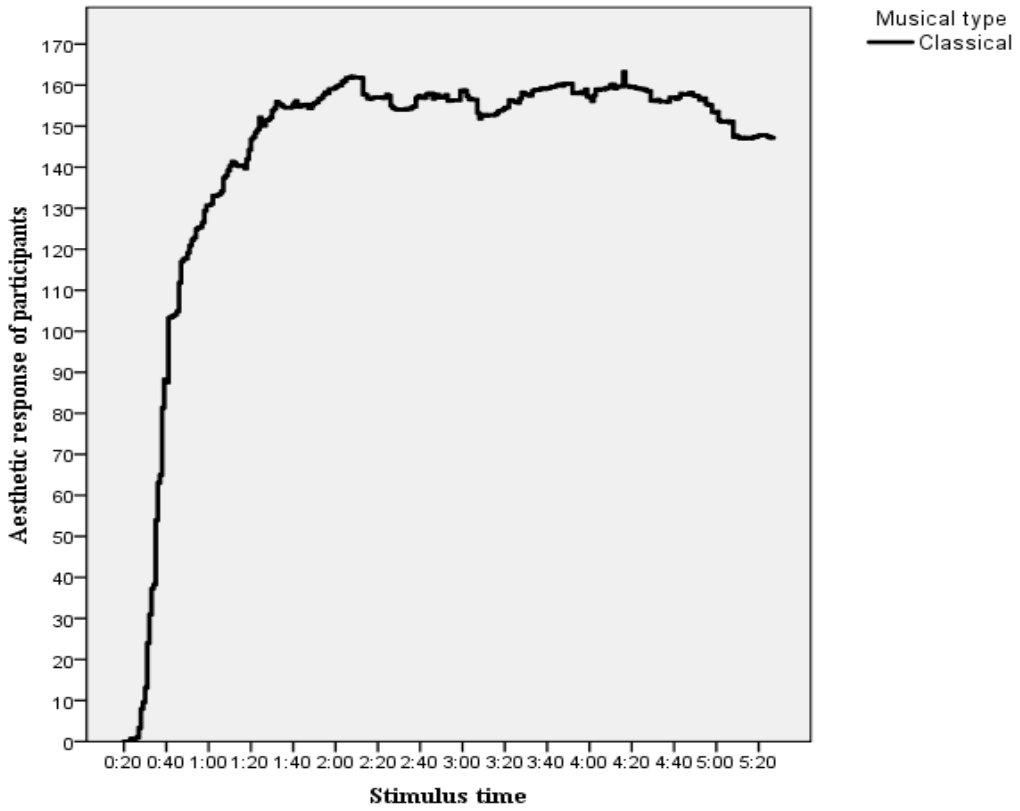

Figure 10: Collective temporal graph of Aesthetic response to the Classical music

Generally, an interesting point to observe is that the aesthetic response to classical music gradually ascended from the start of the music culminating in the first pinnacle of the response, after which it declined. From that point on, the response vacillated until the end of the music. The gradual rise in the response from the start of the music (occurring approximately between 0:20 and 1:30 minutes) was the period of the theme and the first variation. After a simple and unadorned theme, with the same harmonic support, the melody line is embellished

with sixteenth-note turn in variation (I). This may be an indication of an initial preference for this familiar theme.

Also, it can be seen that the pinnacle of the aesthetic response occurred between 1 minutes 40 sec and 2 minutes (Variation IV). At this section, according to Qin (2005), in his analysis of this music, "Mozart shows more capacities and idiomatic aspects of the piano" (p.110). The observed lull in the response, after the pinnacle, ensuing in an extended vacillation in the response spanning from 2 min 20 sec to 3 min 40 sec, musically, marked the period of change of mode. The most obvious character of this section is a change of mode from major and minor. This section is very expressive, soft and nostalgic. The left hand imitates the melody in a lower pitch, creating an echo to the upper voice, which increases the dramatic feeling (Qin, 2005).

Generally, this music reflects a work which was varied in many ways; through increasing or decreasing of tempo, change of mode, varying the figures of principle notes by decorating and combining several other ornamental techniques. The highlights of the aesthetic responses to the various sections of this musical excerpt give some insights into the preferences and sensitivity of the participants of this study to music. From the foregoing, it remains to say that the peaks in aesthetic responses were not swift, but they were approached gradually.

Country Music (*I'll be there for you* - *Kenny Rogers*). From the visual analysis, as shown in Figure 11, it is clear that aesthetic responses kept on ascending until the end of the music. The gradual rise in the aesthetic response indicates an overall preference for the entire music.

Musically, the most striking change in the music is a smooth modulation to the supertonic key. Prior to the said modulation, there are no marked changes in the structure, instrumentation, melodic and harmonic progressions of the music. Here again, the collective temporal graph showed that the peak in the aesthetic response was gradually approached. The aesthetic response to this music portrayed an overall appreciation and preference for the entire music.

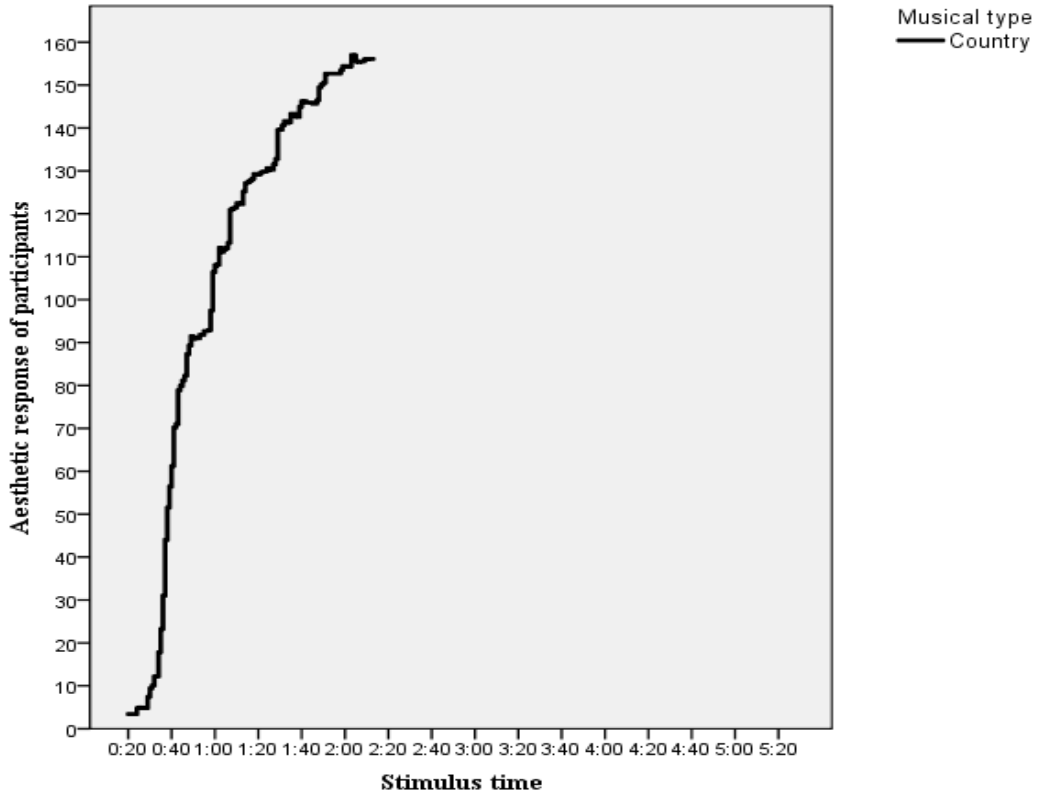

Figure 11: Collective temporal graph of Aesthetic response to the Country music

Traditional Music (*Yaa, Yaa Kole - performed by Ghana dance ensemble*). Against the accompanying background of a mosaic of rhythmic patterns, the principal instruments, xylophones and flutes (atenteben), expounded the main theme of this music through the medium of extemporization, imitation and call and response and repetitions. Now, looking at the visual analysis, as

shown in Figure 12, quite interesting peaks and valleys along the temporal axis are brought to light.

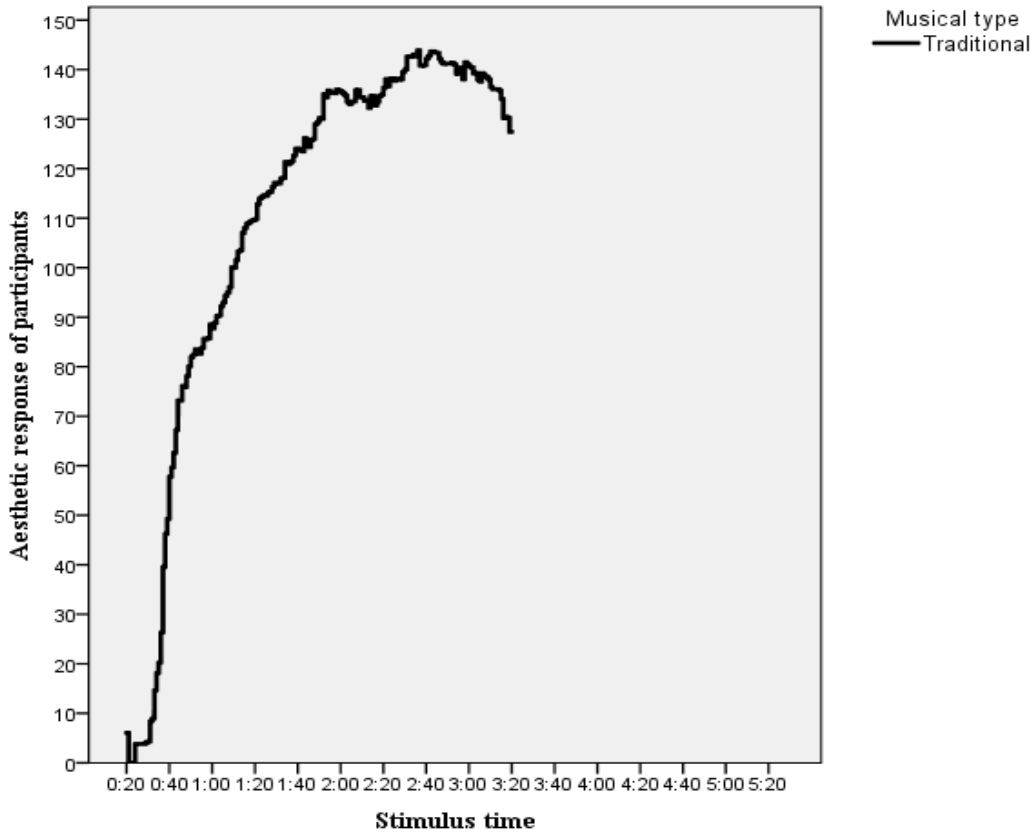

Figure 12: Collective temporal graph of Aesthetic response to the Traditional music

Synchronizing the observed highlights of the response with the musical stimulus, the introduction of flutes which imitated the melody and rhythmic patterns of the xylophone marked the predominant distinguishing feature of this section of the music. The acme of the aesthetic response from approximately 2 min 20 sec to 2 min 40 sec, musically, was preceded by an interspersion of a new theme which is a popular xylophone folk music.

