

UNIVERSITY OF EDUCATION, WINNEBA

**DEPARTMENT OF HEALTH PHYSICAL EDUCATION, RECREATION AND
SPORTS**

**THE ROLE OF HIPLIFE MUSIC IN THE DEVELOPMENT OF PHYSICAL
FITNESS AMONG STUDENTS OF MABANG SENIOR HIGH TECHNICAL
SCHOOL ASHANTI REGION**



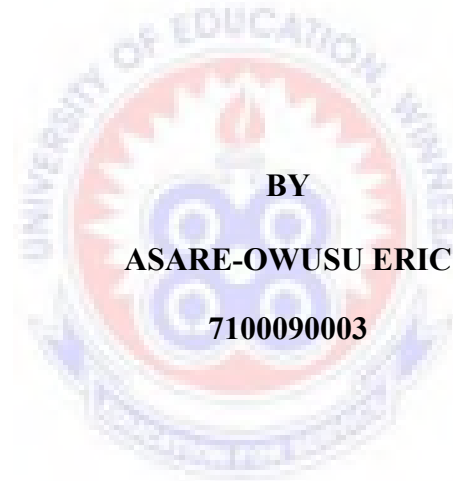
ASARE-OWUSU ERIC

2013

UNIVERSITY OF EDUCATION, WINNEBA

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ASHANTI REGION



**THESIS IN THE DEPARTMENT OF HEALTH PHYSICAL EDUCATION,
RECREATION AND SPORTS, FACULTY OF SCIENCE EDUCATION
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REQUIREMENT FOR THE AWARD OF MASTER OF EDUCATION.
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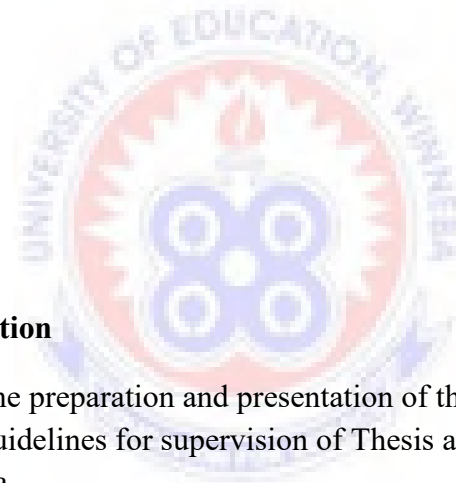
DECLARATION

Student's Declaration

I, Eric Asare-Owusu hereby declare that this thesis, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

Signature

Date.....



Supervisor's Declaration

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of Thesis as laid down by the University of Education, Winneba.

Name of Supervisor: Dr. Henry Augustine Pufaa

Signature

Date.....

DEDICATION

This work is dedicated to my dear wife Selina Baidoo who has supported me thus far and my children Hanna Owusuaa Duben, Felix Duben Asare, Kofi Asamoah Asare and Yaw Ofori Asare. It is also dedicated to my dear parents Mr. & Mrs. David Kofi Duben.



ACKNOWLEDGEMENT

I am highly grateful to the Almighty God for the protection and grace granted me in the course of writing this work.

To my supervisor, Dr. Henry Augustine Pufaa for the patience and commitment he displayed during the process of writing this work.

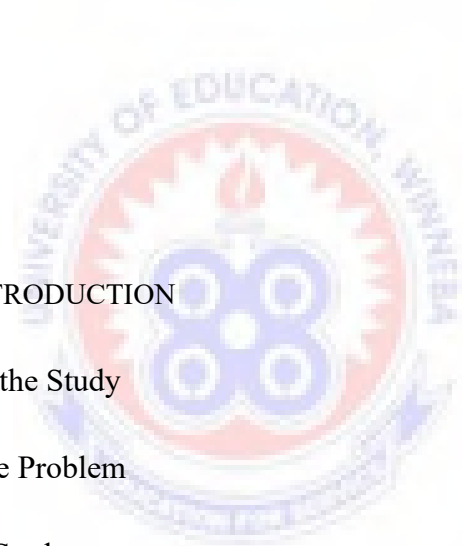
Also my deepest gratitude goes to course mates Mr. Amaning Augustus, Mr. Kofi Badu Duku and Miss Medina Srem - Sai for their immense support and advice

God bless you all.



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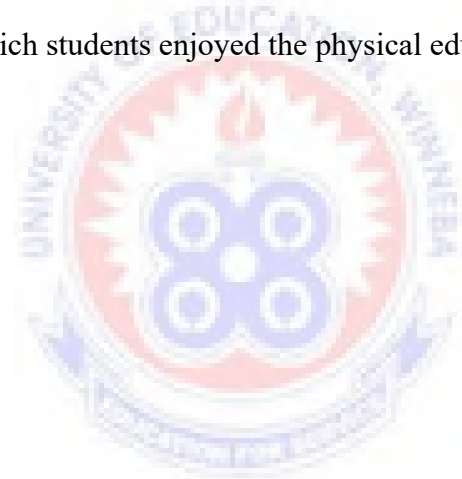


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ABSTRACT

This study investigated the role of hip life music in the development of physical fitness among students of Mabang Senior High Technical School. A quantitative research approach was used for the study. The research techniques used were the descriptive method. The significance of the study was that it would help to create awareness of the usage of Ghanaian Hiplife music in particular as an activity for teaching physical fitness practical lessons, improve teacher's pedagogy of teaching physical fitness parameters and improve literature on the use of music in physical fitness parameters in Ghana. Four research questions were raised. The instruments used were class attendance rate and time of reporting for class, endurance tests and questionnaire. Data was analysed using descriptive statistics. Results revealed that 90% of teacher respondents indicated that they agreed that music helps in the teaching and learning of physical fitness activities. However, only 20% of the teachers responded that they used music to enhance their physical fitness classes even though they were aware of the role music plays in the teaching and learning of physical fitness activities. Fifty percent of the respondents stated that they would prefer using hip life music for their physical education classes. There was a statistically significant difference of the participation rates of students who were taught using music and those who were taught without music on the endurance tests. Those who were taught using music participated better and longer on the tests. The teachers' knowledge and repertoire of Ghanaian music also helped in the planning of the activities. Frequencies, percentages, tables, and figures were used to analyze the responses. Some recommendations were made to further the use of Hip life music in the development of physical fitness among students.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Physical Education teachers have a lot to do with their instructional tactics of teaching physical fitness in schools. Aerobic dance, since it was introduced in the early 70's, and generally regarded as using music to accompany exercise, provides an important beneficial effect to the exercise experience. Many health and fitness teachers (instructors) regard the addition of music to exercise similarly to an ergogenic aid, with the removal of music or an inappropriate selection of music as sure bet to an unsuccessful class. Physical fitness is the ability of the human body to function with vigor and alertness, without undue fatigue, and with ample energy to engage in leisure activities, and to meet physical stresses. Muscular strength and endurance, cardio-respiratory integrity, and general alertness are the overt signs of physical fitness.

The need to be physically fit has gained some measure of acceptance in many countries of the world. As a result, programs to increase health in general and corporate fitness in particular have experienced an exponential increase in the last decade (Cooper and Collingwood, 1984). This has been so, perhaps because it was realized that physical fitness is of fundamental importance for individuals' well-being, together with the progress and security of a nation. It is reasonable to believe that physical fitness constitutes substantial part of the basis of all forms of excellence. Therefore, concerted

efforts must be made to build up, maintain and improve the physical fitness of both male and female regardless of their age.

Mechanization and automation have made it possible for large population groups to go through life with minimum physical activity. While the biological systems generally develop an adaptive increase in functional capacity (that is 'atrophy') when subjected to inactivity (Holliszy, 1978). Corresponding efforts have not been made to consciously take care of the physical fitness of students. In fact, the state of youth fitness could be called a national tragedy because symptoms of cardiovascular diseases are evident in children. It is no exaggeration therefore, to say that the improvement of the fitness of students and youth is one of the biggest challenges to parents, teachers' organizations, institutions and the government. Binkhorst (1985) stated that it might be assumed that it is natural for children to exercise, for if they do not, they might experience health problems.

Physical activity in youths and students should be optimized so that when the child grows up; activity will be an integral part of his or her life and thereby contribute to healthy way of living in general and the physical fitness level in particular. This is because physical fitness may degenerate later in life if participation and physical activities is reduced or stopped after active childhood experiences.

Ajayi (1995) stated that though exercise will not abolish old age, it might delay it. This shows that there is no age limit to participating in physical fitness programme. He reported that Pentti (1979) was of the view that physical exercises after middle age have definite value, ranging from epidemiological to cellular functions. However, with

advancing age, physical activity program must be individually designed to fit the needs of the individual.

Mabang Senior High Technical School is one of the up and coming second cycle institutions in Ashanti region of Ghana, with the motto 'Nimdee ne Nyamesuro', meaning knowledge and God fearing. The school has a total population of one thousand, six hundred and sixty-five (1,665) students with teaching staff of sixty five (65) under the current leadership of Mr. Joseph Kwame Agyemang.

Physical fitness means that the various systems of the body are healthy and function efficiently so as to enable the fit person to engage in activities of daily living, as well as recreational pursuits and leisure activities, without unreasonable fatigue. Beyond physical development, muscular strength, and stamina, physical fitness implies efficient performance in exercise or work and a reasonable measure of motor skills in the performance of selected physical activities.

Students of Maban Senior High Technical School, like other students, like dancing to some Ghanaian music such as 'Hip life'. The researcher after teaching the students for three years has observed that the majority of the students lacked stamina and the ability to remain active in fitness activities for a long time. Most of the students cannot fully participate in the fitness activities organized for the school because of lack of some of the parameters of physical fitness. Examples are flexibility, agility, speed, and muscular endurance to mention but a few. But they like dancing to music for more than two hours, without fatigue.

The definition of the artful arrangement of musical sounds and dancing movements across time is obviously very broad, but a narrower one would exclude too much. Music

and dance are parts of virtually every culture on Earth, but vary widely among cultures in style and structure. Definitions of music and dance can change dramatically over a short time, as they have across the world.

The sense of musical sound and dancing movement has been central in sports and has been studied from a variety of perspectives. Cheering, clapping, jumping, and chanting, moving, shouting and singing are common place, occupying a considerable amount of time at many sports events. Indeed, it is rare to find silence at sports event. Music is one form of noise wanted, that widely occurs in sports and its milieu

It has been suggested that music and dance are some of the primary phenomena associated with a sports event. In some sports such as ice skating, synchronized swimming and some forms of gymnastics, music is essential. Sports and leisure practices cannot exist without the presence of music; and dance. Music and dance are integral part of the activity. In other sports, music is important. For example, the scientific ways in which music is used to enhance performance is of considerable significance. Such music is used in the laboratories or during training, but it is also present at sports events.

Karagan (1993) argued that music and dance can be applied in physical activities contexts. He also established the fact that music can be applied to sports training and competition in many different ways, and have provided initial evidence for a relationship between exercise heart rate and music tempo preference. One of the main demonstrated benefits of music is that it enhances psychological state, which has implications for optimizing pre-competition mental state and increasing the enjoyment of training activities. Used synchronously, music can boost work output and make repetitive task

such as cycling or running more energy- efficient. Researchers have proved that judicious use of music allows athletes and practitioners to tap the psychological and ergogenic effects of music with greater precision.

Students of mabang senior high technical school have the perception that physical exercise is a punishment. For them it is full of vigorous activities and tiresome. Attendance given to physical education class, practical lessons are not encouraging. The few students who attend to lessons do not participate to the fullest. Using music and dance the icon of recreation in Ghana, especially 'Hip Life music' a contemporary music in Ghana can be used to motivate the students' participation of physical activities and can enhance their physical fitness level in the country.

1.2 Statement of the Problem

Physical fitness parameters play a very important role in everyday life for man in modern society. It also makes life richer for improving national development. Participation of physical activities under a physically fit environment should normally result in some positive and constructive results for the participant. The values to be gained are many but the lack of well- planned physical activities which will enhance physical fitness in senior high schools is a challenge that has to be resolved. Physical activities accompanied by music, as used in fitness regimens, would enhance participation of students in attaining physical fitness regimens, and would enhance participation of students in attaining physical fitness goals at the Senior high schools level. Ghanaian music (Hip Life) is usually very rhythmic and attracts participants and participation is usually vigorous

demanding a high level of fitness. It is against this background that the researcher wants to carry out this study.

1.3 Purpose of the Study

Primarily, the purpose of this study is to determine the effectiveness of using contemporary Ghanaian music and dance 'Hip Life music' enhance the health related physical fitness activities in the life of students of Mabang senior high technical school and make recommendations which could be used as a motivator for students to be used to increase participation of physical fitness activities and reduce health related fitness activities problems.

1.4 Research Questions

The study therefore is to find answers to the following questions.

1. To what extent will rhythmic Ghanaian Hip life music attract senior high school students to participate in physical fitness activities?
2. How does Ghanaian Hip life music enhance the teaching and learning of physical fitness activities in Mabang Senior High School
3. What is the impact of Hiplife Music on Students physical fitness activities in Mabang Senior High School?
4. How does instructors' knowledge in Ghanaian music and dance enable them to prescribe the required physical fitness activities for learners?

1.5 Significance of the Study

It is the researcher's view that the result of this study will help to create awareness of the usage of Ghanaian Hiplife music in particular as an activity for teaching physical fitness practical lessons, improve teacher's pedagogy of teaching physical fitness parameters and improve literature on the use of music in physical fitness parameters in Ghana.

The study would also provide information which can serve as a basis for planning in-service training for tutors of various schools including Colleges of Education to upgrade their professional competencies with regard to the use of Ghanaian Hiplife music for the teaching of physical fitness activities. Finally, the study will provide data which can serve as a launch pad for further research into other areas of the use of music in teaching physical education

1.6 Objectives

The objectives of this research study are as follows:

1. To determine the effective use of Ghanaian music (Hip Life) in the teaching of some activities of physical fitness parameters in senior high schools in Ghana.
2. To ascertain ways of maximizing teachers' repertoires of Ghanaian music in teaching physical fitness.
3. To find out ways of maximizing teachers content knowledge of Ghanaian music and dance and its relationship to some physical fitness activities.

1.7 Delimitation

The study will be centered on students of Mabang senior high technical school and P.E teachers in the Ahafo Ano North District.

1.8 Limitation

There was a problem of uncooperative attitude of some of the students who did not understand the importance of the study. This was because it was the first time they were taken through an activity of this nature. Apart from the physical education teachers who understood the exercise, there was a problem of getting in touch with other subject teachers of these students to let them understand that their extra classes' periods will be used, even though permission was sought from the headmaster.

The researcher faced some challenges as to the collection of questionnaire since not all of them were returned. Inspired of these limitations the research was conducted successfully.

1.9 Definition of Terms.

Brockport Physical Fitness Test (BPFT):

The Brockport physical Fitness Test is a criterion- referenced health-related test of physical fitness appropriate for use with youngsters with disabilities.

Hip-life music:

It is a contemporary Ghanaian music which has its root from Hip-Hop music of United States of America and High Life music Of Ghana.

Repertoire of music:

The total number of music albums that Physical Education teachers have and can use in teaching.

Music Genre:

A music genre is a conventional category that identifies pieces of music as belonging to a shared tradition or set of conventions. It is to be distinguished from musical form and musical style, although in practice these terms are sometimes used interchangeably..



CHAPTER TWO

REVIEW OF RELATIVE LITERATURE

2.0 Introduction

This chapter contains the summary of the writings of recognized authorities and of previous researches done on the problem under investigation. The review was organized under the following subheadings:

1. Conceptual Framework
2. Rated Perceived Exertion
3. Music
4. The Role of Music In Physical Activities
5. Mechanisms Responsible for Music's Performance Enhancing Properties
6. Music Genre And Exercise
7. Types of Music Genre
8. Fast Tempo and Slow Tempo Music
9. Exercise Intensity, Rate of Perceived Exertion (RPE), and Heart Rate (HR)
10. Ghanaian Hip Life Music
11. Musical Style of Hiplife
12. The Impact of Hiplife Music on Physical Fitness Activities and
13. Summary of Literature Review

2.1 Conceptual Framework

Conceptually the underlying framework of the study for using motivational music in exercise and sport was devised by Karageorghis, Terry, and Lane (1999).

Karageorghis, Terry, and Lane (1999) developed a conceptual framework to predict the motivational effects of asynchronous music and an associated measure of the motivational qualities of music known as the Brunel Music Rating Inventory (BMRI). They indicated that the main characteristics of motivational music are that it has a fast tempo (>120 beats per minute [bpm]) and strong rhythm, which increase energy and induce bodily action. They operationalized the term *oudeterous* music to describe music that lacks motivational qualities (*oudeterous* = “neutral” in Greek). A body of work has been built on this conceptual distinction with the aim of examining the psychophysical and ergogenic effects of music according to its motivational qualities (e.g., Crust & Clough, 2006; Elliott, Carr, & Orme, 2005; Elliot, Carr, & Savage, 2004; Karageorghis, Jones, & Low, 2006; Karageorghis et al., 2008; Simpson & Karageorghis, 2006). In such studies, the BMRI or its derivatives (e.g., BMRI-2; Karageorghis, Priest, Terry, Chatzisarantis, & Lane, 2006) have been used as a tool to select music for use in experimental trials. This procedure has added an objective component to the selection of music for experimental protocols that has enhanced the scientific rigor of experimental work.

The conceptual framework devised by Karageorghis et al. (1999) posited three main hypotheses, all of which are relevant to the current study. First, music can change psychomotor arousal levels and thus be used as either a stimulant or sedative (Bishop, Karageorghis, & Loizou, 2007; Karageorghis, Drew, & Terry, 1996). Second, music narrows attention and can reduce the awareness of bodily sensations of fatigue (cf.

Rejeski, 1985). This results in lower ratings of perceived exertion (RPE) during low- and moderate-intensity exercise (Boutcher & Trenske, 1990; Szmedra & Bacharach, 1998). It is important to note that workload mediates psychophysical responses to external stimuli; therefore, music is hypothesized to be ineffectual at high exercise intensities (Tenenbaum, 2001). Third, music enhances positive mood dimensions such as happiness and vigor while reducing the negative dimensions such as anger, depression, and tension (Boutcher & Trenske; Edworthy & Waring, 2006; Hayakawa et al., 2000).

Therefore, an athlete can use various music tempos as a 'psych-up' strategy in preparation for a competition or perhaps an aid to calming over anxiousness. Music also diverts a performer's attention from sensations of fatigue during exercise. This diversionary technique, known as dissociation, lowers perceptions of effort. Effective dissociation can promote a positive mood state, thus turning the attention away from thoughts of physiological sensations of fatigue Karageorghis, et al (1999).

2.2 Rated Perceived Exertion

Noble and Robertson (1996) define perceived exertion as the subjective intensity of effort, strain discomfort and/or the fatigue that is experienced during an exercise. Currently, the most consistent findings suggest that perceived exertion will rate in lower values when participants exercise to music (12, 13, 22, & 24). The research data compiled from over the past two decades has found music particularly effective in distracting exercisers away from their perceived exertion during physical activity. A study by Nethery, Harmer, and Taaffe (1991) found that perceived exertion while exercising to music was lower than for other attentional distracters and for the no distraction condition. Furthermore, Thornby, Haas, and Axen, (1995) tested exercising

participants in the presence of music, no music and noise. They discovered that participants reported a lower perceived exertion while exercising in the presence of music in comparison to the no music and noise conditions.

These findings coupled with the popularity and substantial profits generated between the association of music and training (O' Rouke, 2011) would seem to indicate a correlation between the use of music and performance.

2.3 Music

Dictionary.com states that music can be defined in four ways namely:

1. It is an art of sound in time that expresses ideas and emotions in significant forms through the elements of rhythm, melody, harmony, and color.
2. The tones or sounds employed, occurring in single line (melody) or multiple lines (harmony), and sounded or to be sounded by one or more voices or instruments, or both.
3. Musical work or compositions for singing or playing.
4. The written or printed score of a musical composition.

2.4 The Role of Music in Physical Activities

Numerous investigations have shown that listening to music whilst performing aerobic exercise can produce ergogenic gains (Anshel & Marisi, 1978; Szabo, Small & Leigh, 1999; Elliott, Carr & Savage, 2004; Elliott, Carr & Orme, 2005).

Music has many purposes for different individuals. Specifically, music may be used to extend physical activity. "Music may prolong physical performance of the organism

because it inhibits of psychological feedback associated with physical exertion and fatigue”. Szabo, Small, and Leigh (1999) suggest that there are four ways that music might improve exercise performance which include: reduce the feeling of fatigue, increase arousal, increase relaxation, and promote motor coordination. It is also suggested that music provides motivation, in which “musical style is an important factor”. Past research has concluded that music during exercise has a positive effect on psychological aspects of an individual, such as motivation and external focus. The physiological aspects however are inconclusive and there are mixed results on whether or not music during exercise has an effect on heart rate (HR)⁴.

Music has also been shown to induce dissociation; a state that has been shown to enhance physical performance; so it is possible that it is this that explains music's performance enhancing properties. Alternatively, listening to music may provoke alterations in arousal; considered as the intensity dimension of behaviour; thus it is conceivable that this reaction is responsible the ergogenic gains associated with music listening.

2.5 Mechanisms Responsible for Music’s Performance Enhancing Properties

One possible explanation for music’s performance enhancing property relates to music's ability to induce a state of dissociation. Dissociation occurs when an individual focuses upon external stimuli thereby reducing the perception of internal bodily cues; this response can be evidenced by reductions in RPE and improved affect (Rejeski, 1985; Boutcher & Trenske, 1990). Numerous investigators have made reference to music's dissociative capability (Anshel & Marisi, 1978; Boutcher & Trenske, 1990; Brownly, McMurray, & Hackney, 1995; Szabo, Small & Leigh, 1999; Hayakawa, Miki, Takada, &

Tanaka, 2000) and it has been shown that dissociation can improve physical performance (Okwumabua, Meyers, Schleser & Cooke, 1983; Scott, Scott, Bedic & Dowd, 2000). Although some authors have attributed music's ergogenic qualities to dissociation, there remain some issues with this hypothesis. First, whilst dissociation has been often been advanced to explain music's performance enhancing properties, many (e.g. Anshel & Marisi, 1978; Szabo et al. 1999; Hayakawa et al., 2000) have not actually measured those variables associated with dissociation. Second, a study by Elliott (2005) revealed that although music did appear to redirect participant's attention from the internal cues associated with exercise during the early stages of a 20-minute cycle trial, this effect diminished as the trials progressed. Despite this, there was no impact upon exercise intensity. That is, the reduced distractibility of music was not accompanied by a reduction in work rate. Because of these issues, further research should be conducted before definite conclusions could be drawn regarding music-induced dissociation and its effect on aerobic exercise.

Whilst it is possible that dissociation could account for the ergogenic responses associated with music listening, there are alternatives. Arousal has been described as being a construct that represents the intensity dimension of behaviour (Landers, 1980; Martens, Veal, & Burton (1990). As such, an increase in arousal may cause a corresponding increase in behavioural intensity. Within the context of sport and exercise, there are some theorists that have stated that listening to music can alter the arousal levels of the exercise participant (e.g. Karageroghis, Terry & Lane, 1999) and research in non-exercise settings has offered some support for music's arousal altering properties

(Iwanaga & Moroki, 1999; Rickard, 2004; Husain, Thompson, & Schellenberg, 2002; Thompson, Schellenberg, & Husain, 2001). One musical component that has been implicated in this response is tempo (Holbrook & Anand, 1990), with Husain et al. (2002) suggesting that arousal and musical tempo possess a positive relationship. That is, the faster the tempo the greater the intensity of the arousal response. If this is the case it is feasible to hypothesise that 'faster' music will provide greater ergogenic benefit than music of slower tempi. Although the preceding research could implicate arousal as a mechanism through which music can enhance physical performance, direct empirical support is limited, thus further research is required to determine the relationship between music, arousal and aerobic exercise.

2.6 Music Genre and Exercise

Research has shown the importance of regular exercise in maintaining wellness. Participation in fitness activities improves physiological and cognitive functioning, as well as emotional well-being (Hill, 2000). It is important to find ways to motivate and enhance exercise for children. If children think of exercise as appealing, enjoyable, and worthwhile, they are more likely to continue exercising and have a positive attitude regarding exercise. Students in my physical education classes seem to enjoy physical activity, but how do I know and what can be added to enhance their performance?

Previous research has indicated that music has an effect on exercise performance. Music is used as a distracter when exercising, and often reduces the individuals' perception of how hard he or she is working (Loucks, 2000). Listening to music can take one's mind

off their breathing, sweating, soreness, and fatigue. Thus, it can cause one to work harder because they do not realize how hard they are working.

A study conducted by Loucks (2000) on college students compared their exercise intensity during upbeat music, slow music, and with no music during a 30 minute exercise period on a treadmill (2000). Loucks concluded there was little difference in exercise intensity between the two sessions when music was used. However, there was a difference in rate of perceived exertion between the groups with music, both upbeat and slow, as compared to the group with no music. The latter group reported higher rate of perceived exertion.

Music can motivate students as well as bring enjoyment to students while exercising. Music can be a strong motivator for running and corresponds with movement intensity and student interest (Hill, 2000). Popular music can heighten students' interest in an activity because they have a connection to the music. A study conducted by Ha and Wong (2002) found that students find greater satisfaction in exercise and enjoyment in exercise increases when music accompanies physical activity.

Physical education teachers routinely use music to motivate students during physical instruction. Music is sometimes used in physical education classes to keep students on task. A study by Ward and Dunnaway (1995) used music to increase the number of laps run by high school students in a physical education class. The researchers concluded that there was a substantial increase in the exercise patterns of students when music was played.

While research has been conducted on music during exercise, there have not been many studies in which running has been the exercise activity. Also, “there is no consistent view regarding the effects of listening to music on HR during exercise”⁵. For many individuals, exercising is not their favorite part of the day. Learning how a certain genre of music can motivate them to achieve their goal and finish the exercise can be a very helpful tool.

Music and its effect on exercise is becoming a subject of interest for future studies. Psychophysical effects and psychophysiological effects are two of the primary effects that are studied in literature⁶. In this chapter music genre, fast tempo music and slow tempo music, exercise intensity, rating of perceived exertion (RPE), heart rate (HR), and motivation is explained.

Research conducted in the exercise domain prior to the mid-1990s was of variable quality and produced equivocal findings. This equivocality has been attributed to methodological limitations and the lack of a guiding theoretical framework (see Karageorghis). Researchers often misused musical terminology, operated poor music selection protocols, chose inappropriate measures and failed to standardise important aspects of experimental protocol, such as playing music at a consistent volume. Developments in conceptual understanding and standardisation of music selection (e.g., Karageorghis et al., 2006) have helped to rectify these limitations.

A corpus of research work has focused on identifying factors contributing to the motivational qualities of music; that is, qualities which stimulate or inspire physical activity. Following more careful attention to music selection by researchers, a range of benefits have been shown in the exercise domain that include diversion of attentional focus, triggering or regulation of specific emotions, alteration or regulation of mood states, evocation of memories and other cognitive processes, control of arousal, induction of flow state, reduction of inhibitions and encouragement of rhythmic movement (see Terry & Karageorghis, 2011).

These responses to music may, in turn, promote an ergogenic (work-enhancing) effect. This occurs when music improves exercise performance by either reducing perceptions of fatigue or increasing work capacity. Typically, this results in higher-than-expected levels of endurance, power, productivity or strength. Long-term benefits of music use have yet to be investigated thoroughly but are thought to include increased adherence to exercise programmes. This is especially pertinent to music use in medical rehabilitation settings in which exercise plays a role (e.g., physiotherapy, stroke, chronic pain, cardiac episodes; see Siedlecki & Good, 2006). Exploratory work has demonstrated the utility of music in these secondary care contexts where, owing to their condition, patients are in particular need of encouragement, affective enhancement, distraction and stimulation.