Another highlight of the response was the apparent decline in the response following immediately after the climax was associated with a repetition of fragmentary ideas from the main theme. At this point of the music, the same idea

was repeated over and over until the music quietly faded out. This finding aligns with an observation made by North and Hargreaves (1997) that when music becomes predictable with repeated exposure, liking should wax and wane as a person chooses to or not to listen to a given piece of music.

Hiplife Music (Adonai - performed by Castro and Sarkodie). Selected based on its popularity and fame, this music recorded high magnitude in the general aesthetic responses. Generally, this music was performed by male vocals, half-sung and half-rapped, with electronic guitar, synthesized tones and a steady percussion beat. This music is generally loud with a fast tempo, little dynamic variations; heavy pounding danceable beat emphasized by drums and repeated bass lines. It also has a chorus which is sung after every rap section of the music making it is easy to listen to. The visual representation of the collective response revealed a sudden leap from low to high which occurred between 0:20 and 0:40 sec. After this point, the response gradually scaled up towards the end of the music. The initial leap in the response may be a pointer to an initial preference for this music by reason of its familiarity to the research participants. Essentially, familiarity with this music, in particular, played a significant influence on the aesthetic responses.

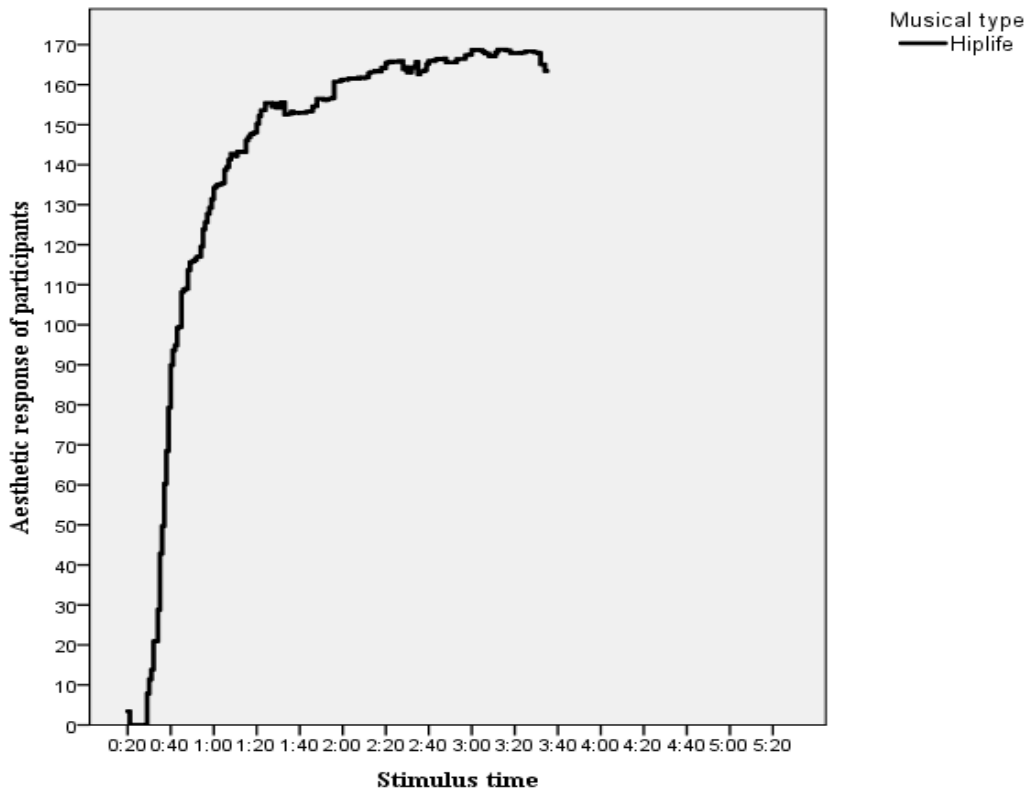

Figure 13: Collective temporal graph of Aesthetic response to the Hiplife music

New Age Music (*Pilgrim- Enya*). Generally characterized by a very basic, tonal melody sung softly and slowly and accompanied by sustained, synthesized tones, including muted organ and airy choral sounds, most participants indicated having an aesthetic response to this new age music. Looking at the collective graph of the responses, it can be observed that responses gradually ascended along the temporal axis until the end of the music. The selection of this music was based on its clearly distinguishing features such as the abundant use of echoes, little dynamic contrast, and lack of percussion which gave the music an overall gentle dreamy feeling.

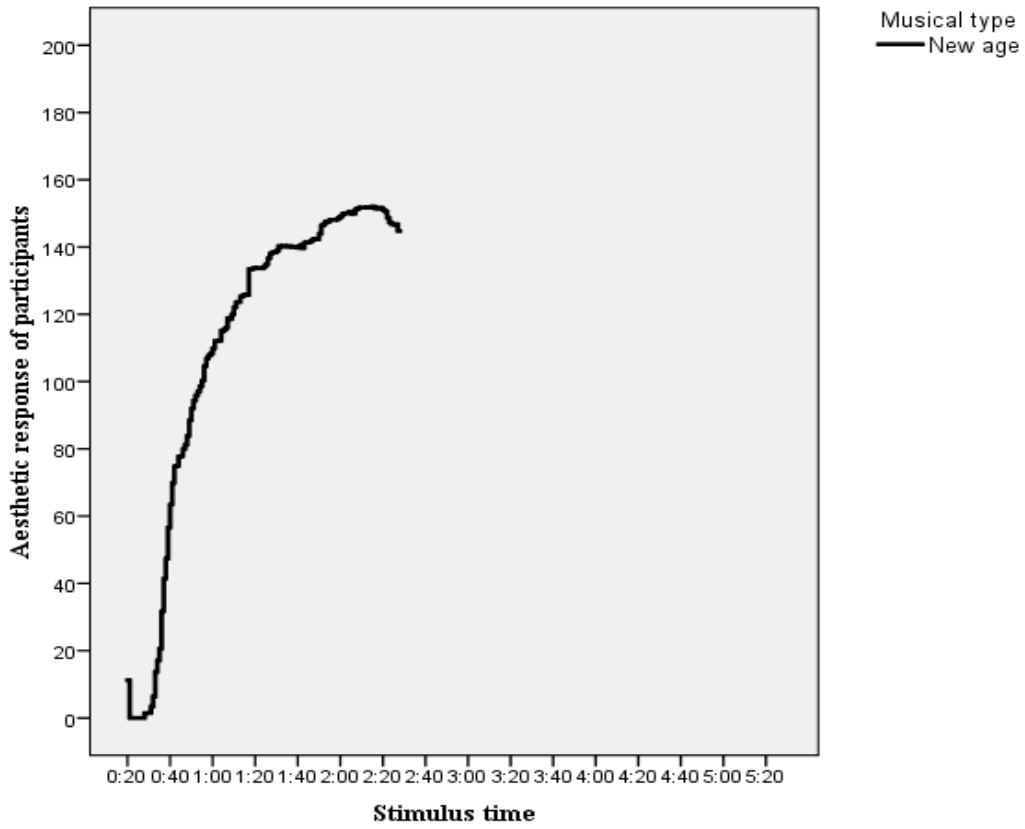

Figure 14: Collative temporal graph of Aesthetic response to the New-age music

Avant-garde (*Chamber Symphony No. 1, Opus 9* by Arnold Schoenberg). The selection of the avant-garde musical type was based on the fact that it did not have any tonal centre and the melodic and harmonic progression did not follow any conventional trend. Most sections of this music were primarily dissonant while others had clearly distinguishable progressions.

In the analysis of the responses to the avant-garde music, research participants had comparably low aesthetic responses. And as indicated earlier, most respondents claimed having no aesthetic experience to the avant-garde music. Essentially, as shown in Figure 15, regardless of the general low response of this music, the collective graph of the responses showed two extended valleys along the temporal axis.

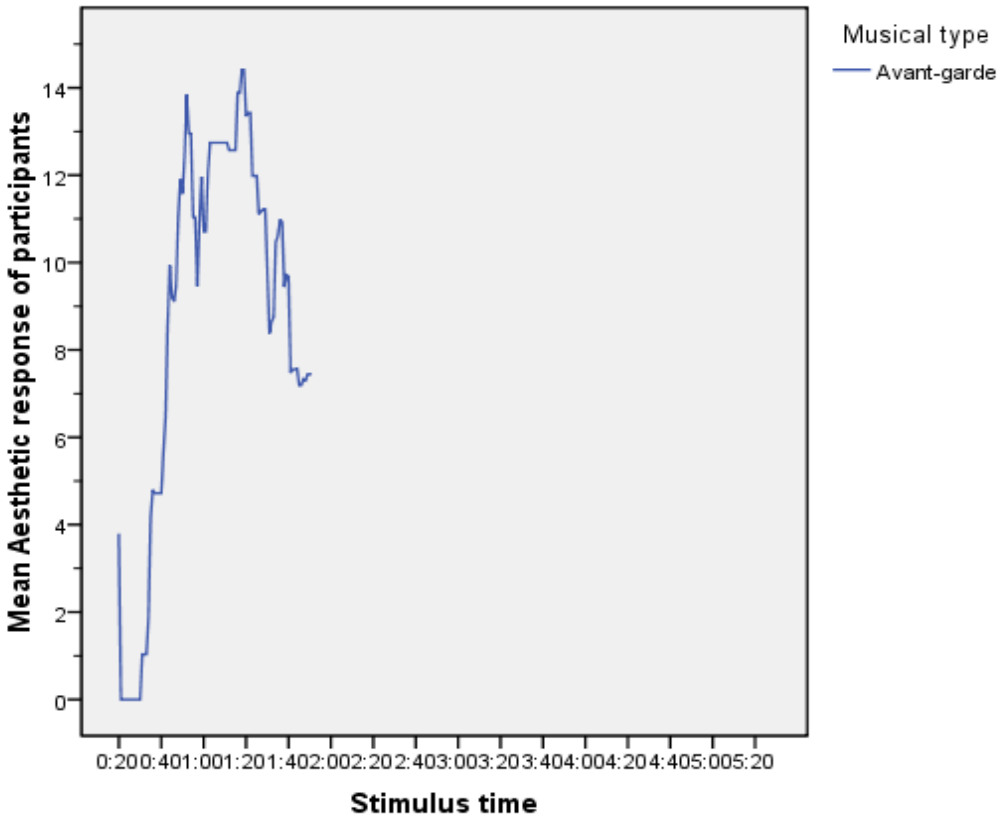

Figure 15: Collective temporal graph of Aesthetic response to the avant-garde music

Research Question 2: What differences exist in the aesthetic responses of Ghanaian music and non-music students?