Primary factors that influence responsiveness to music in exercise and sport settings are the musical qualities of rhythm, melody and harmony. Secondary factors include the extra-musical qualities of cultural impact (i.e., pervasiveness of the music within specific cultural groups or society generally) and associations that a piece of music may carry

(e.g., Heather Small's Proud is closely associated with the British team at the 2000 Sydney Olympics).

The latest iteration of our conceptual model incorporates the influence of gender and personality. Research findings suggest that these variables play a role in determining musical preferences and responses within exercise settings. For example, males generally express a greater preference for bass frequencies compared to females (McCown et al., 1997), and extraverts respond more favourably than introverts to lively musical selections (e.g., Crust & Clough, 2006). Further, Hargreaves and North (2008) have identified situational context as a key influence on effects of music, whereby exercisers have pre-conditioned expectations about music that should be played in different contexts (e.g., upbeat, arousing music in gymnasias).

Effects of music prior to exercise and sport have been studied extensively.

Pre-task music has been shown to act as an effective stimulant that can optimize arousal level and psychological states (see Terry & Karageorghis, 2011). Effects of music during physical activity have also been investigated thoroughly. Use of asynchronous music (i.e., background music to which movements are not consciously synchronized) provides both psychological (distraction and enhancement of positive feelings) and ergogenic (performance-enhancing) benefits. Although the role of such music is typically motivational, it may also serve to promote relaxation and efficiency in long-duration, repetitive activities such as distance running (see Terry & Karageorghis, 2011). Some of

our experimental work has addressed the association between heart rate (a proxy for exercise intensity) and preference for musical tempo (speed).

Findings indicate that, among young adults, preferred music tempo generally falls within a narrow band (125-140 beats per minute) regardless of exercise intensity (Karageorghis et al., 2011).

Contrary to theoretical predictions, the relationship between exercise heart rate and preferred music tempo is nonlinear, characterised by a series of inflections.

The relationship has yet to be examined among older exercisers, and may possibly be different for them, given that maximal heart rate reduces considerably with age.

Synchronous music use (i.e., when an exerciser consciously moves in time with a musical beat) has been shown to provide ergogenic and psychological benefits in repetitive endurance activities.

For example, motivational synchronous music used during treadmill walking improved time to voluntary exhaustion by 15% compared to motivationally neutral and control conditions

(Karageorghis et al., 2009). Other findings suggest that synchronous music may increase rhythmicity of movement, resulting in an efficiency gain that is associated with lower relative oxygen uptake (see Terry & Karageorghis, 2011).

In steady-state aerobic exercise, motivational music has also been shown to improve affective states by up to 15%. Similarly, music listening can be an effective dissociation strategy, reducing perceptions of effort and fatigue by up to 12%. However, this distraction effect is attenuated at higher exercise intensities ($> \sim 70\%$ VO_2 max) as internal feedback dominates due to the limited channel capacity of the respective afferent

nervous system. Notably, the affective and attentional effects of music appear to interact, in that positive feelings can alter perception of intense effort. The effects of post-exercise music, to aid recovery from training, competition or injury – known as recuperative music – are now beginning to receive research attention (see Terry & Karageorghis, 2011).

2.7 Types of Music Genre

The type of music involved is an important factor to the performance of an exercise activity. Gfeller (1988) conducted an interview with 70 students at a university which consisted of open-ended questions referring to the physical requirements during exercise and the perception of music on performance. Gfeller (1988) concluded that more than 90% of the participants found that an important factor during aerobic activity is musical style.

2.8 Fast Tempo Music and Slow Tempo Music

There are mixed conclusions about fast tempo and slow tempo music affecting exercise. Boutcher and Trenske (1990) conducted a study in which 24 subjects selected their own preferred type of music⁴. The majority of the subjects chose music that was upbeat, while there were a few who chose more relaxed music. The subjects performed three, 40 min sessions on a cycle ergometer. For each session, three different conditions were used: control, sensory deprivation, and music. Workloads of 60%, 75%, and 85% of maximum HR were determined with a submaximal fitness test. It was found that at a workload of 85%, significant differences between the deprived and music conditions were seen.

Szabo, Small, and Leigh (1999) used a number of music groups to test the effects of music during a cycling exercise. The subjects were tested five times with five music conditions which included no music, slow music, fast music, slow to fast music, and fast to slow music. The same song, Beethoven's Symphony no. 7, was used throughout all five trials. The researchers recorded the song in a fast tempo and a slow tempo. They concluded that the fast music condition or the slow to fast music condition were preferred by the subjects. Copeland and Franks (1991) hypothesized "fast, loud music will increase the physiological and psychological responses to submaximal exercise"⁷. They used two types of music during a treadmill exercise, along with a control treatment of no music. One type was upbeat, high intensity, and fast tempo of 140 beats per minute. The other type was slow, low intensity, and easy-listening with a tempo of 100 beats per minute. The slow music type resulted in a higher HR at maximum exercise and a longer time to exhaustion compared to the control treatment.

2.9 Exercise Intensity, Rate of Perceived Exertion (RPE), and Heart Rate (HR)

The measurement of exercise intensity has been recorded in a few different ways. Researchers have used RPE, maximal oxygen uptake (VO_{2max}), and HR. Yamashita, Iwai, Akimoto, Sugawara, and Kono (2006) used an exercise protocol in a study that consisted of participants using a cycle ergometer and recorded their RPE and HR while listening to music before starting the exercise⁵. The music was selected by each subject's own preference.

During a 30 min cycling exercise, HR was recorded every minute and RPE was recorded every three minutes. They found no significant differences in HR throughout the experiment.

On the other hand, Brownley, McMurray, and Hackney (1995) observed HR, as well as RPE, to increase as exercise intensity increased⁸. In this particular study, trained and untrained subjects participated and exercise intensity was defined as low, medium, and high speeds on a treadmill. The subjects walked or ran on a treadmill for 10 min at each of these intensities. During each trial, they listened to three different music types: no music, sedative music, and fast music. They found that as the intensity increased, the participants' feelings became more negative, but their HR increased.

Szmedra and Bacharch (1998) conducted a study that involved ten male participants who ran for 15 min at a high intensity of 70% of their VO₂max⁹. They each ran for a trial with music and a trial without music. HR and RPE, along with other variables were recorded every three minutes throughout the trials. The results showed significant differences in HR and RPE while exercising with music.

Seath and Thow (1995) investigated the use of music on alteration of exercise effort perception and the subject's feelings during aerobic activity¹⁰. The subjects performed two 15 min dance routines, one routine with pop music and one routine without music. RPE and feelings of mood were recorded every thirty seconds throughout the routines. Significant effects of music on improving the subject's feelings and decreasing the perception of effort were recorded.

According to Yamashita et al. (2006), the conclusions of the effects of music on HR had no consistent result. They found no changes while Brownly, McMurray, and Hackney

(1995) and Szmedra and Bacharch (1998) found an increase in HR_{8,9}. There were also changes in RPE and feelings of mood.

2.9.1 Chester step test

The measurement of VO₂max is a common test for aerobic capacity and has been used in numerous research studies. However, VO₂max testing requires high technical knowledge about the equipment. An alternate test to measure aerobic capacity is the Chester Step Test. Skyes and Roberts (2004) conducted an experiment to compare the Chester Step Test to a VO₂max test and to validate the use of the Chester Step Test¹¹. In this experiment, 68 healthy subjects between the ages of 18 and 52 were given a VO₂max test and a Chester Step Test. The VO₂max test was conducted on a treadmill while “monitoring ventilation, carbon dioxide production, oxygen consumption and heart rate”. The test was completed when two of three criteria for VO₂max were reached. These criteria were “heart rate reached age-related maximum (220 – age), a respiratory exchange ratio of 1.15 was reached, and the subject reported a rating of perceived exertion of 19/20 on the Borg scale”. Then, the step test was completed twice on two separate days and was conducted on a 30 cm step with a timed metronome. The subjects started stepping to the metronome at 15 steps per min for two min. After each 2 min interval, HR and RPE were recorded. The step rate of the metronome was also increased after each 2 min interval. The test was completed once the subject reached 80% of their estimated maximum HR. A high correlation of r equal to 0.92 was found between the results of the VO₂max tests and the results of the Chester Step Tests. They concluded that the Chester Step Test is a valid test for the estimation of aerobic capacity.

2.9.2 Motivation

Music not only has some effect on the physiological aspects of an individual, but can also affect the psychological aspects. Music can “contribute to the athlete’s mental attitude, providing motivation and acting as a distracter from unpleasant stimuli”⁴. According to Karageorghis (2008), music is only a motivational tool during submaximal exercise intensities because the physiological feelings, such as fatigue, will dominate and music will no longer be motivating. However, Tenenbaum et al., (2004) found the opposite result. The participants of the study supported listening to music during a high intensity exercise.

2.9.3 Intrinsic motivation inventory (IMI)

“The Intrinsic Motivation Inventory (IMI) is a multidimensional measurement device intended to assess participants’ subjective experience related to a target activity in laboratory experiments”. There are 45 items for seven subscales to the inventory that assess interest and enjoyment, perceived competence, effort, values and usefulness, felt pressure and tension, perceived choice and relatedness. The subscale to assess intrinsic motivation is the interest and enjoyment subscale. McAuley, Duncan, and Tammen (1989) stated that the use or exclusion of subscales does not have an effect on the results.

2.10 Ghanaian Hip Life Music

The term Hip-Life is set together of HipHop and Highlife, a Ghanaian musical style which evolved in the first half of the 20th century and became very popular among huge parts of the population but was regarded as old fashioned and “colo” (colonial) by the younger generations from the 1960s on (see Collins 2002: 63).

Due to the limited nature of literature on hiplife music the researcher had to rely on Wikipedia for the content of Hiplife music as presented below.

Hiplife is a Ghanaian musical style which fuses highlife and hip hop. It is also influenced by dancehall and reggae. Recorded predominantly in the Ghanaian language Akan, hiplife is rapidly gaining popularity throughout West Africa and abroad, especially in the United Kingdom, United States, Canada and Germany.

The origins of Ghanaian hip hop goes back to the 1980s, when performers such as K.K. Kabobo and Gyedu Blay Ambolley as early as 1973 with Ambolley's release of his first record, The "Simigwado" a semi-rap in (fante language) style hi-life to a small audience which showed him performing highlife variations with fast spoken, poetic lyrics. Ambolley would go on to be held as the "father of African rap" not only in Ghana but in the world. With time, Ghanaians became influenced by American hip hop, reggae, and dance hall. There was an emerging underground hip hop collective in the capital Accra

Hiplife's history dates back to the early 1990s. Jeff Tennyson Quaye better known around the world as Jay Q is one of the pioneers of Hiplife (in the mid 90s) and back bone of Ghana music as a whole. His own variation and introduction of Jama/kpanlogo to hiplife, makes writers refer to him as the "King of Jama". Reginald "Reggie Rockstone" Ossei also began to craft this art form with producers Mike Cooke, Rab Bakari, Zapp Mallet and Coal house. Chief G and the Tribe was one of the first rap groups in Ghana consisting of Chief G (now known as Jay Ghartey), Abeeku and Kwaku T. However, they broke up before Reggie's foray into what is now termed hiplife. Talking Drums,

consisting of Kwaku-T and Bayku, experimented with choruses and hooks in local languages. In Twi, Reggie would flow over hip-hop beats, a style that had been used previously in Mahoney P's debut album *Kofi Babone*. That same era Native Funk Lords group (NFL) came out with the pidgin rap; the originators of the genre, from the Kay's Frequency camp which consisted of Tinniequaye, Cil, Jake & Eddy Blay Jnr. This group also took inspirations from bands like the Osibisa and Ghanaba of Ghana. Rapper and producer Cavell was also part of the original NFL collective and is now known to many as The Mantis. Reggie Rockstone has been described as the "Godfather of Hiplife" since he spawned a new music genre in the country. After his debut album titled "Makaa Maka", with the hit single *Choo boi*, several hip life acts followed. Oddly enough, in several radio interviews in 2004, Reggie Rockstone stated that he does not perform hiplife this could be mainly attributed to the fact that he now prefers to rap in English. A new era was born late 1998 when a young producer Hammer of The Last Two emerged with original beats plus precision rap artistes. Hammer, born Edward Nana Poku Osei managed to fuse hip hop grooves with local tempo and sweet melody which caught up with both the elite and masses instantly. Known for his heavy drums and lead trumpets, Hammer's originality elevated hiplife to greater heights and inspired and influenced a whole generation of producers like Richie, Kill Beats, Jayso, EL etc. Hammer of The Last Two music camp groomed artistes who eventually became some of the biggest artistes in hiplife today e.g. Kwaw Kesse, Ayigbe Edem, Odeshi, Obrafour, Tinny, Sarkodie, Koo Wiase etc. Other Ghanaian rappers like Lord Kenya, Obour, V.I.P, The Native Funk Lords (Rapping mainly in pidgin English), Castro Destroyer and MzBel

continued the trend of hiplife music which is now one of the most popular forms of music in West Africa.

The most popular Hiplife musicians include Tic Tac, Sakodie, Vision in Progress (VIP), Asem, Obrafour, Ayigbe Edem, odeshi, D-Black, Castro, Koo Wiase and Samini who won a MOBO award for his contribution to hiplife in 2006. Since the rise of these popular musicians, hiplife has grown in popularity abroad. It must be said though artists like Ayigbe Edem, Kwaw Kesse, D-plan, Richie, ASEM, Koo Wiase, Sarkodie, Yaa pono, Keps, Lil Pope, Dirgen, Bra Kevin Beats, Greenfield, and Iscream.

In 2009 Ghanaian filmmaker, Mantse Aryeequaye, released a documentary focusing on the political history of the hip life movement in Ghana as well as hip-hop music amidst various political climates in the nation. In his film, Rhythm Rising, Aryeequaye also examines many famed Ghanaian artists such as Kwaw Kese, Kwaku Tutu and Obrafour through their experiences within hip life or hip-hop movement. The film works to explore and expose the culture of the hip life movement against the backdrop of Ghana's political environment.

Hip life in Ghana is sticking to a new trend of rhythm and this is mainly being influenced by great music engineers like Kill Beatz, Dj Dijoe, Pie-Sie, Jay So looney, Richie, Kaywa and Hammer of The Last Two. There is this confusion with classifying hip pop made in Ghana and Hip life but in all they bare the same qualities and share common rhythms.

2.11 Musical style of Hiplife

Hiplife can cover a broad range of musical styles fused together. Artists such as Samini combine reggae/dancehall/ragga scat and patois-tinged sounds of Jamaica with Akan-language lyrics over reggae rhythms fused with Ghanaian melodies. His music is branded by the general populace as hiplife. Then there are artists such as K.K. Fosu, Ofori Amponsah and Richie who do not rap or 'DJ' per se; but sing with a heavy R&B influence. Verses, bridges and choruses may be in Twi, but the structure and the rhythm fusion is suspiciously based on American R&B. But he and other artists like himself fall under contemporary hiplife.

The majority of hiplife is recorded in a studio environment with heavy emphasis on computer-aided composition, arrangements and production. At this moment, hiplife artists are not known to use live instruments in their performances in front of audiences. Most performances are based on voicing over instrumentals and dubs on Compact Disc. This may be a leading reason why the latest incarnation of Ghanaian music has not reached the ears of World Music promoters or bridged the frontiers of countries across Africa such as Congolese music has done.

Famous hiplife artists include Reggie Rockstone, Koo Wiase, Kwaw Kese, Obrafour, Obour, Tinny, Asem, Tic Tac, Mzbel, VIP, Buk Bak, KK Fosu, Batman Samini, Jaaklan, Okomfour Kwadee, Ayigbe Edem, Sarkodie, Okyeame Kwame, Bradez, Lord Kenya, Castro (D'Destroyer) Sydney, and J. Farrakhan. Producers include Jay Q, Appietus, Ro-Q, Richie, Kaywa, MiD 9ite Rekordz, Hammer of The Last Two, Roro, Zapp Mallet, Nana Quame, Hitz Factory, Big Dave, Kwam1, Panji, Beatmenace, K-Rock, Kevin Beats, Lordy and Seven and Pie-Sie.

Also to be noticed is the emergence of “Gh Rap” which is mainly underground hip hop made in Ghana the artists in this genre mainly rap in English or pidgin English. Most notable of the Ghanaian rappers and producers are: Tinnie quaye, keps (6side records), F.F.E (D-Plan, Dirgen, K-gee) The Skillions (Jayso, E.L.,Ball J, Jinx, Therapy, Midnight, J-Town), Ecxtreme, Nash, Nova. Evil Twin, Loonee, Pie-Sie, Kwam1, Nash Kevin beats, Greenfield (Ali & Jo Willy) Gemini, Kwaku-T, Kryptic, Illa Shaz, IsCream, Mic Wreckers (Lil Shaker, Joey, Killmatic), J town, N-Dex, Keps, Peer Pressure crew, Ronny O, Vibe Squad, Scientific, Big Money Records (Big Money SL, Lil' Pope) Tight Squeeze Family, Trigmatic, Wanlov, 24Seven (Lethal Lyrix and Kay-Ar {Da Mic Dude}) and more. Much of Ghanaian rappers emerged after moving from hiplife to specializing in just hip hop.

2.12 The Impact of Hiplife Music on Physical Fitness Activities

The literature on hiplife music is very limited and there is no literature on the impact of hiplife music on physical fitness activities.

2.13 Summary of Literature Review

Literature was reviewed in the following related areas: conceptual framework of the study, rated perceived exertion, music, the role of music in physical activities, mechanisms responsible for music’s performance enhancing properties, music genre and exercise, types of music genres, fast tempo music and slow tempo music, exercise intensity, rate of perceived exertion and heart rate, Ghanaian hip life music, musical style of hip life, and summary of literature reviewed.

After reviewing the literature and theories of music and its role in the physical fitness we can say that music has a way of influencing an individual during exercise. Based on the literature, the majority of studies stated that participants that listened to music while involved in physical exercise found it to be psychologically motivating and had positive physiological effects. Preferred music genre and fast upbeat music has a more positive effect on an individual in that their RPE values decrease, as well as improved motivation levels.

The current study assesses the role of hiplife music in the development of physical fitness among students of Mabang Senior High Technical School.

Unlike the studies reviewed above this study will use hiplife music which is indigenous to Ghana and is loved by the youth of Ghana to enhance physical activities.

Unlike the study by Yamahita et al (2006) which measures exercise intensity, rate of perceived exertion and heart rate the current study will focus on only exertion intensity.

In the current study the music will be selected by the teacher from his or her repertoire of music and not on students' preference.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter discussed the methods used in collecting data for the study. These include the research design, population, sample and sampling procedure, instruments as well as method of data analysis and problems encountered during the administration of the questionnaire and interview.

3.1 Research Design

This research adopted the Quasi-Experimental research design and employed a control group and used pretests. According to Johnson and Christensen (2008) is a design in which a treatment condition is assessed by comparing the pattern of pre-test with the pattern of post-test responses obtained from both the intervention and control group of participants. The control group chosen is the comparison group. Obtaining pretest measurements on both the intervention and control groups allows one to assess the initial comparability of the groups. The assumption is that if the intervention and the control groups are similar at the pretest, the smaller the likelihood there is of important confounding variables differing between the two groups.

The use of both a pretest and a comparison group makes it easier to avoid certain threats to validity. However, because the two groups are nonequivalent (assignment to the groups is not by randomization), selection bias may exist. Selection bias exists when selection results in differences in unit characteristics between conditions that may be related to outcome differences. The major design was used to examine the role of hip life music in

the development of physical fitness among the students of Mabang Senior High Technical School. One class i.e. the intervention group was selected to attend physical fitness class with hip- life music and the other class i.e. the control group attended the class without hip- life music. The researcher marked the attendance of the students three times for the two classes, those with hip-life music accompaniment and those without hip-life music. The researcher also conducted a series of physical activity tests at the beginning of the study which purpose was to collect baseline data upon which the success or otherwise of the intervention would be compared to at the end of the study.

3.2 Population

Population according to Avoke (2005) is the group of interest to a researcher for a study. Population mostly comprises the entire aggregation of elements in which the researcher is interested.

The population consisted of all students in the Mabang Senior High Technical School. Students in S.H.S one, All 103 P.E instructors in the Ahafo Ano North District, Ashanti Region

3.3 Sample and Sampling Technique

Sample is usually the subset of the entire population of interest to the researcher. In research, it is usually not feasible to involve all the entire population and therefore the need to select some of them. The sample should have identical characteristics with the rest of the population (Avoke 2005).

The sample is made up of Students from Mabang Senior High Technical School. P.E teachers in Mabang Senior High Technical School and Tapa Senior High School and all 103 P.E instructors in the Ahafo Ano North District.

In this area a simple random sampling was employed to select student respondents. In all forty students were selected, twenty boys and twenty girls. Papers were folded with YES or NO inscription those who picked YES were selected. Purposive sampling technique was used in selecting the teachers to form the sample for the study.

Purposive sampling is a non-random sampling technique. They were purposively selected based on the fact that they taught P.E. in their respective schools. However, All P.E teachers in the two Senior High Schools were selected along with 38 P.E. teachers from Basic Schools who were selected based on distance from the researcher's destination. The total number amounted to 40 teachers.

3.4 Instrumentation

The instrumentation depicts tools used in the collection of data. This study used the following: class attendance rate and time of reporting for class, endurance tests and questionnaire.

3.4.1 Class attendance rate and time of reporting for class

A record of students' class attendance rates and times for reporting to class would be kept and used to gauge the effectiveness of the intervention. This would be measured throughout the course of the study for both the intervention and the control groups.

3.4.2 Endurance Tests

Endurance testing involves determining the amount of time a person can maintain an activity or perform a task or activity of daily living before becoming fatigued and needing to stop. The level of activity used to test endurance can be minimal to maximal. Endurance testing is often used to assess a person's cardiovascular fitness to determine if cardiovascular disease is present and to evaluate the patient before embarking on a physical fitness program. The goal of exercise testing is to produce a sufficient level of exercise stress without too much strain on an individual. Exercise tests measure breathlessness and perceived exertion. The physical education teacher takes note of any discomfort or pain and also notes the time the students take to stop the various exercises/activities and an average time is computed. This would be administered for both the intervention and control group at various stages of the intervention and scores would be compared against each other.

3.4.3 Questionnaire

Questionnaire was used to gather the data, three different sets of the questionnaire were designed for the different group of respondents i.e. the intervention group, the control group and the P.E. teachers to answer, and this was based on the research questions.

The questionnaires were both open ended and close ended types for the respondents to be administered. With the closed ended questions the respondents were given likert scale items and were requested to tick the appropriate one.

In the case of the close ended, four (4) or more alternatives in the form of a likert scale were provided after the question and the respondents were expected to tick the correct alternative. In some of the questions provisions were made for the respondents to offer suggestions.

3.5 Validity and Reliability of Instrument

Validity refers to the appropriateness, meaningfulness, and usefulness of the specific inferences made from test scores (APA, 1995:9) cited in (Crowl, Kaminsky and Podell 1997). They stated that a test is valid only for measuring a particular characteristic of a particular group of people under a particular set of circumstances.

In testing for the validity of the endurance tests and questionnaires, they were given to experts who in this case were lecturers in the Department of Health, Physical Education, Recreation & Sports (HPERS) who are well versed in research work for their perusal. It was also vetted by the Ashanti Regional Sports Coordinator as a form peer review. Some of the question items were modified and worked on, thus the face validity of the interview guide was put in order to assess the differences in answering the questions and identified the inconsistencies and ambiguities in order to enhance its validity.

In testing for the reliability of the instruments, the questionnaire was piloted on twenty (20) students sampled from the Winneba Senior High School in the Central Region of Ghana which was not part of the study area. Reliability is the extent to which a test or procedure produces similar result under constant conditions on all occasions (Bell, 1993). The pilot testing approach was used to establish the reliability Chronbach co-efficient of $r = .85$ of the instrument.

3.6 Administration of Questionnaire

The researcher first secured an introductory letter from the Department of Health, Physical Education, Recreation & Sports (HPERS) of the University of Education, Winneba to enable him gain access to the respondents. Copies of this letter were given to the various heads of the Schools involved to officially introduce the researcher. Upon approval, the tests were administered to get the baseline data i.e. the pre-test. The intervention programme was also given to the intervention group and after the intervention the post-test endurance test was administered to both the control and intervention group. The questionnaires were administered by the researcher and two research assistants trained by the researcher at the end of the study. Respondents were educated on the rationale of the study and the need for honesty was emphasized. The students and teachers were given enough time to answer the questions.

3.7 Data Analysis Procedure

The completed questionnaires were gathered, coded and arranged to facilitate easy identification. The Statistical Package for Social services (SPSS) was used in the analysis. The data was analysed using simple frequency counts, simple percentage descriptions as well as t-test analysis where relevant. Coding is the process of segmenting and labeling text to form description and broad themes in data (Cresswell 2005 cited in Avoke 2005). This strategy helped to reduce redundancies in found within the data. Themes and sub themes that emerged in relation to the research questions were used for the discussion. Direct quotations and related literature were used to support and enrich the discussion.

Quantitative interpretations were adopted and backed by the literature to make the interpretation authentic. In this regard, tables and charts were used to support the analyses to make it clearer.



CHAPTER FOUR

RESULTS, FINDINGS AND DISCUSSIONS

4.0 Introduction

This chapter was divided into three sections. The first section presents the demographic characteristics of the respondents. The second section presents general information concerning the use of Hiplife and the third section presents the findings based on the research questions for the study.

4.1 Demographic Characteristics of Student Respondents

Table 1 Sex distribution of the Respondents

Sex	Frequency	Percentage (%)
Male	20	50
Female	20	50
Total	40	100

Table 1 presents the distribution of the respondents by their sex. Table 1 above shows that for the respondents 20 (50%) were males and 20 (50%) were females.

Table 2 Age distribution of the student Respondents

Age (Years)	Frequency	Percentage (%)
Below 14	0	0
15 – 16	27	67
17 – 18	10	25
19 and Above	3	8
Total	40	100

Table 2 presents the age distribution of the respondents as presented in the study. The dominant age group of the respondents according to table 2 above ranges between 15 – 16 years (67%) followed by 17 – 18 years (25%), followed by ages 19 years and above (8%) and finally below 14 years (0%) which no respondent.

It is worth noting that all of the respondents were students in SHS 2 (100%). There were 20 students (50%) of the sample in the Regular group and 20 students (50%) of the total sample in the Control group. The groups were made up of 10 males and 10 females respectively.

Demographic Characteristics of Teacher Respondents

Table 3 Sex distribution of the Respondents

Sex	Frequency	Percentage (%)
Male	32	80
Female	8	20
Total	40	100

Table 3 presents the distribution of the respondents by their sex. Table 1 above shows that for the respondents 32 (80%) were males and 8 (20%) were females.

Table 4 Age distribution of the student Respondents

Age (Years)	Frequency	Percentage (%)
20 - 29	8	20
30 - 39	22	55
40 - 49	6	15
50 and Above	4	10
Total	40	100

Table 4 provide the age distribution of the respondents as presented in the study. The dominant age group of the respondents according to table 2 above ranges between 30 – 39 years (55%, n=22) followed by 20 – 29 years (20%, n=8), followed by ages 40 – 49 years (15%, n=6) and finally 50 years and above (10%, n=4).

Table 5 Class distribution of the Respondents

School	Frequency	Percentage (%)
SHS	4	10
JHS	20	50
Primary	16	40
Total	40	100

Table 5 presents the distribution of the teachers by their class. Ten percent (10%, n=4) of the teachers taught in the Senior High School, while 50% (n=20) taught in the Junior High School. Forty percent (40%, n=16) taught in the primary schools.

Table 6 Educational Status of Teachers

Educational Status	Frequency	Percentage (%)
First Degree	8	20
Diploma Degree	20	50
Cert 'A'	8	20
Pupil Teachers	4	10
Total	40	100

Table 6 above illustrates that 50% (n=20) of the respondents were Diploma degree holders, while 20% (n=8) were First degree and Cert 'A' holders and 10% were pupil teachers.