Here, unlike the first question, a corresponding hypothesis was set to test for statistical significance difference between the aesthetic response of music and nonmusic students. In relation to this study, aesthetic responses to the musical stimulus differed quite dramatically across the two groups. To test for statistical significance, an independent sample *t*-test was conducted. The results of this test showed a statistically significant difference between the aesthetic responses of music ((M =117.97, s = 77.9) and non-music students (M = 116.30, s = 80.98), t (63) = -2.675, p = .007, α = .005 (see Appendix F). The implication of this is that the aesthetic responses of music students differed significantly from non-music

students. Therefore, there was enough statistical evidence to reject the null hypothesis. Consequently, the alternate hypothesis that specified a difference between the aesthetic responses of music and non-music students was therefore accepted.

By implication, the results showed that the general expectation for aesthetic responses to differ between music and non-music students was validated. Apparently, this statistically significant difference between music and non-music students could be attributed to the fact that, by virtue of musical training and experiences, preferences and tastes of music and non-music students may be different.

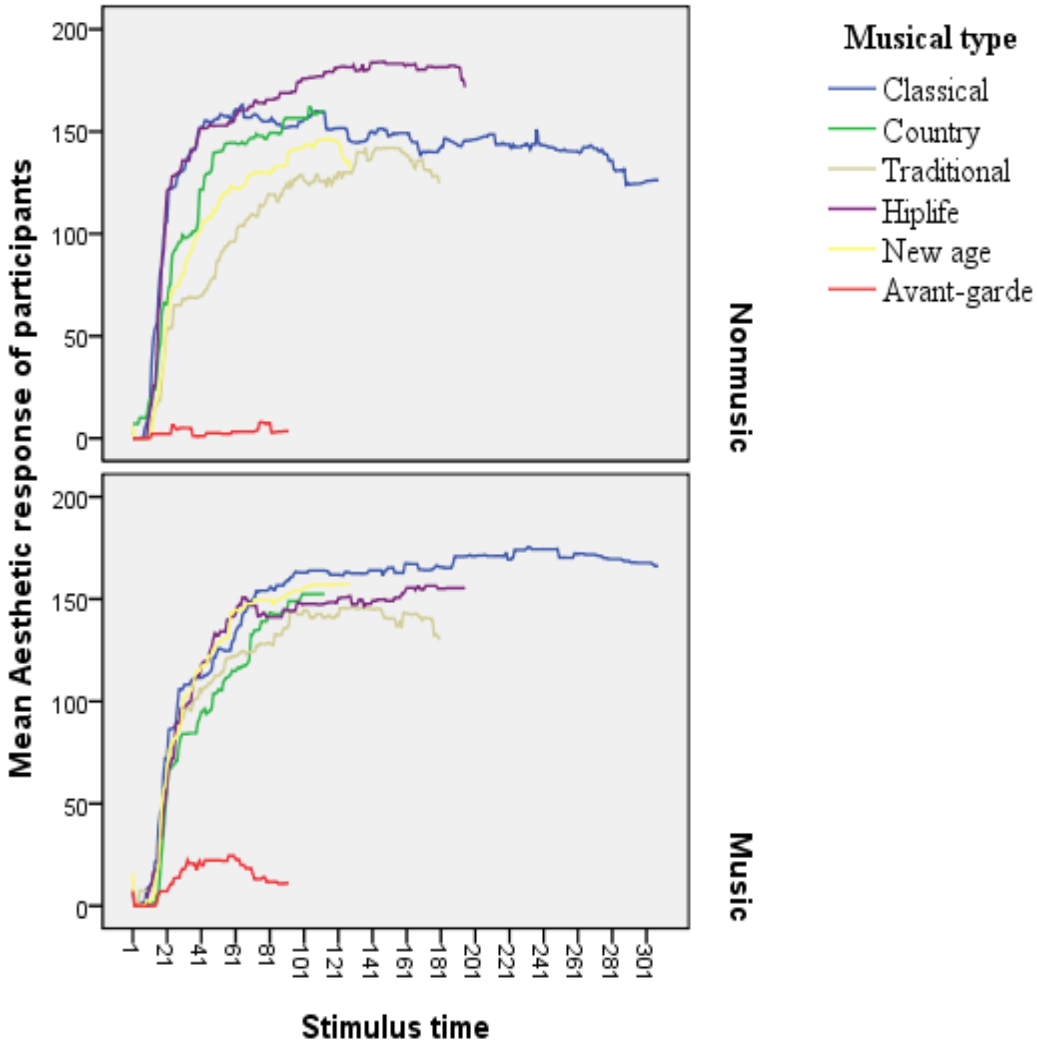

Figure 16: CTG of Aesthetic response of music and non-music students

Now, from the visual display as shown in Figure 16, there were some quite interesting observed differences in the frequency and magnitude of aesthetic responses to the musical types among the two groups. Virtually, the intensity of the aesthetic responses varied over the course of the performance resulting in both subtle and extreme changes for both groups.

From the foregoing, it may be plausible to assume that, in this study, the music students seemed to have favourable responses to the relatively complex musical stimulus whilst non-music students preferred the relatively simple and easy to listen to music. Alluding to Berlyne's arousal theory, it is likely that the music students, by reason of their training and experiences, found hiplife and country musical stimuli extremely simple with little elements of novelty and surprise, and thus resulted in low arousal level. On the flip side, the relatively complex music stimuli (avant-garde, classical and tradition) caused high arousal for the non-music major resulting in low preference in comparison with music majors. With regard to the aesthetic responses of music and non-music majors to the selected musical stimuli, much more details into the differences were gleaned.

Classical. A quick glance at the collective temporal graph of music and non-music students revealed a clear-cut difference in the aesthetic response to the classical musical type. That of the non-music students ascended to a point and begun to decline gradually whilst that of the music students kept on progressing until the end of the music without any conspicuous decline or fall in response. As shown in Figure 17, the collective temporal graph (CTG) provides a visual representation of difference between the aesthetic response of music and non-music students to the classical musical type.

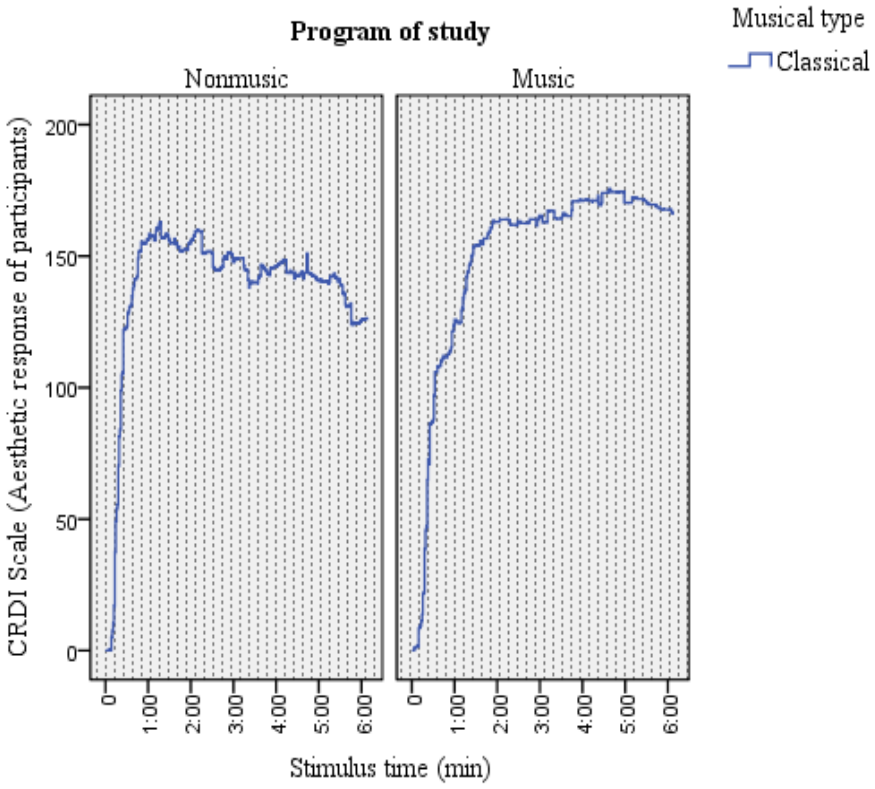

Figure 17: CTG - Music and Non-music students to the Classical music

Accordingly, the opening section of the music (variation I) recorded a similar leap in the response (0-160 on the CRDI scale) for both music and non-music students. This section marked the introduction of the simple, unadorned popular theme. As already stated, this portrays an initial preference for this popular theme due to its familiarity for both groups. Variation III- embellished with sixteenth note-turn, the melody is treated in a rapid, wide ranging arpeggiation in triplets in the right hand. Here, the intensity of the aesthetic response was much higher for music students.

Variation IV – was the next section of this music with the most obvious character of change of tonality from major to minor mode. This section of the music marked the point of divergence in the responses of music and non-music students. Whilst responses of non-music students declined, that of the music students continued to rise. It may be plausible to assume that based on musical

knowledge and experiences, music students derived more appreciation to hear the same theme notes but with a feeling different than the major key.

Variation XI – Here, while music students reacted profoundly to this section, responses of non-music students had a further decline to the conspicuously calm melody which quietly smoothes in, shaped by a dotted-eighth-sixteenth. Aesthetic responses of both groups to the last section (variation XII) was no different from the previous variation. Musically, this section was characterized by a return of the theme to a high-spirited last section with great volume more.

Overall, the aesthetic response to the classical musical paints a picture of how music and non-music students responded to the music. What may account for the identified differences may be prior knowledge for processing, interpreting and appreciation 'theme and variation' musical form. Supposedly, the prior knowledge of how 'theme and variation' is composed provided expectations for music students to interpret and listen to salient features.

Country. Unlike the classical musical stimulus with clearly defined sections, the selected country music was strophic in form with the same melodic and harmonic support. A noticeable musical change is a smooth modulation to the supertonic key. As evidenced in the collective temporal graph, the aesthetic responses of music and non-music students were pretty similar without any marked changes or differences in the responses.