Table 7 Work Experience of Respondents

Working Experience	Frequency	Percentage (%)
1 – 5 years	12	30
6 – 10 years	20	50
11 – 15 years	4	10
16- 20 years	4	10
20 years and above	0	0
Total	40	100

With regards to their working experience, 30% (n=12) of the teachers reported that they had worked between the years 1 to 5, 50% (n=20) indicated that they have worked for 6 to 10 years, 10% (n=4) also reported that they have worked for 11 to 15 years and 16-20 years respectively whiles none of the respondents indicated that they had worked for 20 years and above.

4.3 General Data presentation on the use of Hiplife

Twenty percent (20%, n=8) of the teachers responded that they used music to enhance the teaching and learning of physical training activities while 80% (n=32) stated that they did not use music. Fifty percent (50%, n=20) of the teachers stated that never used music in the teaching and learning of physical fitness activities, 25% (n=10) stated that they rarely used music, 20% (n=8) stated that they sometimes used music and 5% (n=2) stated that they often used music in their physical fitness activities. None of the teachers stated that they always used music in their physical fitness activities. However, 60% (n=24) strongly agreed that music helps in the teaching and learning of physical fitness activities, 30% (n=12) agreed that music helps and 10% (n=4) were neutral on whether music helped in the teaching and learning of physical fitness activities. No respondent disagreed or strongly disagreed to this assertion.

Fifty percent (50%, n=20) of the teachers stated they would prefer using Hiplife music for their Physical Education classes, 25% (n=10) stated that they would prefer using Hiphop music, 15% (n=6) stated that they would prefer using dancehall music and 10% (n=4) stated that they would prefer using RNB music. No respondent stated that they would prefer using cools in their physical education classes.

4.4 Data Presentation for research questions

4.4.1 Research Question 1: To what extent will rhythmic Ghanaian Hip life music attract senior high school students to participate in physical fitness activities?

Table 8 Students average participation numbers

Group	Average No. of students at the start of the class	Average No. of students after 10 minutes	Average No of students after 20 minutes	Average No. of students after 30 minutes	Average No. of students at the end of the class
Control	12 (60%)	13 (65%)	13 (65%)	13 (65%)	12 (60%)
Regular	18 (90%)	19 (95%)	19 (95%)	19 (95%)	19 (95%)

Table 8 above presents the average participation of students over 5 consecutive physical education classes for the 2 groups of students. The control group did not use Hiplife music for its classes while the regular group used Hiplife music for their physical education classes.

For the control group, there was an average of 60% (n=12) of students present in class at the start of the lesson. An average of 65% (n=13) of students were present and participating in class 10 minutes from the start of the lesson. This number remained the same 20 minutes and 30 minutes into the lesson respectively and finally the average number of students dropped to 60% (n=12) by the end of the lesson.

For the regular group who used Hiplife music in their lessons, there was an average of 90% (n=18) of students present in class at the start of the lesson. An average of 95% (n=19) of students were present and participating in class 10 minutes from the start of the lesson. This number remained the same 20 minutes and 30 minutes into the lesson respectively. At the end of the class the average number of students remained constant at 95% (n=19).

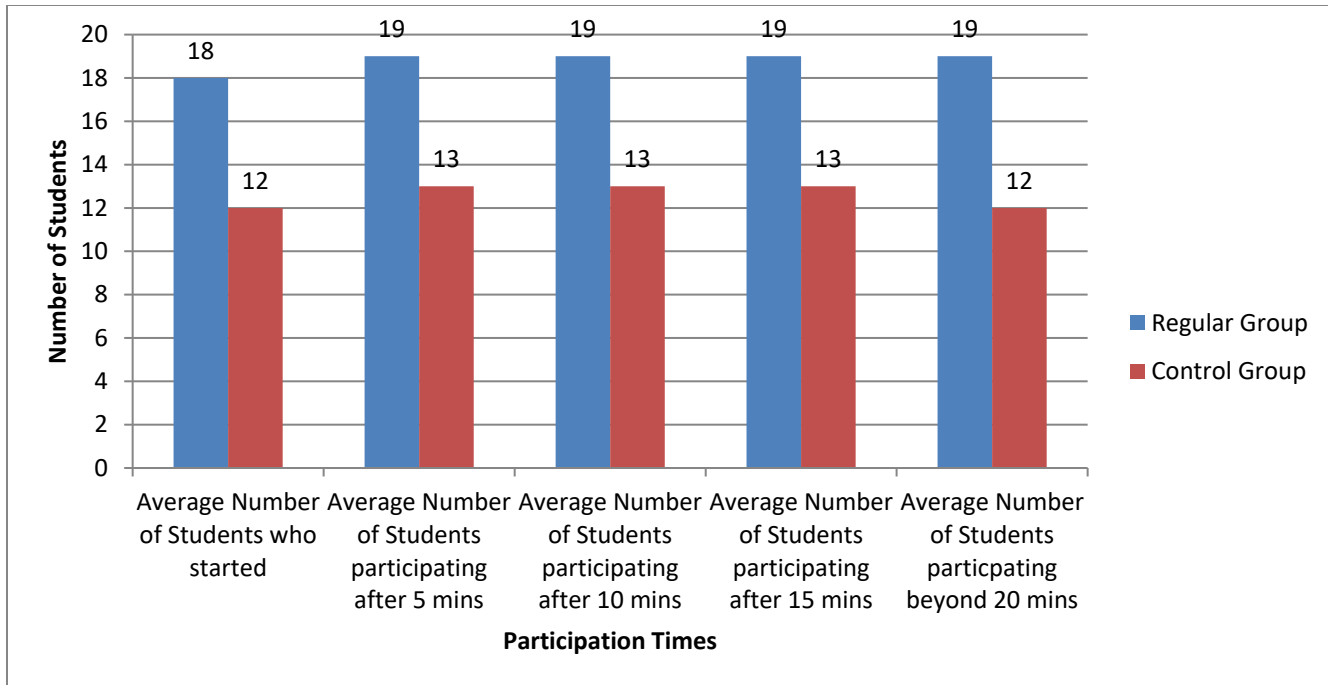


Figure 1 Average student participation times



Regular Group**Table 9 Endurance Test Participation Results Regular Group**

Activity	Average number of students who started	Average Number of students participating after 5 minutes	Average Number of students participating after 10 minutes	Average Number of students participating after 15 minutes	Average Number of students participating after 20 minutes and beyond
Jogging (Cardio)	18 (90%)	18 (90%)	16 (80%)	13 (65%)	13 (65%)
Running (Cardio)	18 (90%)	17 (85%)	17 (85%)	14 (70%)	13 (65%)
Pushups (muscular)	18 (90%)	18 (90%)	15 (75%)	13 (65%)	12 (60%)
Sit ups (Muscular)	18 (90%)	18 (90%)	16 (80%)	13 (65%)	13 (65%)
Squats (Muscular)	18 (90%)	18 (90%)	16 (80%)	13 (65%)	12 (60%)
Step Test (Cardio & Muscular)	18 (90%)	18 (90%)	17 (85%)	13 (65%)	11 (55%)
Dancing Aerobics (Cardio & Muscular)	18 (90%)	18 (90%)	16 (80%)	14 (70%)	14 (70%)

In the regular group, for the jogging activity there was an average of 90% (n=18) students who started the activity. After 5 minutes the same percentage of students (90%, n=18) were performing the activity. After 10 minutes an average of 85% (n=16) were participating. This number decreased to 65% (n=13) after 15 minutes and beyond 20 minutes the number remained constant i.e. 65% (n=13).

For the running activity there was an average of 90% (n=18) students who started the activity. After 5 minutes the average percentage of students decreased to 85% (n=17). After 10 minutes the average percentage remained the same. This number decreased to 70% (n=14) after 15 minutes and beyond 20 minutes the number further reduced to 65% (n=13).

For the push-ups activity there was an average of 90% (n=18) students who started the activity. After 5 minutes the average percentage of students remained the same. After 10 minutes the average percentage reduced to 75% (n=15). This average percentage further decreased to 65% (n=13) after 15 minutes and beyond 20 minutes the average number of participants further reduced to 60% (n=12).

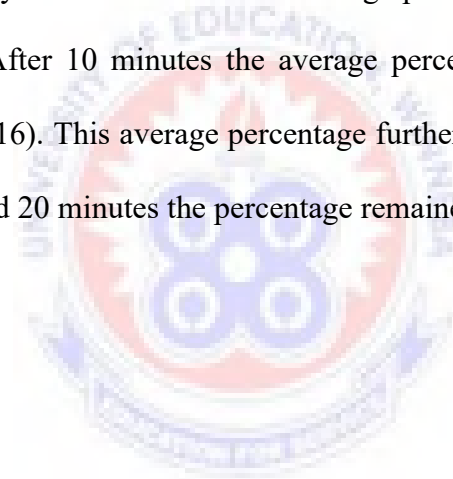
For the sit-ups activity there was an average of 90% (n=18) students who started the activity. After 5 minutes the average percentage of students participating remained the same. After 10 minutes the average percentage reduced to 80% (n=16). This number further decreased to 65% (n=13) after 15 minutes and beyond 20 minutes the number average number of participating students remained the same i.e. (65%, n=13).

During the squats activity there was an average of 90% (n=18) students who started the activity. After 5 minutes the average percentage of students participating remained the same. After 10 minutes the average percentage of participating students decreased to 80%

(n=16). This average percentage further decreased to 65% (n=13) after 15 minutes and beyond 20 minutes the percentage further reduced to 60% (n=12).

For the steps test activity there was an average of 90% (n=18) students who started the activity. After 5 minutes the average percentage of students participating remained the same. After 10 minutes the average percentage reduced to 85% (n=17). This averaged percentage further decreased to 65% (n=13) after 15 minutes and beyond 20 minutes the average percentage of participating students further dropped to 55% (n=11).

Finally, during the dancing aerobics activity there was an average of 90% (n=18) students who started the activity. After 5 minutes the average percentage of students participating remained the same. After 10 minutes the average percentage of participating students decreased to 80% (n=16). This average percentage further decreased to 70% (n=14) after 15 minutes and beyond 20 minutes the percentage remained the same i.e. 70% (n=14).



Control Group**Table 10 Endurance Test Participation Results Regular Group**

Activity	Average number of students who started	Average Number of students participating after 5 minutes	Average Number of students participating after 10 minutes	Average Number of students participating after 15 minutes	Average Number of students participating after 20 minutes and beyond
Jogging (Cardio)	12 (60%)	10 (50%)	8 (40%)	6 (30%)	4 (20%)
Running (Cardio)	12 (60%)	12 (60%)	9 (45%)	7 (35%)	5 (25%)
Push ups(muscular)	12 (60%)	9 (45%)	7 (35%)	6 (30%)	4 (20%)
Sit ups (Muscular)	12 (60%)	11 (55%)	9 (45%)	6 (30%)	4 (20%)
Squats (Muscular)	12 (60%)	12 (60%)	8 (40%)	7 (35%)	5 (25%)
Step Test (Cardio & Muscular)	12 (60%)	10 (50%)	8 (40%)	5 (25%)	3 (15%)
Dancing Aerobics (Cardio & Muscular)	12 (60%)	9 (45%)	7 (35%)	6 (30%)	4 (20%)

In the control group, for the jogging activity there was an average of 60% (n=12) students who started the activity. After 5 minutes the average percentage of students participating dropped to 50% (n=10). After 10 minutes the average percentage of students participating dropped further to 40% (n=8). This number decreased to 30% (n=6) after 15 minutes and beyond 20 minutes the average percentage of participants dropped further to 20% (n=4).

For the running activity there was an average of 60% (n=12) students who started the activity. After 5 minutes the average percentage of students remained the same. After 10 minutes the average percentage of participants decreased to 45% (n=9). This number decreased to 35% (n=7) after 15 minutes and beyond 20 minutes the number further reduced to 25% (n=5).

For the push-ups activity there was an average of 60% (n=12) students who started the activity. After 5 minutes the average percentage of participating students dropped to 45% (n=9). After 10 minutes the average percentage further dropped to 35% (n=7). This average percentage further decreased to 30% (n=6) after 15 minutes and beyond 20 minutes the average number of participants further reduced to 20% (n=4).

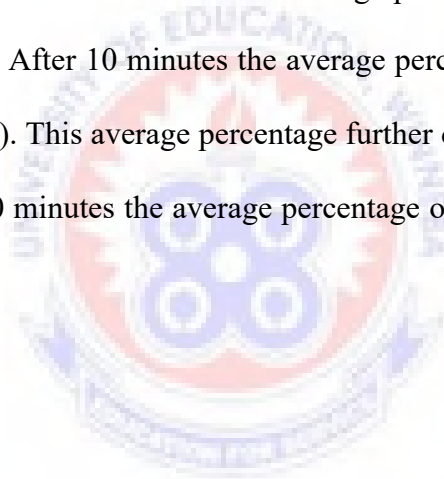
For the sit-ups activity there was an average of 60% (n=12) students who started the activity. After 5 minutes the average percentage of students participating reduced to 55% (n=11). After 10 minutes the average percentage reduced to 45% (n=9). This number further decreased to 30% (n=6) after 15 minutes and beyond 20 minutes the number average number of participating students further reduced to 20% (n=4).

During the squats activity there was an average of 60% (n=18) students who started the activity. After 5 minutes the average percentage of students participating remained the same. After 10 minutes the average percentage of participating students decreased to 40%

(n=8). This average percentage further decreased to 35% (n=7) after 15 minutes and beyond 20 minutes the percentage further reduced to 25% (n=5).

For the steps test activity there was an average of 60% (n=12) students who started the activity. After 5 minutes the average percentage of students participating dropped to 50% (n=10). After 10 minutes the average percentage reduced to 40% (n=8). This average percentage further decreased to 25% (n=5) after 15 minutes and beyond 20 minutes the average percentage of participating students further dropped to 15% (n=3).