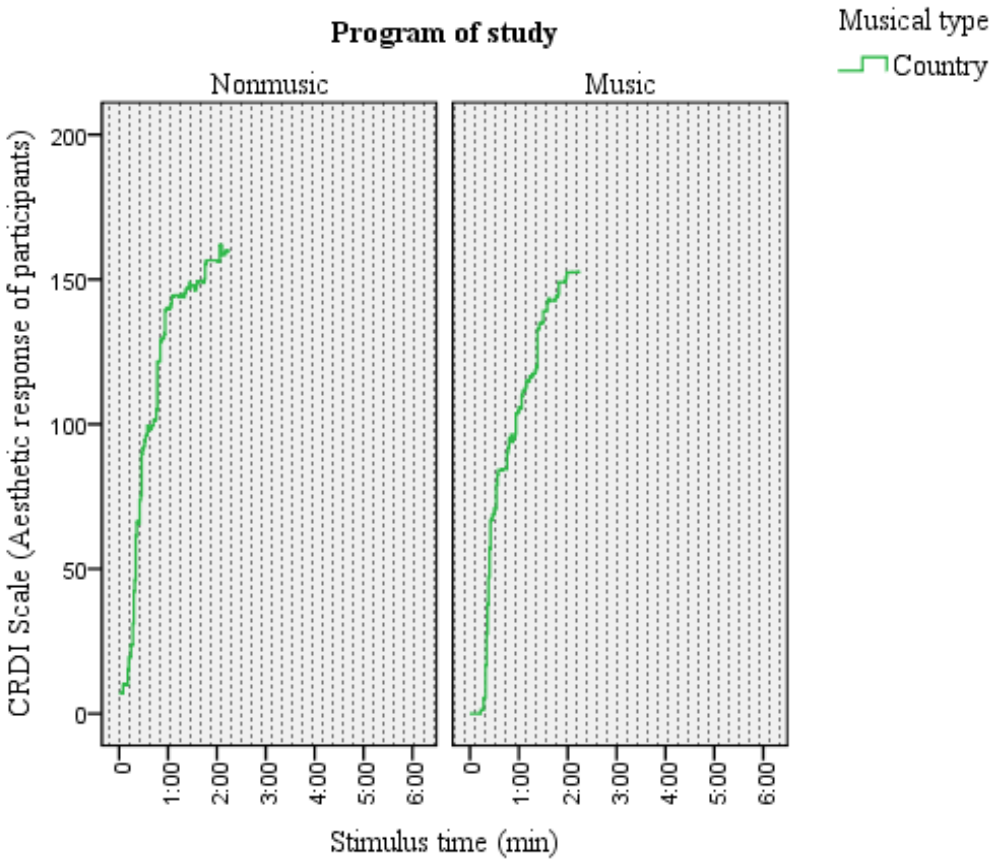

Figure 18: CTG- Music and Non-music students to the Country music

From the graph, as shown in Figure 18, both groups had an on-going rise from the start to the end of this music. However, in intensity, the aesthetic response of non-music students was slightly higher than music students (see Appendix H). The visual display of the aesthetic responses shows a similar progressive rise in responses for music and non-music students.

Traditional. Selected based on its blend of local instruments (drums, flutes and xylophones) and the interplay of relatively complex rhythms, the inclusion of the traditional music was to study the aesthetic responses of participants to Ghanaian traditional musical idioms, elements and rhythms. Accordingly, all participants indicated having an aesthetic response to the traditional music. In terms of magnitude, the mean aesthetic response of music

students was higher than that of their non-music counterparts (see Appendix H). However, in essence, the responses of both groups had similar rise, peaks and decline. Hence, musically speaking, there were no marked differences in the responses of the two groups to this music. The collective temporal graph, as shown in Figure 19, gives a visual representation of the aesthetic response along the temporal axis.

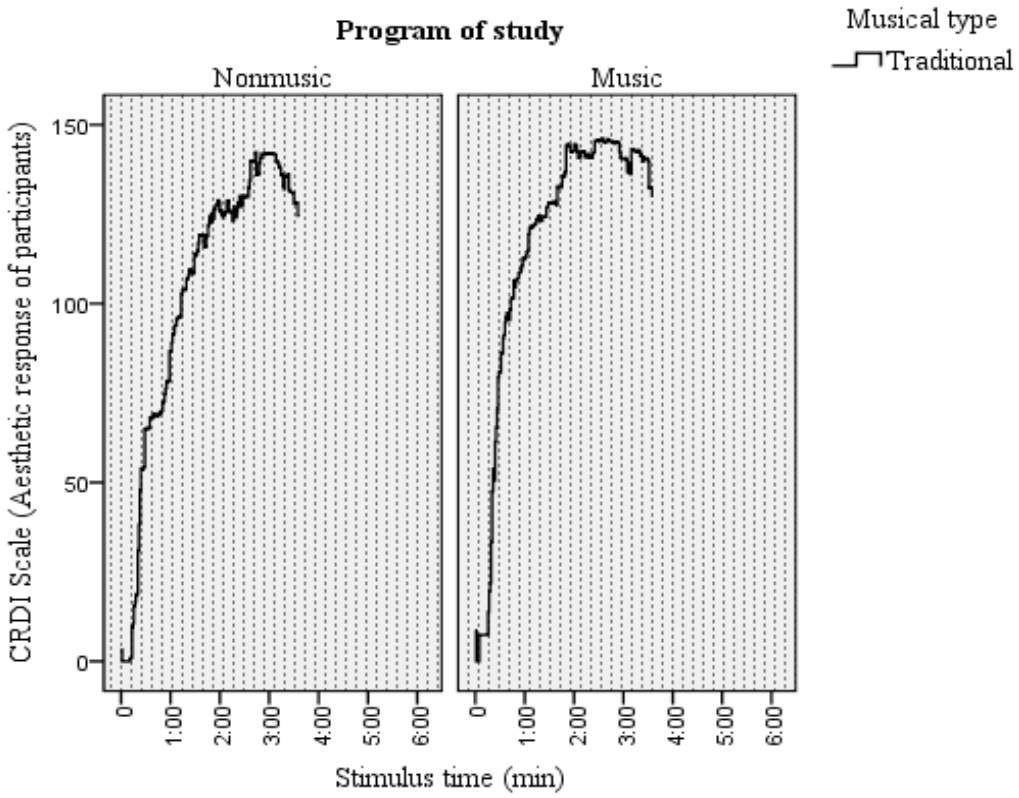

Figure 19: CTG-Music and Non-music students to the Traditional music

Hiplife. Selected based on its familiarity and popularity, aesthetic responses of music and non-music students revealed a great deal of difference in the magnitude of likeness for this musical type. Taken as a whole, aesthetic responses of both groups were tied to the entire music rather than any specific musical quality. Nonetheless, compared with music students, non-music students experienced more preference for this music in this study (see Appendix H for

details of the means of aesthetic responses). Alluding to Berlyne's theory, the relative complicity and simplicity of this music can account for the observed difference in the magnitude of responses. To the non-music students, this music may have invoked a fairly moderate degree of arousal resulting in higher preference. By contrast, music students, by their experiences, found the simplicity and predictability of this music lowly in arousal, hence the relatively low preference.

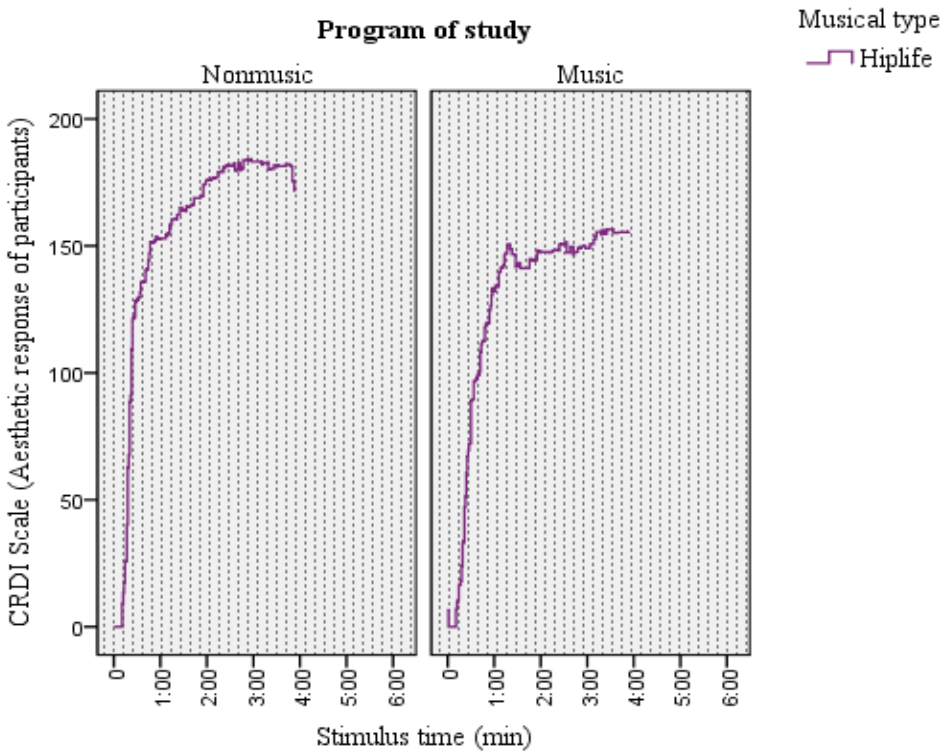

Figure 20: CTG- Music and Non-music students to the Hiplife music

New age. From the visual display, as shown in Figure 21, there was a gradual divergence in the response of music and non-music students towards the end of the music. Taken as a whole, responses were fastened to the entire music rather than any musical property. However, this music was selected to study how participants would respond aesthetically to the abundant use of echoes, little

dynamic contrast, and lack of percussion which gave the music an overall gentle dreamy feeling.

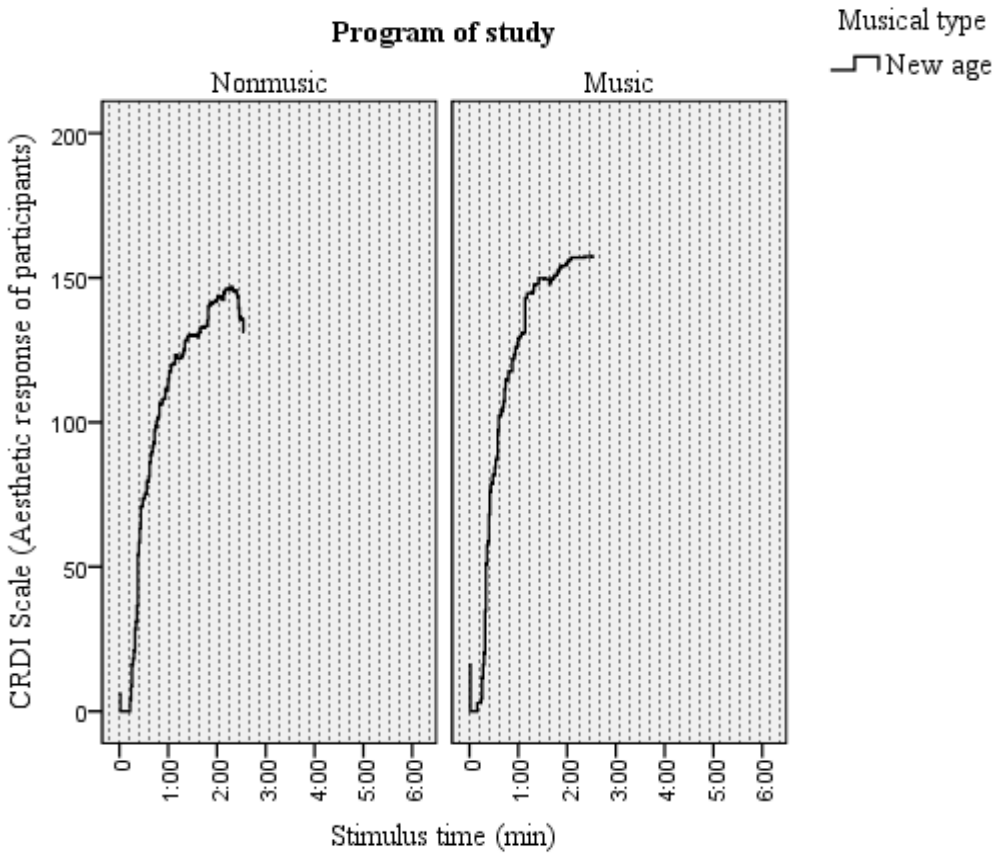

Figure 21: CTG- Music and Non-music students to the New-age music

Avant-garde. Response to the avant-garde music was generally very low with responses less than 50 on the CRDI scale. Unsurprisingly, 59 participants indicated having no aesthetic response to this music. The remaining 5 participants who indicated having an aesthetic response to this music were all music students. Regardless of the absence of aesthetic response to this music (predominantly dissonant and departs for the conventional harmonic progressions), music students had a relatively higher response than non-music students as shown in Figure 22.

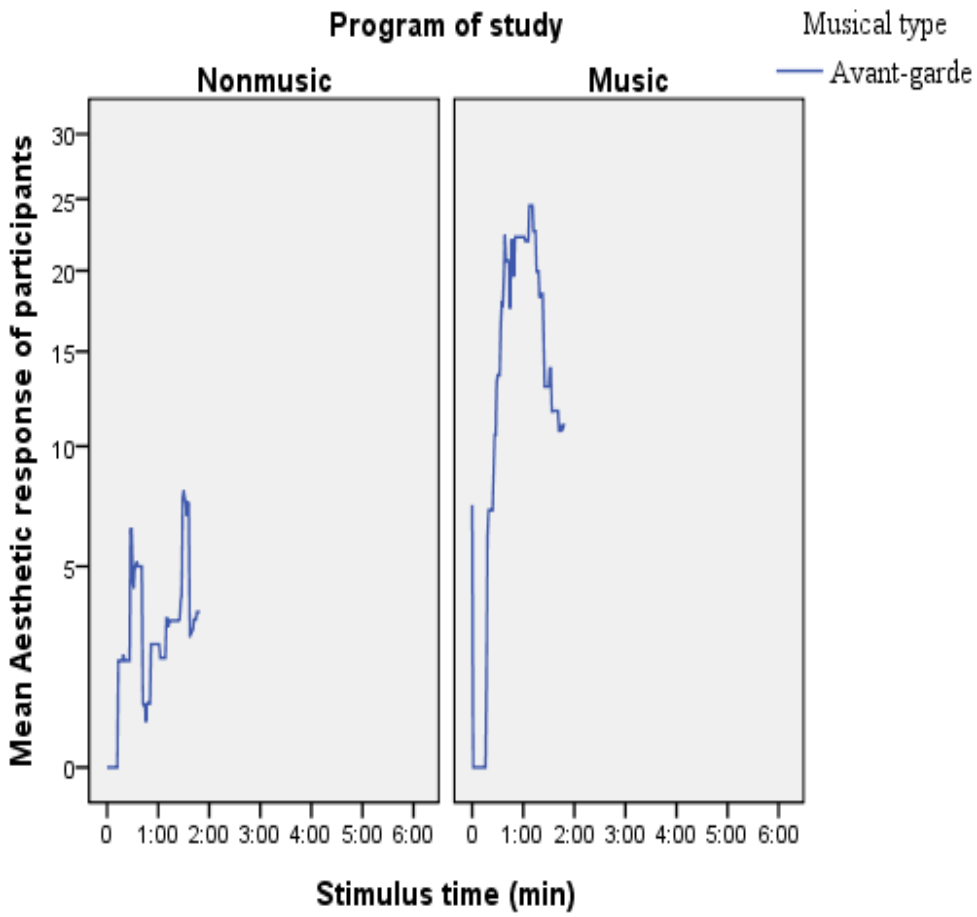

Figure 22: CTG- Music and Non-music students to the Avant-garde music

The aim of this research question was to ascertain the differences in the responses of music and non-music students in relation to the musical properties and dimensions of the selected musical stimulus (e.g. modulation, timbre, and dynamics). It remains to say, in conclusion, that, by virtue of their training, the music participants were more open to appreciating the musical types than their non-music counterparts. Responses to the classical musical excerpt yielded the most information of the differences between the two groups. Without mincing words, aesthetic responses to the other musical stimuli differed in terms of magnitude of liking. Again, the visual representation of the responses revealed a progressive rise in the aesthetic responses. Seemingly, from the collective

temporal graph, it was evident that aesthetic responses were tied mostly to entire music rather than any particular musical style or dimension.

Research Question 3: What is the relationship between familiarity of music played and aesthetic response among Ghanaian students?

For this research question, a corresponding null hypothesis and its associated alternative hypothesis were set to be tested. By reason of the ordinal nature of the variable (level of familiarity), a Spearman's correlation was employed. Consequently, the test revealed a statistically significant relationship between aesthetic response and the level of familiarity of music: r (63) = .370, p =.000, α = .05.

The decision rule used here was that if $p \leq \alpha$, then reject the H_0. In this study, 0.00 was less than .05, therefore the H_0 was rejected. Taken together, there was enough statistical evidence to refute the null hypothesis which specified no significant relationship between familiarity of music and aesthetic response. Subsequently, in this study, the alternative hypothesis was accepted. The result also indicated a positive correlation between the two variables. As shown in Table 4, a detailed account of the correlation between familiarity of music and aesthetic response is given.

Table 4: Spearman's rho correlation between familiarity of music and Aesthetic response

			Level of familiarity of music played	Aesthetic response of participants
Spearman's rho	Level of familiarity of music played	Correlation Coefficient	1.000	.370**
		Sig. (2-tailed)	.	.000
		N	64	64
	Aesthetic response of participants	Correlation Coefficient	.370**	1.000
		Sig. (2-tailed)	.000	.
		N	64	64

Beyond the statistical analysis, visual analysis of the aesthetic responses on the CRDI graph revealed that different levels of familiarity with musical stimulus yielded different aesthetic responses to the music (see Appendix I for the scatter dots/plots of this distribution). In this study, the identified relationship was that the most familiar stimuli (hiplife, classical) recorded higher aesthetic responses on the CRDI scale, whilst the less familiar stimulus, avant-garde music, recorded the lowest responses. For the other musical types (country, traditional and new age), the more familiar the stimulus were to the participants, the higher the aesthetic responses on the CRDI scale. The foregoing is a pointer to the claim of the mere exposure theory - the more exposed we are to a stimulus, the more we tend to like it.

Research Question 4: To what extent does participation in musical groups influence Ghanaian students' aesthetic responses?

The aim of this question was to ascertain whether participation in musical groups such as choirs, brass ensemble and orchestra could adversely influence the

aesthetic responses to the selected musical stimuli. A Pearson's moment correlation was employed since data from both variables (aesthetic response and participation in musical groups) were continuous. This test showed that the aesthetic response and participation in musical groups did not share any particular correlation. That is there is no strong correlational relationship in one direction or the other: r (63) = .000, p = .844, α =.005 (see Table 5 for details).

Table 5: Pearson's moment correlation of participation in musical groups and Aesthetic response

		Participation in musical group(s)	Aesthetic response
Participation in musical group(s)	Pearson Correlation	1	.000
	Sig. (2-tailed)		.844
	N	64	64
Aesthetic response of participants	Pearson Correlation	.000	1
	Sig. (2-tailed)	.844	
	N	64	64

The implication of this result is that the research participants in musical groups did not directly have an influence on aesthetic responses. Therefore, there was not enough evidence to refute the null hypothesis that predicted no significant relationship between participation in musical groups and aesthetic responses. And so, the alternative hypothesis was therefore rejected. Possibly, the small number of participants (20%) who indicated having no association with musical groups could be a major reason for no correlation between the two variables.

Discussion

Thus far, the analysis of the data has predominantly been quantitative. However, according to the design of this study (concurrent, embedded

correlational model), qualitative analysis is embedded in a predominantly quantitative analysis. As such, the emergent themes and patterns within the data are discussed without any recourse to statistical significance.

To start with, the purpose of this study was to examine the aesthetic responses of music and non-music students to six musical types. From a broader perspective, in this study, the results showed that the level of familiarity with the music had a telling effect on aesthetic responses of research participants. For the most part, the initial response with a familiar musical stimulus yielded a rise in the aesthetic response. It is important to note that the aesthetic responses to each of the six musical types reflected different levels of familiarity for the participants. To single out for mention, the classical and hiplife musical types which recorded the highest aesthetic responses were also the most familiar stimuli. Owing to the Ghanaian media airwaves, this hiplife music was played frequently resulting in massive popularity and general appeal of this music around the period this study was conducted. Also, the theme of the classical music used in this study, was adopted from a popular French folk song. According to Qin (2005, p.106) "today, the tune is familiar in English-spoken countries as "Twinkle, twinkle little star." In Ghana, this endearing, simple, nursery rhyme has become a popular children's song. Thus, it stands to reason that the hiplife and classical musical types were the most popular to the participants. In stark contrast, the absence of aesthetic responses to the avant-garde music to most of the participants could be due to the fact that this musical type is generally unknown to the average Ghanaian. Only a handful of music students with seven and above years of musical training indicated having an aesthetic response to the avant-garde music. Seemingly, this finding may be an indication that preference and appreciation of avant-garde music is dependent on the development of

conceptual schemas for processing this music as well as adequate exposure which comes with extended years of musical training. Alluding to the mere exposure theory provides insight into this observed relationship between the level of familiarity of the musical type and the level of aesthetic response in this study.

As a corollary to the above, another emergent pattern found in this study was that familiarity with certain sections of the music resulted in high aesthetic response. In this sense, the classical and traditional musical stimuli with familiar themes had aesthetic responses peaking at those sections of the music. This finding gains support from several other studies (Silvia 2005, Hargreaves, 1986), which have reported the effects of familiarity of music on the aesthetic emotions of interest and enjoyment.

Taken together, another important finding was that the vocal musical stimuli (country, hiplife and new-age) were preferred most resulting in higher aesthetic responses than the purely instrumental pieces. Compared with the instrumental pieces (classical, traditional and avant-garde), the aesthetic responses to the vocal pieces were the highest in magnitude. Understandably, this finding is unsurprising because of the wide availability and accessibility of vocal music in the Ghanaian cultural setting where the research participants were drawn. Coupled with the fact that the Ghanaian musical environment is inundated with vocal music, almost every form of musical engagement or activity (media, churches, schools among others) is accompanied by singing. Symphonies and concertos among others do not abound as much as vocal music in Ghana.

In terms of the nature and character of aesthetic responses, a recurrent pattern was that, in this study, peaks in the aesthetic responses were gradually approached. Except the classical and traditional music which featured familiar themes culminating in sudden leaps in the responses, country, new age and hiplife

musical types had a steady rise in aesthetic response until the end. Here, the responses of the participants were tied to the overall appreciation of the entire music rather than any specific musical style or dimension.

Now, synchronizing the aesthetic responses with the provided music types yielded insight into the highlights of the responses of the participants and the mostly associated musical dimensions or properties. From the visual display of the aesthetic responses, three main characters of the responses were identified: peaks, lulls and declines. Generally, across the six musical types used, very low responses as well as decline in the response were associated with dissonant sounds and harmonic progressions. Also, the transition from major to minor mode did not seem to elicit favourable aesthetic responses as this resulted in a decline in the response.