Finally, during the dancing aerobics activity there was an average of 60% (n=12) students who started the activity. After 5 minutes the average percentage of students participating dropped to 45% (n=9). After 10 minutes the average percentage of participating students decreased to 35% (n=7). This average percentage further decreased to 30% (n=6) after 15 minutes and beyond 20 minutes the average percentage of participating students dropped further to 20% (n=4).



Comparison of average number of participating students in the various activities between the regular and control group

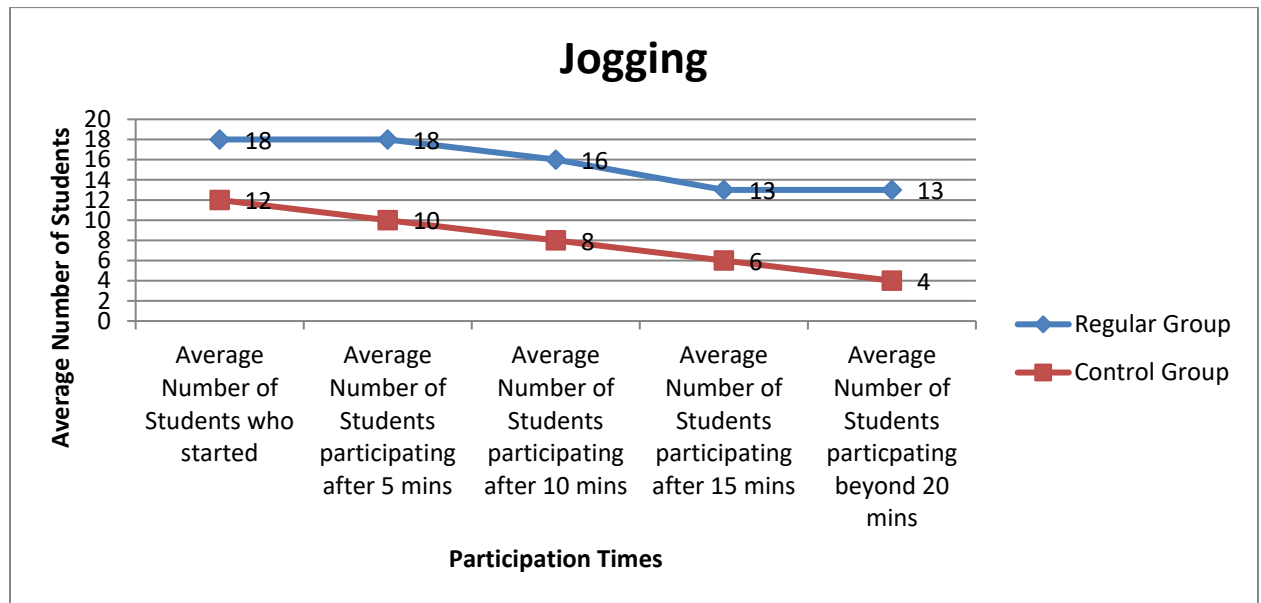


Figure 2 Comparison of jogging activity between regular and control group

Figure 2 above shows that for jogging there was an observed difference between the regular group and control group in students average participation numbers, with the regular group showing higher average participation numbers than the control group.

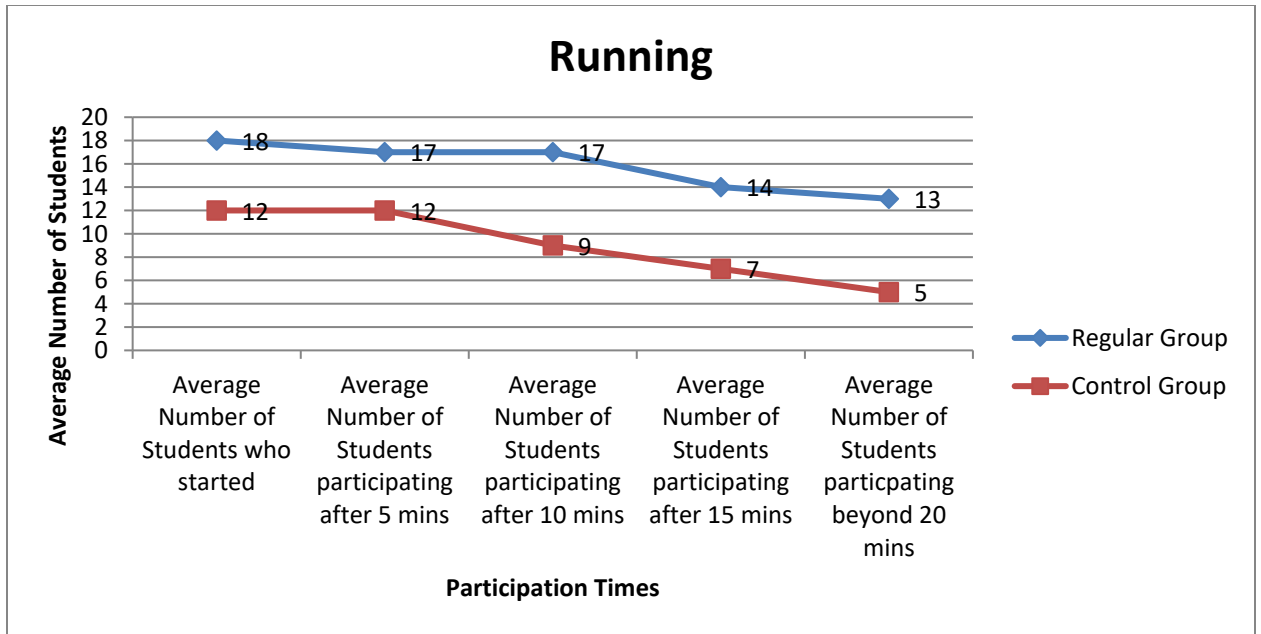


Figure 3 Comparison of running activity between regular and control group

Figure 3 above shows that for running there was an observed difference between the regular group and control group in students average participation numbers, with the regular group showing higher average participation numbers than the control group.

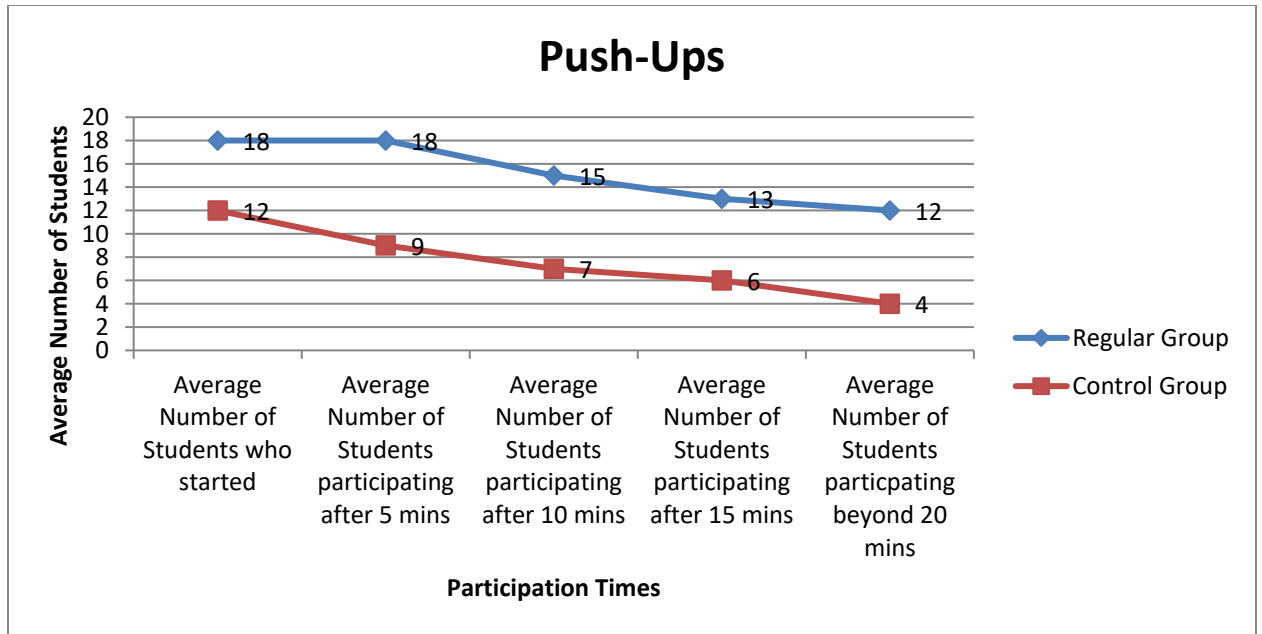


Figure 4 Comparison of push-ups activity between regular and control group

Figure 4 above shows that for push-ups activities there was an observed difference between the regular group and control group in students average participation numbers, with the regular group showing higher average participation numbers than the control group.

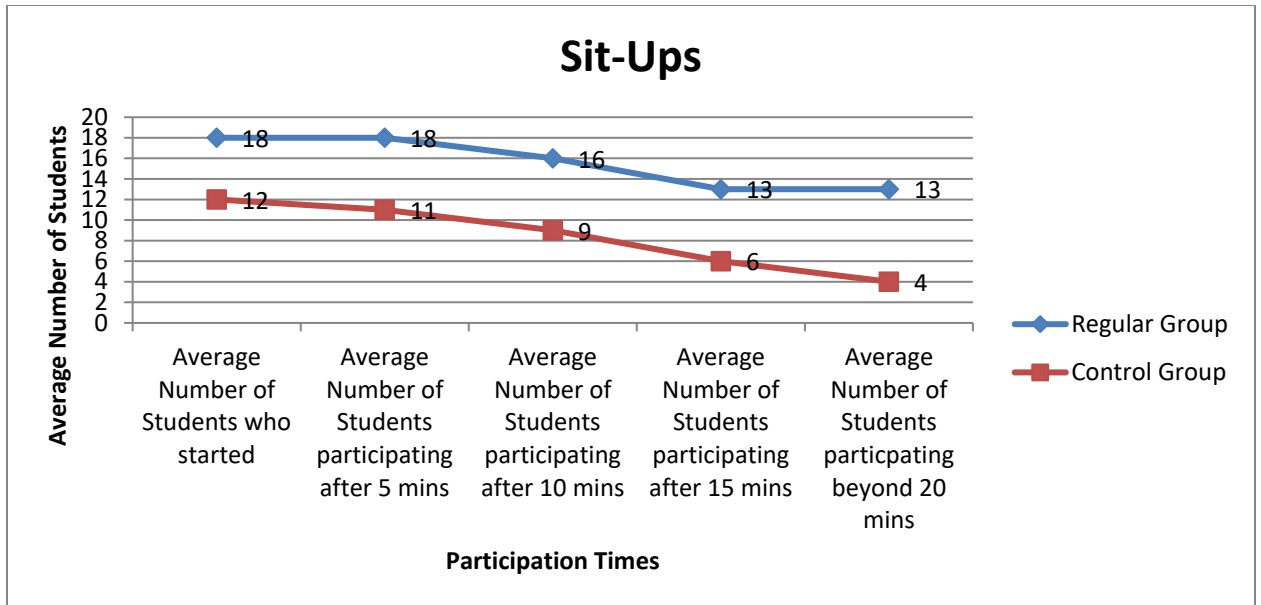


Figure 5 Comparison of sit-ups activity between regular and control group

Figure 5 above shows that for sit-ups activities there was an observed difference between the regular group and control group in students average participation numbers, with the regular group showing higher average participation numbers than the control group.

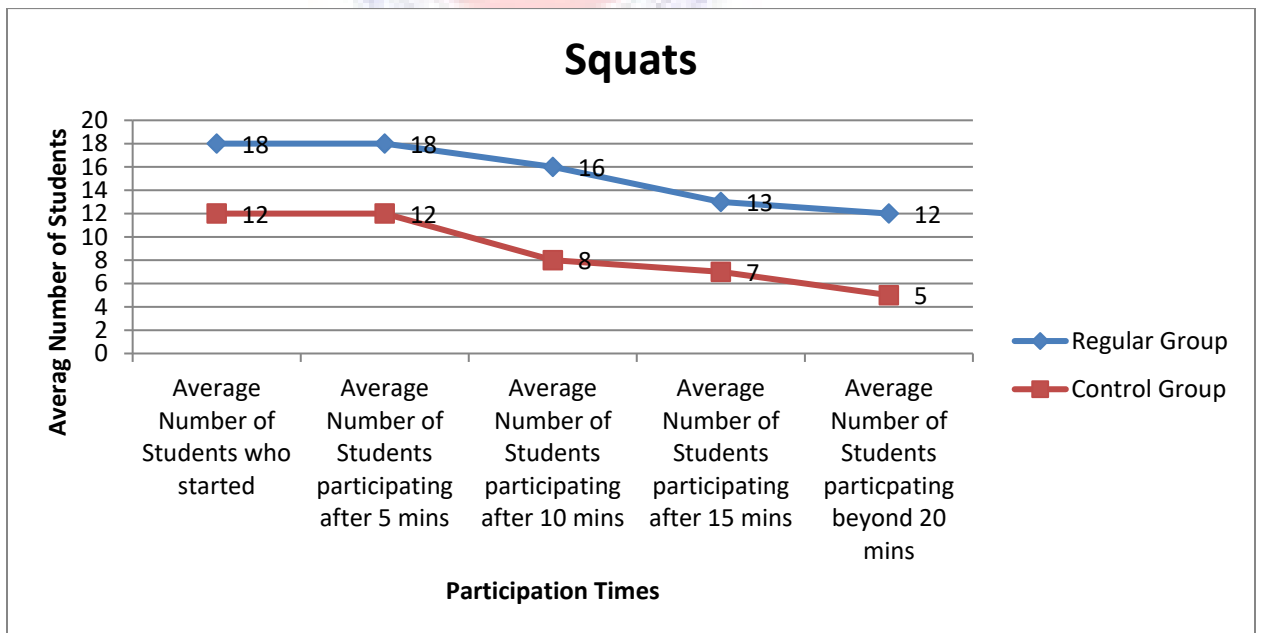


Figure 6 Comparison of squats activity between regular and control group

Figure 6 above shows that for squats activities there was an observed difference between the regular group and control group in students average participation numbers, with the regular group showing higher average participation numbers than the control group.