Another noticeable character of the aesthetic response was the various lulls in the aesthetic response. Musically, a clear distinguishing feature of the lull in the response was associated with repetition (with or without slight variations) of a theme or an idea, little dynamic contrast and unvaried harmonic support. The general identified trend in the responses of the participants across the six musical types was that sections of a music which remained largely the same also had responses remaining the same until there was a dramatic change or alteration in the music. To single out for mention, the traditional music which had a section of a mosaic of rhythmic patterns played by the supporting drums only, had responses also remaining largely unchanged. Further repetition of this same theme resulted in a decline in the response. Through several repetitions of an idea, the elements such as novelty, surprise and incongruity (identified by Berlyne to drive aesthetic experiences) are reduced therefore causing a lull or even a decline in the response. Furthermore, North and Hargreaves (1997) observed that when music becomes

predictable with repeated exposure, liking should wax and wane as a person chooses to or not to listen to a given piece of music.

Now, the peaks in the aesthetic responses were associated with a number of musical dimensions. To begin, the possible familiarity of the themes or ideas employed in the music presumably caused such an intense response to the music. The peaks in the aesthetic responses were all associated with a familiar theme or music. Also, very expressive sections of the music engendered favourable responses. In terms of tonality, responses to music in major mode were higher than the minor keys. This could reflect the view that the most research participants were accustomed with music in the major mode precisely because of its availability and accessibility as compared with music in minor mode.

In a nutshell, the discussion of the emergent patterns in the data have centred on the fact that aesthetic responses were generally tied to an overall intent of the music resulting in an on-going rise in the response. However, certain musical dimensions were identified to be mostly associated with the highlights of the aesthetic responses. The peaks, lull and decline in the aesthetic responses reflected the musical listening tastes and preferences of the participants. These preferences have been shaped by cultural orientation, age group, gender, musical training and other variables, resulting in subtle and extreme aesthetic responses for each of the musical types.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

Here, a summary of the whole thesis is given. This summary covers a recapitulation of the purpose of study, the research questions/hypotheses addressed, an overview of the research method employed, the various analysis performed on the data and a statement of the main findings. Following the summary, the conclusions drawn from this study and recommendations based on the findings of the study will also be provided. By way of concluding the entire study, some suggestions for future and further research will be offered.

Summary

This study primarily sought to explore the aesthetic responses of Ghanaian undergraduate students to diverse musical types. As may be apparent from previous chapters (introduction and literature review), music education as aesthetic education is one which has enjoyed considerable attention from scholars, educators and curriculum planners. Central to the discussions on aesthetic education is the promotion of the development of the sensitivities and responsiveness of students to musical art. As a result, music education as aesthetic education seems to hold its sway the world over. In the case of Ghana, music education is closely aligned with perspectives from aesthetic education.

Now, despite the generated body of literature in the area of aesthetic education, little or practically no information is available regarding the delivery of

music education after the order of aesthetic education. Thus, the need for empirical evidence to support the delivery of music education to foster the development of the aesthetic sensitivities of students is increasingly becoming apparent. It is for this reason that I set out to explore the aesthetic responses of undergraduate students to music.

Accordingly, stemming from the primary purpose of exploring the aesthetic responses of undergraduate students to different musical types, three specific objectives were developed: a) to find out if there was a significant difference in the aesthetic responses of Ghanaian undergraduate music and non-music students to different musical types, b) to study if there was a significant relationship between familiarity of music and aesthetic responses and c) to explore a possible relationship between student's participation in musical group or ensemble and aesthetic responses. Four research questions and three research hypotheses were formulated to help gain deeper insight into the factors which drive aesthetic responsiveness of students:

Subsequently, pertinent literature relating to the study was reviewed to, among other things, place the study into proper perspective. This review encompassed definitional issues concerning aesthetics and aesthetic experiences addressed by a variety of intellectual domains such as philosophy, psychology and sociology. Each domain focused on mechanisms that come into play or underlie an aesthetic encounter. Also, literature was reviewed on music preference with particular interest on the three-tier framework of musical preference by Hargreaves, North and Tarrant (2006). The theoretical framework under whose aegis this study was placed included Absolute expressionism, Berlyne's arousal theory, Mere exposure theory and Piaget's Genetic Epistemology. By way of

concluding the literature review, results from earlier research works concerning aspects of music and aesthetic response were reported.

By design, this study employed concurrent, embedded correlational model. This design, procedurally involved the collection of both qualitative and quantitative data in a concurrent manner. Concerning the sampling procedures, two major random sampling techniques (stratified random sampling and independent within-sample random sampling techniques) were used to draw a sample of 64 from the specified population.

Data was subsequently collected predominantly with the CRDI device and its accompanying exit questionnaire. The CRDI instrument has been shown to have a strong reliability with most studies ranging between a correlation coefficient of .85 and .95. However, the validity of the CRDI is situation specific-depending the construct been investigated and the conditions that impinge on the particular study. Each participant manipulated a dial while listening to each of the six musical types and accordingly completed the questionnaire.

The data analysis of this study was twofold: the first stage comprised descriptive statistical procedures such as measures of central tendency and measures of dispersion. In addition, linear graphs were used to study the responses of participants across a number of variables. The second order of analysis comprised testing the pre-set hypothesis and answering the research questions. Here, inferential statistical procedures such as ANOVA and T-test were also conducted.

Presentation of the major findings

The analysis began with the presentation of the biographical data on the research participants. From this, it was observed that most of the participants

(70%) had had some form of musical training. Then, I proceeded to investigate the general trend of the aesthetic responses of participants. Taking a cue from related research works, I also investigated three major factors such as gender, age, program of study and musical training on aesthetic response. In relation to this, gender, age and the number of years of musical significantly influenced the aesthetic responses of the participants. Subsequently, the hypothesis and research questions set for this study were duly answered.

Findings on variables and aesthetic response

To begin with, this study investigated the influence of gender on aesthetic responses. Musically, there were some differences found between the aesthetic responses of males and females in this study. As a matter of fact, the observed difference amounted to statistical significance ($p = .001$). Whereas the female participants in this study indicated high aesthetic responses for country and new-age musical stimuli, their male counterparts indicated high aesthetic response for hiplife, traditional and classical. However, the male participants had higher musical training than female participants. By implication, the selection of pieces for performance in schools will have to be done taking into due consideration issues relating to gender differences and musical preferences.

In addition, another investigated variable which had an influence on aesthetic response was age. Let me add that the differences in age and aesthetic response yielded statistical significance ($p = .000$). In relation to age, aesthetic responses of participants in the first three groups (17-21, 22-26, 27-31) remained essentially the same. In this study, those in the age group of 32 and above, representing 1.7% of the participants, had aesthetic responses which uniquely differed compared with the other age groups.

Finally, there was a statistically significant difference between the aesthetic response of music and non-music students. Here, the major differences between the two groups were associated with the frequency and magnitude of aesthetic responses to the musical types. Beyond the program of study, I looked at the influence of the general musical training on aesthetic responses. This was conducted against the background that some non-music students could have had some musical training. In this regard, it was also identified that a statistically significant difference existed between participants with fewer years on musical training (none and 1-3), on the one hand, and participants with extended years of musical training (4-6 and 7 and above), on the other hand.

Findings relating to research questions and hypotheses

The first research question was to find out the general aesthetic responses of Ghanaian undergraduate students to six musical types. From the study, aesthetic responses to the vocal pieces were generally higher than the purely instrumental types. Again, familiarity of music seems to play crucial role in the appreciation and aesthetic responses to the musical types. Now, familiar music or familiar sections of a piece of music resulted in high aesthetic responses. Synchronizing the aesthetic responses with each of the six musical types across time, the aesthetic responses of participants were favourable towards very expressive sections of the music. Also, dissonant progressions, tonality change (from major to minor) and loud music generally engendered low responses.

The second research question which had a corresponding hypothesis was set to test if there was a significant difference between the aesthetic responses of Ghanaian undergraduate music and non-music students. An independent sample *t*-test showed that there was a statistically significant difference between the two groups ($p = .007$).

The third research question and its corresponding hypothesis were to ascertain the influence of familiarity of music on aesthetic responses. Clearly, the findings of this study showed that participants who indicated that a particular music was very familiar also had high aesthetic responses to that music. Eventually, a correlational test revealed a statistically significant relationship between aesthetic response and familiarity of music: $r(62) = .370$, $p = .000$.

The fourth and last research question explored whether respondent's participation in a musical group could influence aesthetic response. Although 80% of research participants were members of at least one musical group (choir, band, orchestra), there was no significant statistical relationship between aesthetic response and participation in musical groups: $r(62) = .000$, $p > 0.05$. The results implied that there was no strong correlational relationship in one direction or the other.

Conclusions

From this study, insight is gained into the sensitivity and the responsiveness of the research participants to music. Not only did aesthetic responses to the six musical types indicate the musical preferences of participants, but this study identified the characteristics of the musical dimensions which were mostly associated with such preferences. The variables which, in this study, were identified to have significant influence on aesthetic responses have also shed some important light on factors which drive the aesthetic responses of the research participants. Combining the findings, design, limitations and recommendations for future research can initiate further prolific studies into various aspects of aesthetic response to music.

Recommendations

To begin with, researchers who would want to use the CRDI device must endeavour to include a digital filtering system which can subject musical recordings to analysis to generate one or more musical indices (that is collative properties of the music). This will ensure that music with multiple indices such as pulse, rhythm, melody, harmony and non-periodicals among others are properly filtered in order to show the exact musical elements that impact aesthetic experiences.

Regarding the use of the CRDI device, it may be helpful for future research works to use visual overlays on the screen of the dial to clearly demarcate the various levels or degrees of aesthetic responses. The reason for this is to help streamline the manipulation of the pointer of the dial used by participants to indicate the intensity or magnitude of felt aesthetic responses.

Furthermore, future research works must use a larger and a more varied sample in studying aesthetic responses. It is considered important because a more varied and larger sample size may produce statistically significant results and give more support for generalization. Again, the use of a wider range of musical excerpts will help bring out the contrast between the aesthetic responses to the musical elements; major and minor, loud and soft, slow and fast among others.

Another angle from which to look into the aesthetic sensitivity of people is to study aesthetic responses to particular music types under different dimensions but the selected music would be modified and altered in many ways – change of tempo, tonality, dynamic expressions, pitch centre and harmonic progressions. This will provide significant insight to contrast the aesthetic responses to the various characteristics of music.

Further studies can replicate this study at other levels of education – basic and secondary, graduate educational levels to gain insight into the trend of aesthetic responses and the associated musical characteristics which highlight the responses for general conclusions to be drawn. This will also provide the opportunity for further investigation to be carried out into the variables identified to have an effect on aesthetic responses (gender, age and extended musical training).

REFERENCES

Abeles, H. F., Hoffer, C. R., & Klotman, R., H. (1995). *Foundations of Music Education.* New York: Simon & Schuster Macmillan.

Agak, H. (2002). Difference and achievement in music among form four students in Kenya 1991-1995. *Bulletin of the Council for Research in Music Education,* Spring & Summer:154, 4.