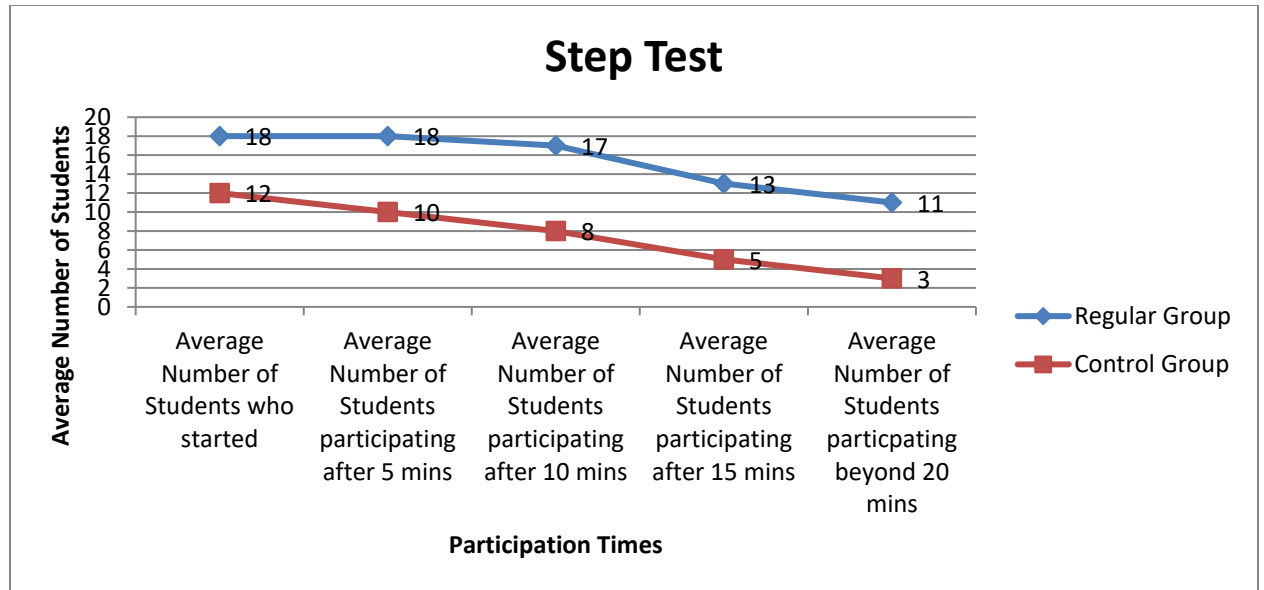


Figure 7 Comparison of step test activity between regular and control group

Figure 7 above shows that for the step test activity there was an observed difference between the regular group and control group in students average participation numbers, with the regular group showing higher average participation numbers than the control group.

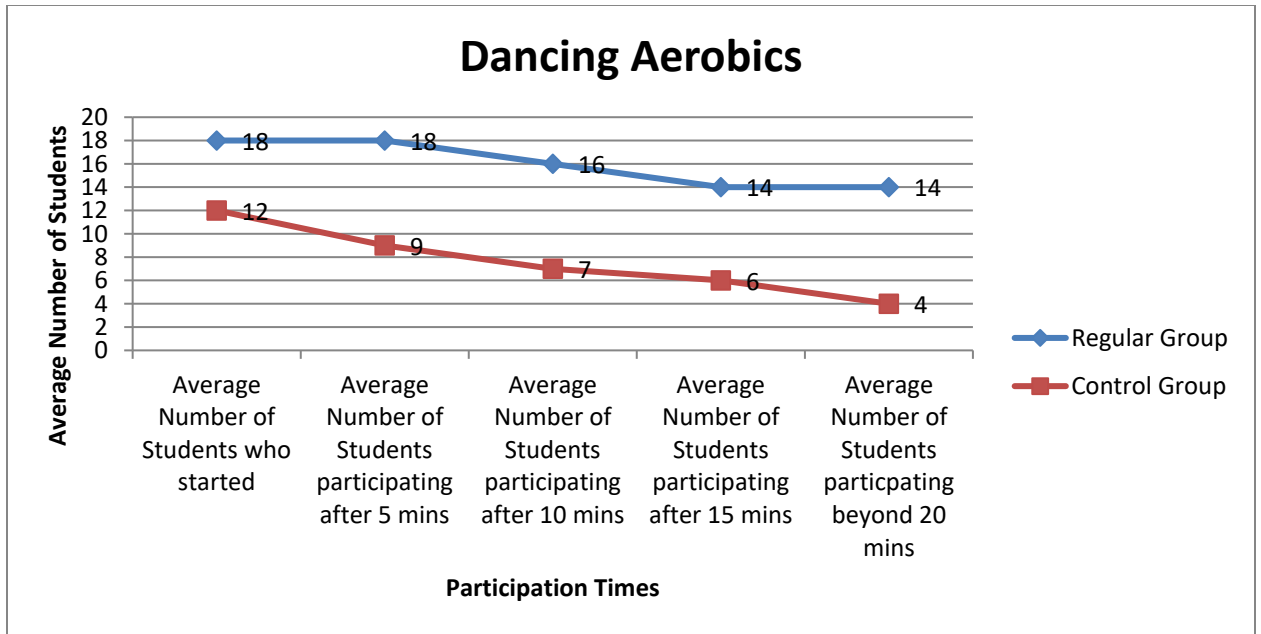


Figure 8 Comparison of dancing aerobics activity between regular and control group

Figure 8 above shows that for the dancing aerobics activity there was an observed difference between the regular group and control group in students average participation numbers, with the regular group showing higher average participation numbers than the control group.

There is an observed difference in the performance of the regular group which used hiplife music in its physical education lessons as against the performance of the control group which did not use Hiplife music or any form of music in its lessons.

However, the researcher wanted to make sure that the observed differences was statistically significant hence the use of the t-test with the results presented in the table below.

Table 11 Result of t-test Analysis of Endurance Test Activities

Activity		N	\bar{X}	Sd	df	T Value	P. Value
Jogging	Regular Control	5	8	4.83	4	7.173	0.0029
Running	Regular Control	5	9	4.38	4	5.951	0.0038
Push-Ups	Regular Control	5	7	4.86	4	5.951	0.0033
Sit-Ups	Regular Control	5	8	4.70	4	5.321	0.0071
Squats	Regular Control	5	6	4.46	4	5.123	0.0077
Step Test	Regular Control	5	7	5.23	4	5.315	0.0071
Dancing Aerobics	Regular Control	5	8	5.05	4	8.610	0.0009

From table 11 above the researcher rejected the alternate hypothesis and accepted the null hypothesis which states that “Using Ghanaian music and dance “Hip Life music” to accompany performance in physical fitness activities **will significantly enhance** the teaching and learning of some physical fitness parameters in senior high schools in Ghana”. This was due to the fact that there are statistically significant differences between the average participation numbers of students between the regular group who used Hiplife music and the control group which did not use music in their lesson. This was evident as the p values for each activity are less than α at 0.05 (i.e. $p < .05$). Thus, this implies that the group of students who used music in their lessons had higher participation rates than those who did not use music.

4.4.2 Research Question Two: How does Ghanaian Hiplife music enhance the teaching and learning of physical fitness activities in Mabang Senior High School

Table 12 Extent of agreement that music helps in the teaching and learning of physical fitness activities

To what extent do you agree that music helps in the teaching and learning of physical fitness activities?	Frequency	Percentage (%)
Strongly Agree	26	65
Agree	9	23
Neutral	3	8
Disagree	1	2
Strongly Disagree	1	2
Total	40	100

From table 12 above, 65% (n=26) of the teachers stated that they strongly agreed that music helps in the teaching and learning of physical fitness activities, 23% (n=9) agreed, 8% (n=3) were neutral and 2% (n=1) stated that they disagreed and strongly disagreed respectively.

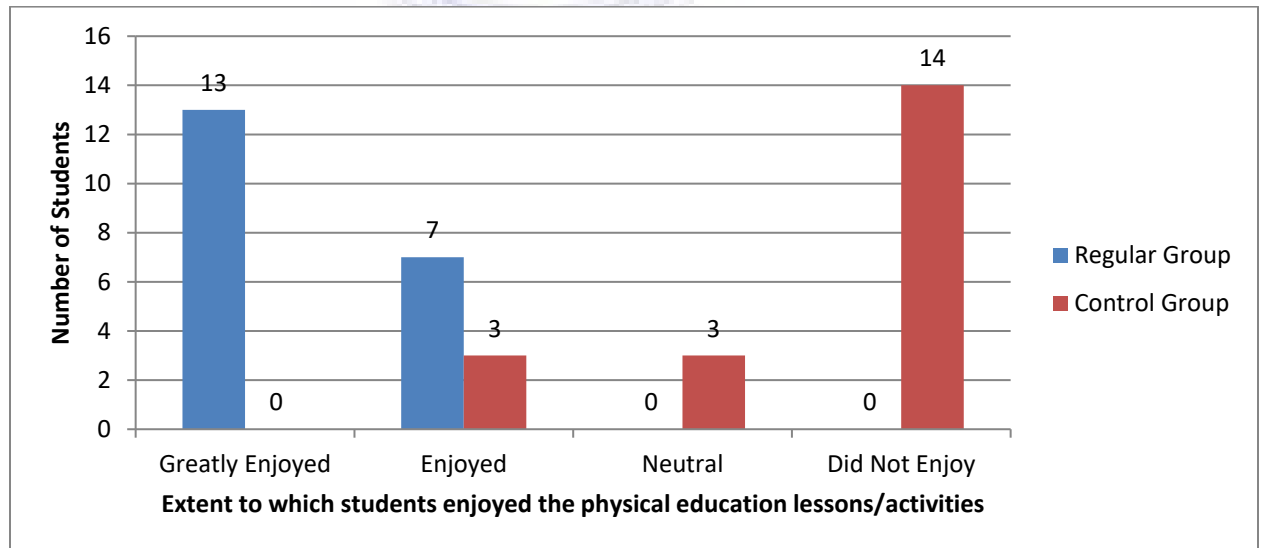


Figure 9 Extent to which students enjoyed the physical education lessons/activities

Figure 9 above shows a comparison of the answers by respondents about how much they enjoyed the physical education lessons/activities. The regular group used hiplife music for their classes/activities and the control group did not.

For the regular group who used Hiplife music in their lessons, 65% (n=13) of students stated that they greatly enjoyed the lesson, 35% (n=7) stated that they enjoyed the lesson. No student stated that they were neutral or did not enjoy the lesson. However, for the control group, no student stated that they greatly enjoyed the lesson, 15% (n=3) stated that they enjoyed the lesson and were neutral respectively. 70% (n=14) stated that they did not enjoy the lesson whatsoever.

Table 13 How music helped in the delivery of prescribed fitness activities (Teachers)

How did the use of music help in the delivery of prescribed fitness activities? (Teachers)	Frequency	Percentage (%)
Takes participants mind off the pain	18	45
Motivates the participant	12	30
Increases participants endurance	4	10
Improves participants concentration	6	15
Total	40	100

From table 13 above, teachers responded that music enhanced the delivery of the physical fitness activities as follows: Forty five percent (45%, n=18) stated that it takes participants mind off the pain, 30% (n=12) stated that it motivates the participant, 10% (n=4) stated that it increases the participants endurance and 15% (n=6) stated that it improved participants concentration.

Table 14 How music helped in the delivery of prescribed fitness activities (students)

How did the use of music help in the delivery of prescribed fitness activities?	Frequency	Percentage (%)
Takes participants mind off the pain	5	25
Motivates the participant	5	25
Increases participants endurance	2	10
Improves participants concentration	8	40
Total	20	100

From table 14 above, regular students responded that music enhanced the delivery of the physical fitness activities as follows: twenty five percent (25%, n=5) stated that it takes participants mind off the pain, and it motivates the participant, 10% (n=2) stated that it increases the participants endurance and 40% (n=8) stated that it improved participants concentration.

4.4.3 Research Question Three: What is the impact of Hiplife Music on Students physical fitness activities in Mabang Senior High School?

Table 15 Extent to which the choice of music enhanced the delivery of prescribed fitness activities

To what extent did the choice of music enhance the delivery of the prescribed fitness activities?	Frequency	Percentage (%)
Greatly enhanced	9	45
Enhanced	6	30
No Enhancement	2	10
Failed to enhance	3	15
Total	20	100

From table 15 above, 45% (n=9) students stated that music enhanced the delivery of the physical fitness activities, 30% (n=6) stated that it enhanced the delivery of prescribed

fitness activities, 10% (n=2) stated that it no enhancement, and 15% (n=3) stated that failed to enhance the prescribed fitness activities.

Table 16 Impact of Hiplife music on students physical activities

What is the impact of Hiplife music on students physical activities?	Frequency	Percentage (%)
Participants reported promptly to class	7	35
Motivated participants to perform physical activities	4	20
Students participated for longer periods	5	25
Improves participants concentration	4	20
Total	20	100

The students went further to state that the hiplife music impacted the students physical activities in the following ways: 35% (n=7) stated that it encouraged participants to report promptly to class, 20% (n=4) stated that it motivated participants to perform physical fitness activities, 25% (n=5) stated that it enable students participate for longer periods and finally 20% (n=4) stated that it improved participants concentration.

Table 17 Role of hiplife music in the teaching and learning of physical activities

In your opinion what do you think is the role of Hiplife music in teaching and learning of physical activities?	Frequency	Percentage (%)
Reduces fatigue	16	40
Performance enhancing	10	25
Enhancement of positive feelings	8	20
Promotes relaxation and efficiency	6	15
Total	40	100

Teachers stated that in their opinion, hiplife impacted the teaching and learning of physical activities by playing the following roles: 40% (n=16) stated that it helps reduce fatigue, 25% (n=10) stated that the music enhanced students' performance, 20% (n=8) also stated that it caused an enhancement of positive feelings of participants, and 15% (n=6) stated that it promoted relaxation and efficiency in the teaching and learning of the physical fitness activities.

Now with a simple majority of 40%, it is the participants' opinion that hiplife music influences students' participation in physical fitness activities.