Agawu, K. (2003). *Representing African music: Postcolonial notes, Queries, Positions.* London: Routledge.

Amuah, I. R. (2010). A Philosophy of Music Education Founded on Contemporary Musical Culture. *Journal of Philosophy and Culture, 92,* 176-203.

Amuah, I. R., & Flolu, J. (2003). *An Introduction to Music Education in Ghana for Universities and Colleges.* Accra: Black Mask Limited.

Amuah, I. R. & Sracoo, E. (1996). Seconday school student's ability to respond to the expressive qualities of music. *The African Music Educator, 9,* 46-67.

Asmus, E. P. (2009, February). *The measurement of musical expression.* Paper presented at the Suncoat Music Education Research Symposium, Tampa, Florida.

Barrett, M. S. (2006). Aesthetic response. In G. E. McPherson, *The child as a musician. A handbook of musical development* (pp. 173-192). New York: Oxford University Press Inc.

Bartlett. (1996). Physiological responses to music and sound stimuli. In D. A. Hodge, *Handbook of music psychology* (pp. 343-386). San Antonio: IMR Press.

Berlyne, D. E. (1971). *Aesthetics and pyschobiology.* New York: Appleton-Century-Cofts.

Binet, A. (1903). *Experimental study of intelligence.* Paris: Schleicher.

Bowman, W. (2003). An Essay Review of Bennet Reimer's A Philosophy of Music Education. *Journal of Music Teaching and Learning, 3,* 76-87.

Boyle, J. D., & Radocy, R. E. (1987). *Measurement and evaluation of musical experiences.* New York: Schirmer Books.

Bradley, L. (1999). Repetition as a factor in the development of musical preference. *Journal of Research in Music Education, 19 (3),* 295- 298.

Brittin, R. V. (1991). The effect of overt categorization on preference of popular music styles. *Journal of Research in Music Education, 40,* 143-151.

Brittin, R. V., & Duke, R. A. (1997). Continuous and summative evaluation of intensity in music: A comparison of two methods for measuring overall effects. *Journal of Research in Music Education, 45,* 245-258.

Brittin, R. V., & Sheldon, D. A. (1995). Comparing continuous versus static measurement inmusic listener's preference. *Journal of Research in Music Education, 43,* 36-46.

Broudy, H. (1979). Arts Education: Necessary or Just Nice. *Phi Delta Kappan, 60(5),* 347-350.

Capperella, D. A. (1989). Reliability of the Continuous Response Digital Interface for data collection in a study of auditory perception. *Journal of Music Education, 1*, 19-32.

Capperella-Sheldon, D. A. (1993). Self-perception of aesthetic experience among musicians and nonmusicians in response to wind band music. *Journal of Band Research, 28 (1)*, 51-57.

CRDD. (2007). *Teaching Syllabus for Creative Arts*. Accra: Ministry of Education, Ghana.

Creswell, J. W. (2002). *Educational research: planning, conducting, and evaluating quantitative and qualitative research.* Ohio: Merrill Prentice Ha.

Dainow, E. (1977). Physical effects and motor responses to music. *Journal of Research in Music Education, 25*, 211-221.

Davis, A. P. (2003). Aesthetic Response to Choral Music: Response Comparisons of Performer-Participants and Non-Performer Respondents. *International Journal of Research in Choral Music, 1 (1)*, 60-64.

Dutton. (2002). Aesthetics universal. In B. Gaut, & D. McIver Lopes, *Routledge Companion of Aesthetics* (pp. 203-214). New York: Routledge.

Elliot, D. (1995). *Music matters: A new philosophy of music education.* New York: Oxford Univeristy Press.

Finnas, L. (1989). How can musical preference be modified. *Bulletin of the Council for Research in Music Education, 102*, 1-58.

Flowers, P. (2002). Patterns of attention in music listening. *Bulletin of the Council for Research in Music Education, 148*, 48-55.

Fredickson, W. E. (1995). A comparison of perceived musical tension and aesthetic response. *Psychology of Music, 23*, 81-87.

Frega, A. L. (2001). Aesthetic Response to Music as measured by the CRDI: A cross-cultural replication. *Bulletin of the Council for Research in Music Education, 149*, 61-66.

Frith, S. (1987). Toward an aesthetic of popular music. In R. Leppert, & S. McClary, *Music and society* (pp. 133-149). Cambridge, UK: Cambridge University Press.

Geringer, J. M., & Madsen, C. K. (1995/1996). Focus of attention of elements: Listening patterns of musicians and nonmusicians. *Bulletin of the Council of Research for Music Education, 127*, 80-87.

Geringer, J. M., Madsen, C. K., & Gregory, D. (2004). A Fifteen-year history of the Continuous Response Digital Interface: Issues relating to Validity and Reliability. *Bulletin of the Council for Research in Music Education, 166*, 1-9.

Gions, W. E. (1998). The effects of moodstates: Continuous versus summative responses. *Journal of Music Therapy*, 35, 259-273.

Glenberg, A. M. (1988). *Learning from data: An introduction to statistical reasoning.* Wisconsin: Harcourt Brace Jovanovich.

Glenberg, A. M., & Andrzejewski, M. (2007). *Learning form data: An introduction to statistical reasoning.* Wisconsin: Routledge.

Hancock, C. B. (2008). Aesthetic Responses of Music and Non-Music Majors to Gradual Pitch Center Changes. *Bulletin of the Council for Research in Music Education*, 85-94.

Hanslick, E. (1986). *On the musically beautiful: A contribution towards the revision of the aesthetic of music.* Indianapolis, India: Hackett Publishing Company.

Hargreaves, D. J. (1986). *The developmental psychology of music.* Cambridge, UK: Cambridge University Press.

Hargreaves, D. J. (2001). *The Developmental Psychology of Music.* Cambridge: Cambridge University Press.

Hargreaves, D. J., & Castell, K. C. (1987). Development of liking for familiar and unfamiliar melodies. *Bulletin of the Council for Research in Music Education*, 19, 61-69.

Hargreaves, D. J., & North, A. C. (1997/2004). The social psychology of music. In D. J. Hargreaves, & A. C. North, *The Social psychology of music* (pp. 1-24). New York: Oxford University Press.

Hargreaves, D., & Colman, A. (1981). The dimensions of aesthetic reactions to music. *Psychology of Music, 1 (9)*, 15-21.

Hargreaves, D., North, A., & Tarrant, M. (2006). Musical preference and tast in childood and adolescence. In G. E. McPherson, *The child as musician. A handbook of musical development* (pp. 135-154). New York: Oxford University Press.

Jacobson, T. (2006). Bridging the arts and science: A framework for the psychology of aesthetic. *Leonardo, 39*, 155-162.

Johnson, B. R., & Onwuegbuzie, J. A. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher, 30*, 14-16.

Johnson, B., & Christensen, L. (2000). *Educational research: quantitative and qualitative approaches.* U. S. A: Allyn & Bacon.

Johnson, C. (1992). Use of the Continuous Response Digital Interface in the evaluation of live musical performance. *Journal of Educational Technology Systems, 20*, 261-271.

Johnson, C. (1992). Use of the CRDI in evaluation of the musical performance. *Journal of Educational Technology Systems, 20*, 261-271.

Juslin, P. N., & Sloboda, J. A. (2001). *Music and emotion: Theory and research.* Oxford: Oxford University Press.

Kant, I. (1790/2012). *The Critque of Judgment.* New York: Courier Corporation.

Kingsley, L. H. (1946). *The Nature and Conditions of Learning.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

Kumar, R. (2005). *Research methodology: a step-by-step guide for beginners* (2nd ed.). India: Sage publications.

Kunst-Wilson, W. R., & Zajonc, R. B. (1980). Affective dimension of stimulus that cannot be recognized. *Science*, 557-580.

Langer, S. (1942/1979). *Philosophy in a new key: a study in the symbolism of reason, rite, and art. (3rd edn.* Cambridge, MA: Harvard University Press.

Leder, H., Belke, B., Oeberst, A., & Augustin, D. (2004). A model of aesthetic appreciation and aesthetic judgment. *British Journal of Psychology*, 489-508.

Leonard, C., & House, R. W. (1959). *Foundation and principles of music education.* New York: McGrall-Hill.

Lycher, J. A. (1998). An empirical study concerning terminology relating to aesthetic response to music. *Journal of Research in Music Education, 46*, 303-319.

Lynch, M. P., & Eilers, R. E. (1991). Children's perception of native and nonnative music scale. *Music Perception, 46 (2),* 121-132.

Madsen, C. K. (1996). Empirical investigation of the aesthetic response to music: Musicians and nonmusicians. In B. Pennycook, & E. Costa-Giomi (Ed.), *Proceedings of the Fourth International Conference of Music Perception and Cognition* (pp. 103-110). Montreal: McGill University.

Madsen, C. K., & Geringer, J. M. (1990). Differencial patterns of music listening: Focus of attention of musicians and non-musicians. *Bulletin of the Council of Research in Music Education, 105,* 46-47.

Madsen, C. K., & Geringer, J. R. (2004). Gradual pitch change and aesthetic responses of music majors. *Bulletin for the Council of Research in Music Education, 160/161*, 135-144.

Madsen, C. K., Brittin, R. V., & Capperella-Sheldon, D. A. (1993). An empirical method for measuring the aesthetic experience to music. *Journal of Research in Music Education, 41*, 57-69.

Madsen, C. K., Byrnes, S. R., Capperella-Sheldon, D. A., & Brittin, R. V. (1993). Aesthetic response to music: musicians vrs nonmusicians. *Journal of Music Therapy, 30*, 174-191.

Maritain, J. (1924). *Arts and Scholasticism: With Other Essays.* Evanston, Illinois: Kessinger Press.

McDermott, H. J. (2012). Auditory Preferences and Aesthetics: Music, Voices, and Everyday Sounds. In A. E. Phelps, & P. Sokolhessner, *Neuroscience of Preference and Choice* (pp. 227-256). New York: Elsevier Inc.

McMillan, J. H., & Schumacher, S. (2001). *Research in education: A conceptual Introduction* (5th ed.). New York, U.S.A: Addison Wesley Longman.

Meyer, L. B. (1956). *Emotion and meaning in music.* Chicago: University of Chicago Pres.

Miller, R. L. (1976). Mere exposure, psychological reactance and attitude change. *Journal of Abnormal and Social Psychology, 59*, 1-9.

Myers, C. S. (1922). Individual differences in listening to music. *British Journal of Psyhology, 13*, 31-71.

Neuman, W. L. (2003). *Social research methods: qualitative and quantitative approaches* (Fifth edition ed.). U.S.A: Pearson Education, Inc.

Nieminen, S., Istok, E., Tervaniemi, M., & Hautilainen, M. (2011). The development of aesthetic responses to music and their underlying neural and psychological mechanisms. *Cortex, 47*, 1138-1146.

Nketia, J. H. (1975). *The music of Africa.* London: Victor Gollancz Ltd.

Nketia, J. H. (1999). *A guide for preparation of primary school African music teaching manuals.* Accra: Afram Publications (Ghana) Limited.

North, A. C., & Hargreaves, D. J. (1997). Experimental aesthetics and everyday music listening. In D. J. Hargreaves, & A. C. North, *The Social Pyschology of Music* (pp. 84-103). New York: Oxford University Press.

Oehrle, E. (1991). Emerging trends of Music Education in African. *The International Journal of Music Education*, 23-29.

Ohene-Okantah, M. (1996). In search of an African Philosophy of Music Education for Ghana. *African Music Educator, 10*, 1-16.

Otchere, D. E. (2010). "Why is it so?" A Historical Explanation to the status of Music in the Ghanaian Basic School Curriculum. *Proceedings of International Conference on Research and Development, 3 (35)*, pp. 41-46.

Otchere, E. D. (2013). *Music and Emotion: A study of the relationship between musical preference and emotional preference.* University of Cape Coast: Unpublished PhD Dissertation.

Philips-Silver, L., & Trainor, L. J. (2007). Hearing what the body feels: Auditory encoding of rhythmic movement. *Cognition, 105*, 533-546.

Qin, S. D. (2005). Improvised and composed variation technique and form in Mozart's variation ofr piano in C major. *McMaster Music Analysis Colloquium, 4*, 106-118.

Radocy, R. E., & Boyle, D. J. (2003). *Psycological foundations of musical behavior.* Springfield, Illinois, U. S. A: Charles C Thomas Publisher, LTD.

Reimer, B. (1989). *A Philosophy of Music Education.* Eaglewood Cliffs, New Jersey: Prentice-Hall.

Reimer, B. (2009). *Seeking the significance of Music Educations; Essays and Reflections.* Rowman & Little Publishers, Inc. U. S. A.

Rentfrow, P. J., & Gosling, S. D. (2003). The do re mi's of everyday life: The structure and personality correlates of musical preferences. *Journal of Personality and Social Pyschology*, *84*, 1235-12561.

Russell, P. A. (1997). Musical tastes and society. In D. J. Hargreaves, & A. C. North, *The social pyschology of music* (pp. 141-158). Oxford: Oxford University Press.

Sawyer, A. (1981). Repetition, cognitive responses and persuasion. In R. E. Petty, T. M. Ostrom, & T. C. Brock, *Cognitive responses in persuasion* (pp. 237-261). Halesdale, NJ: Erlbaum.

Scheerer, K. (2003). Introduction: Cognitve components of emotion. In R. J. Davidson, *Handbook of affective science* (pp. 563–673). Oxford: Oxford University Press.

Schiller, F. (1967). *On the Aesthetic Education of Man.* Oxford: Clarendon Press.

Schmidt, C. A. (1996). Reliability with the continuous response digital interface: A review with implications for future research. *Philosophy of Music Education Review, 4*, 20-32.

Sherif, C. W., Sherif, M., & Nebergall, R. E. (1965). *Attitude and attitude change: The social- judgment-involvement approach.* Philadelphia: W.B. Saunders.

Shimamura, A. P. (2013). *Experiencing Art: In the brain of the beholder*. 198 Madison Avenue, New York, NY: Oxford University Press.

Shimamura, A. P. (2014). Toward a Science of Aesthetic: Issues and Ideas. In A. P. Shimamura, & S. E. Palmer, *Aesthetic Science: Connecting Minds, Brain, and Experience* (pp. 3-30). New York, NY: Oxford University Press.

Silvia. (2005). Emotional responses to art: From collation and arousal to cognitive and emotion. *Review of General Pdychology*, *9*, 342-57.

Sloboda, J. (2001). Conference keynote: Emotion, functionality and the everyday experience of music: Where does music education fit? *Music Education Research, 3 (2)*, 243-253.

Sparshott, F. E. (1982). *The Theory of the Arts.* Princeton, N. J: Princeton University Press.

Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology, 9*, 1-27.

Zajonc, R. B. (2003). *The selected works of R. B. Zajonc.* New York: Wiley.

Zenatti. (1991). Aesthetic judgements and musical cognition: A comparative study in samples of French and British children. *Psychology of Music, 19,* 65-73.

APPENDICES

Appendix A

Music and Aesthetics: A Study of Aesthetic Responses of Undergraduate Students to Music

The purpose of this questionnaire is to collect data on the aesthetic responses of undergraduate music and non-music students. Please listen to the music and consider each of the questions carefully and answer as honestly as possible. Respond by ticking the appropriate box and fill in the blank spaces as required. I sincerely assure the anonymity and the confidentiality of the information you provide. The information is strictly meant for research purposes only. Thank you.

PART ONE: Biographical information

1) Sex: Male ☐ Female ☐

2) Age 17 - 21 ☐ 22 – 26 ☐ 27 - 31 ☐ 32 and above ☐

3) Academic program of study (e.g. BA. Arts, BSc Science, B. Mus)

……..

4) Undergraduate level 100 ☐ 200 ☐ 300 ☐ 400 ☐

5) Number of years of musical training:

None ☐ 1 - 3 ☐ 4 – 6 ☐ 7 and above ☐

6) Are you in any musical performing group(s)? (Please tick as many as may apply)

None ☐ Choir ☐ Orchestra ☐ Band ☐

Others (not mentioned here) ……

Appendix A continued

PART TWO:

1) Did you have an aesthetic response for each of the following musical stimulus played?

Classical	Yes	No
Country	Yes	No
Traditional	Yes	No
Hiplife	Yes	No
New-age	Yes	No
Avant-garde	Yes	No

2) Did your movement of the dial correspond to what you felt as an aesthetic experience for each of the following musical stimulus played?

Classical	Yes	No
Country	Yes	No
Traditional	Yes	No
Hiplife	Yes	No
New age	Yes	No

Appendix A continued

Avant-garde Yes No

3) Please indicate the level of **FAMILIARITY** of each of the following musical stimulus using the scale provided

(Unfamiliar) **1----------2----------3----------4----------5** (Familiar)
(Never) (Rarely) (Sometimes) (Often) (Always)

a) _____Classical

b) _____Country

c) _____Traditional

d) _____Hiplife

e) _____New age

f) _____ Avant-garde

Appendix B

Music Preferences of Ghanaian Undergraduate Students

Musical genres	Frequency	Per cent	Rank
Gospel	192	46.3	1st
R&B	37	8.9	2nd
Reggae	30	7.2	3rd
Hip-life	29	7.0	4th
Hip-hop	29	7.0	4th
Classical	21	5.1	6th
Cools	19	4.6	7th
Country	16	3.9	8th
High-life	14	3.4	9th
Traditional	9	2.2	10th
Rock	9	2.2	10th
World	6	1.4	12th
Jazz	4	1.0	13th
Total	415	100.0	

Appendix C

The six musical types used for this study

Musical Type	Song	Composer/Artist
Classical	*Variation for the piano in C major*	Wolfgang Amadeus Mozart
Country	'*I'll be there for you*	Kenny Rogers
Traditional	*Yaa Yaa Kole*	Ghana Dance Ensemble
Hiplife	*Adonai*	Castro and Sarkodie
New age	*Pilgrim*	Enya
Avant-garde	*Chamber Symphony No. 1, Opus 9*	Arnold Schoenberg

Appendix D

Differences in Gender and Aesthetic Response

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Aesthetic response of participants	Male	32475	120.98	78.690	.437
	Female	32475	113.38	79.951	.442

An Independent Sample t-test of Gender and Aesthetic Response

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Aesthetic response of participants	Equal variances assumed	16.471	.000	12.232	3	.001	7.599	.621	6.381	8.817
	Equal variances not assumed			12.233	60	.001	7.599	.621	6.382	8.817

Appendix E

Scheffe's Multiple Comparisons of Age Groups and Aesthetic Response

(I) Age of participants	(J) Age of participants	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
17-21	22-26	3.450*	.731	.000	1.41	5.49
	27-31	1.117	1.124	.804	-2.02	4.26
	32 and above	-36.156*	2.562	.000	-43.32	-28.99
22-26	17-21	-3.450*	.731	.000	-5.49	-1.41
	27-31	-2.333	1.019	.155	-5.18	.52
	32 and above	-39.606*	2.518	.000	-46.64	-32.57
27-31	17-21	-1.117	1.124	.804	-4.26	2.02
	22-26	2.333	1.019	.155	-.52	5.18
	32 and above	-37.273*	2.658	.000	-44.70	-29.84
32 and above	17-21	36.156*	2.562	.000	28.99	43.32
	22-26	39.606*	2.518	.000	32.57	46.64
	27-31	37.273*	2.658	.000	29.84	44.70

*. The mean difference is significant at the 0.05 level.

Appendix F

Differences in Program of Study and Aesthetic response

	Program of study	N	Mean	Std. Deviation	Std. Error Mean
Aesthetic response of participants	Nonmusic	32475	116.30	80.989	.457
	Music	32475	117.97	77.917	.424

An Independent Sample t-test of Program of Study and Aesthetic Response

		Levene's Test for Equality of Variances		t-test for Equality of Means					
									95% Confidence Interval of the Difference
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Aesthetic response of participants	Equal variances assumed	5.260	.000	-2.679	3	.007	-1.6670	.622	2.887	-.448
	Equal variances not assumed			-2.675	60	.007	-1.6670	.623	2.889	-.446

Appendix G

Scheffe's Multiple Comparisons of Number of Years of Musical Training and Aesthetic Response

(I) Number of years of musical training	(J) Number of years of musical training	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
None	1-3	.488	.840	.953	-1.86	2.84
	4-6	-12.059	.859	.000	-14.46	-9.66
	7 and above	-12.119	.876	.000	-14.57	-9.67
1-3	None	-.488	.840	.953	-2.84	1.86
	4-6	-12.547	.889	.000	-15.03	-10.06
	7 and above	-12.607	.906	.000	-15.14	-10.08
4-6	None	12.059	.859	.000	9.66	14.46
	1-3	12.547	.889	.000	10.06	15.03
	7 and above	-.060	.923	1.000	-2.64	2.52
7 and above	None	12.119	.876	.000	9.67	14.57
	1-3	12.607	.906	.000	10.08	15.14
	4-6	.060	.923	1.000	-2.52	2.64

*. The mean difference is significant at the 0.05 level.

Appendix H

Descriptives of the Aesthetic Response of Music and Non-music Students to the Musical Types

Program of study	Musical type	Mean	N	Std. Deviation
Nonmusic	Classical	137.83	9548	74.260
	Country	116.75	3502	73.223
	Traditional	102.78	5580	74.902
	Hiplife	154.40	6044	68.435
	New age	104.96	3962	77.813
	Avant-garde	2.96	2797	13.489
Music	Classical	149.10	10463	69.213
	Country	99.70	3713	75.066
	Traditional	116.57	5940	76.127
	Hiplife	127.80	6435	69.617
	New age	118.15	4224	71.240
	Avant-garde	13.97	3016	28.422
Total	Classical	143.72	20011	71.885
	Country	107.98	7215	74.660
	Traditional	109.89	11520	75.847
	Hiplife	140.68	12479	70.312
	New age	111.77	8186	74.780
	Avant-garde	8.67	5813	23.170

Appendix I

Scatter plot of Aesthetic Responses and Level of Familiarity