4.4.4 Research Question four: How does instructors' knowledge in Ghanaian music and dance enable them to prescribe the required physical fitness activities for learners?

Table 18 Role teachers knowledge of hiplife music played in the design of physical fitness activities

What role did your knowledge of Hiplife music play in helping you design physical fitness activities that utilized music for their delivery?	Frequency	Percentage (%)
Very Helpful	18	45
Helpful	12	30
Satisfactory	4	10
Useless	6	15
Total	40	100

From table 18 above, 45% (n=18) stated that their knowledge of Hiplife music was very helpful in the design of physical fitness activities, 30% (n=12) stated that it was helpful, 10% (n=4) stated that it was satisfactory and 15% (n=6) stated that it was useless. Thus

with a simple majority of 75% it is the opinion of the teachers that their knowledge of Hiplife music helped in the design of physical fitness activities.

Table 19 Role teachers repertoire of hiplife music played in the design of physical fitness activities

What role did your repertoire of Hiplife music play in helping you design physical fitness activities that utilized music for their delivery?	Frequency	Percentage (%)
Very Helpful	16	40
Helpful	14	35
Satisfactory	6	15
Useless	4	10
Total	40	100

From table 19 above, 40% (n=16) stated that their repertoire of Hiplife music was very helpful in the design of physical fitness activities, 35% (n=14) stated that it was helpful, 15% (n=6) stated that it was satisfactory and 10% (n=4) stated that their repertoire of hiplife music was useless in the design of physical fitness activities that utilized music for their delivery.

From the table 18 above, 45% (n=9) students stated that music enhanced the delivery of the physical fitness activities, 30% (n=6) stated that it enhanced the delivery of prescribed fitness activities, 10% (n=2) stated that it no enhancement, and 15% (n=3) stated that failed to enhance the prescribed fitness activities.

It could be seen that the regular group who used Hiplife music in their lessons, 65% (n=13) of students stated that they greatly enjoyed the lesson, 35% (n=7) stated that they enjoyed the lesson. No student stated that they were neutral of did not enjoy the lesson.

This is in contrast to the control group where no student stated that they greatly enjoyed the lesson, 15% (n=3) stated that they enjoyed the lesson and were neutral respectively. 70% (n=14) stated that they did not enjoy the lesson whatsoever.

4.5 DISCUSSION

4.5.1 General Findings

A majority of the teacher respondents agreed that music helps in the teaching and learning of physical fitness activities with no respondent disagreeing to this assertion. This is in line with the numerous investigations which have shown that listening to music whilst performing exercise can produce ergogenic gains (Anshel & Marisi, 1978; Szabo, Small & Leigh, 1999; Elliott, Carr & Savage, 2004; Elliott, Carr & Orme, 2005).

Music has many purposes for different individuals. Specifically, music may be used to extend physical activity. “Music may prolong physical performance of the organism because it inhibits of psychological feedback associated with physical exertion and fatigue”. Szabo, Small, and Leigh (1999) suggested that there are four ways that music might improve exercise performance which include: reduce the feeling of fatigue, increase arousal, increase relaxation, and promote motor coordination.

A majority of the teachers responded that they would prefer using Hiplife music, hiphop music and RNB music for their Physical Education classes with no respondent stating that they would prefer using cools in their physical education classes. This also suggested that music provides motivation, in which “musical style is an important factor”. Hence the choice of rhythmic music by the teachers for use in physical education activities. Past research has concluded that music during exercise has a positive effect on psychological aspects of an individual, such as motivation and external focus.

The type of music is also important as it has also been shown to induce dissociation; a state that has been shown to enhance physical performance; so it is possible that it is this that explains music's performance enhancing properties. Alternatively, listening to music may provoke alterations in arousal; considered as the intensity dimension of behaviour; thus it is conceivable that this reaction is responsible for the ergogenic gains associated with music listening.

With respect to perceived exertion, Noble and Robertson (1996) stated that the most consistent findings in their study suggested that perceived exertion will rate in lower values when participants exercised to music. The research data compiled from over the past two decades has found music particularly effective in distracting exercisers away from their perceived exertion during physical activity. A study by Nethery, Harmer, and Taaffe (1991) found that perceived exertion while exercising to music was lower than for other attentional distracters and for the no distraction condition. Furthermore, Thornby, Haas, and Axen, (1995) tested exercising participants in the presence of music, no music and noise. They discovered that participants reported a lower perceived exertion while exercising in the presence of music in comparison to the no music and noise conditions. These findings coupled with the popularity and substantial profits generated between the associations of music and training as iterated by O' Rourke (2011) would seem to indicate a correlation between the use of music and performance.

4.6 Discussion of Research Questions Findings

4.6.1 Research Question One - To what extent will rhythmic Ghanaian Hip life music attract senior high school students to participate in physical fitness activities?

The data analysis for research question one showed increased participation by students who were using Hiplife music in physical fitness activities as compared to the group which did not utilize music. With respect to the tests conducted, there was a significant statistical difference with the performance of students in the class who utilized music and those who did not. The group that used Hiplife music in their physical fitness activities lasted longer on the various tests than their counterparts that did not use music. This is in line with findings by Szabo, Small, and Leigh (1999) which suggested that music may prolong physical performance of the organism because it inhibits of psychological feedback associated with physical exertion and fatigue. They stated further that music has many purposes for different individuals. Specifically, music may be used to extend physical activity. They also suggested that there are four ways that music might improve exercise performance which included: reduction in the feeling of fatigue, increased arousal, increased relaxation, and promoted motor coordination. It is also suggested that music provides motivation, in which “musical style is an important factor”. Past research has concluded that music during exercise has a positive effect on psychological aspects of an individual, such as motivation and external focus. Music has also been shown to induce dissociation; a state that has been shown to enhance physical performance; so it is possible that it is this that explains music's performance enhancing properties. Alternatively, listening to music may provoke alterations in arousal; considered as the intensity dimension of behaviour; thus it is conceivable that this reaction is responsible the ergogenic gains associated with music listening whiles performing physical fitness

activities. Hence the improved performance by students using Hiplife music for their physical fitness activities.

4.6.2 Research Question Two - How does Ghanaian Hiplife music enhance the teaching and learning of physical fitness activities in Mabang Senior High School?

The data revealed that there was a great enhancement in the teaching and learning of physical fitness activities in Mabang Senior High School with the introduction of Hiplife music into the lessons. There was evidence of increased participation rates from students who used hiplife music as compared to those that did not use hiplife music. Research has shown the importance of regular exercise in maintaining wellness. Participation in fitness activities improved physiological and cognitive functioning, as well as emotional well-being (Hill, 2000). It is important to find ways to motivate and enhance exercise for students. If students think of exercise as appealing, enjoyable, and worthwhile, they are more likely to continue exercising and have a positive attitude regarding exercise/physical fitness activities. Students and teachers stated that the hiplife music used in the physical activity classes greatly enhanced the activities in several ways including taking participants mind off the pain, motivating participants, increasing participants endurance and improving participants concentration. Previous research has indicated that music has an effect on exercise performance. Music was used as a distracter when exercising, and often reduced the individuals' perception of how hard he or she is working (Loucks, 2000). Listening to music can take one's mind off their breathing, sweating, soreness, and fatigue. Thus, it can cause one to work harder because they do not realize how hard they are working.

The findings are in line with the study conducted by Loucks (2000) on college students which compared their exercise intensity during upbeat music, slow music, and with no music during a 30 minute exercise period on a treadmill (2000). The study found that there was a difference in rate of perceived exertion between the groups with music, both upbeat and slow, as compared to the group with no music. The latter group reported higher rate of perceived exertion.

4.6.3 Research Question Three - What is the impact of Hiplife Music on Students physical fitness activities in Mabang Senior High School?

The data analysis revealed that concerning the impact of hip life music on students' physical fitness activities in the Mabang Senior High School, students felt that the choice of Hip life music enhanced the delivery of the prescribed fitness activities. This was observed in students reporting promptly to class for the lessons, students were motivated to perform physical activities, students also participated for longer periods and it improved participants concentration levels. The teachers also stated that from their observations the use of hip life music reduced fatigue, enhanced students' performance, enhanced positive feelings and promoted relaxation and efficiency among the students.

For many students, exercising is not their favorite part of the day. Learning how a certain genre of music for instance hip life music can motivate them to achieve their goal and finish the exercise can be a very helpful tool in the teaching and learning of physical fitness activities.

Music can motivate students as well as bring enjoyment to students while exercising. Music can be a strong motivator for running and corresponds with movement intensity

and student interest (Hill, 2000). Popular music can heighten students' interest in an activity because they have a connection to the music. This was true for the study conducted where popular hip life music was used for the physical activity sessions and this heightened students interest and resulted in higher participation rates, increased performance and endurance. This can be said to be due to the students connection with the music which served as a form of motivation. This is similar to the findings of a study conducted by Ha and Wong (2002) which found that students find greater satisfaction in exercise and enjoyment in the exercise when music accompanies physical activity.

Physical education teachers routinely used music to motivate students during physical instruction. Music is sometimes used in physical education classes to keep students on task. A study by Ward and Dunnaway (1995) used music to increase the number of laps run by high school students in a physical education class. The researchers concluded that there was a substantial increase in the exercise patterns of students when music was played. The researcher in the current study can say that there was a significant increase students participation and longevity in physical fitness activities used when hip life music was used and confirms the findings by Ward and Dunnaway (1995).

4.6.4 Research Question four - How does instructors' knowledge in Ghanaian music and dance enable them to prescribe the required physical fitness activities for learners?

The data analysis revealed that the instructors' knowledge in Ghanaian music and dance was very helpful in enabling them to prescribe the required physical fitness activities for learners. The type of music involved was an important factor to the performance of an

exercise activity. This is similar to the finding by Gfeller (1988) who conducted an interview with 70 students at a university which consisted of open-ended questions referring to the physical requirements during exercise and the perception of music on performance. Gfeller (1988) concluded that more than 90% of the participants found that an important factor during aerobic activity is musical style used for the activity. A corpus of research work has focused on identifying factors contributing to the motivational qualities of music; that is, qualities which stimulate or inspire physical activity. Following more careful attention to music selection by researchers, a range of benefits have been shown in the exercise domain that include diversion of attentional focus, triggering or regulation of specific emotions, alteration or regulation of mood states, evocation of memories and other cognitive processes, control of arousal, induction of flow state, reduction of inhibitions and encouragement of rhythmic movement (Terry & Karageorghis, 2011).

These responses to music may, in turn, promote an ergogenic (work-enhancing) effect. This occurs when music improves exercise performance by either reducing perceptions of fatigue or increasing work capacity. Typically, this results in higher-than-expected levels of endurance, power, productivity or strength. Long-term benefits of music could not be investigated thoroughly but it is thought to include increased adherence to exercise programmes. This was especially pertinent to music use in medical rehabilitation settings in which exercise plays a role (e.g., physiotherapy, stroke, chronic pain, cardiac episodes; (Siedlecki & Good, 2006). Exploratory work has demonstrated the utility of music in these secondary care contexts where, owing to their condition, patients are in particular need of encouragement, affective enhancement, distraction and stimulation.

Primary factors that influenced responsiveness to music in exercise and sport settings are the musical qualities of rhythm, melody and harmony. Secondary factors included the extra-musical qualities of cultural impact (i.e., pervasiveness of the music within specific cultural groups or society generally) and associations that a piece of music may carry (e.g., Heather Small's Proud is closely associated with the British team at the 2000 Sydney Olympics).

Research findings suggest that the variables of knowledge in music play a role in determining musical preferences and responses within exercise settings. Hargreaves and North (2008) have identified situational context as a key influence on effects of music, whereby exercisers have pre-conditioned expectations about music that should be played in different contexts (e.g., upbeat, arousing music in gymnasias).

Music has been shown to act as an effective stimulant that can optimize arousal level and psychological states (Terry & Karageorghis, 2011). Effects of music during physical activity have also been investigated thoroughly. Use of asynchronous music (i.e., background music to which movements are not consciously synchronized) provides both psychological (distraction and enhancement of positive feelings) and ergogenic (performance-enhancing) benefits. Although the role of such music is typically motivational, it may also serve to promote relaxation and efficiency in long-duration, repetitive activities such as distance running (Terry & Karageorghis, 2011). Findings indicated that, among young adults, preferred music tempo generally falls within a narrow band (125-140 beats per minute) regardless of exercise intensity (Karageorghis et al., 2011). Other findings suggest that synchronous music may increase rhythmicity of

movement, resulting in an efficiency gain that is associated with lower relative oxygen uptake (Terry & Karageorghis, 2011).

In steady-state aerobic exercise, motivational music has also been shown to improve affective states by up to 15%. Similarly, music listening can be an effective dissociation strategy, reducing perceptions of effort and fatigue by up to 12%. However, this distraction effect is attenuated at higher exercise intensities ($> \sim 70\%$ VO₂ max) as internal feedback dominates due to the limited channel capacity of the respective afferent nervous system. Notably, the affective and attentional effects of music appear to interact, in that positive feelings can alter perception of intense effort. The effects of post-exercise music, to aid recovery from training, competition or injury – known as recuperative music – are now beginning to receive research attention (see Terry & Karageorghis, 2011).

Szabo, Small, and Leigh (1999) used a number of music groups to test the effects of music during a cycling exercise. The subjects were tested five times with five music conditions which included no music, slow music, fast music, slow to fast music, and fast to slow music. The same song, Beethoven's Symphony no. 7, was used throughout all five trials. The researchers recorded the song in a fast tempo and a slow tempo. They concluded that the fast music condition or the slow to fast music condition were preferred by the subjects. Copeland and Franks (1991) hypothesized "fast, loud music will increase the physiological and psychological responses to submaximal exercise". They used two types of music during a treadmill exercise, along with a control treatment of no music. One type was upbeat, high intensity, and fast tempo of 140 beats per minute. The other

type was slow, low intensity, and easy-listening with a tempo of 100 beats per minute. The slow music type resulted in a higher HR at maximum exercise and a longer time to exhaustion compared to the control treatment. This is reflective of the findings of the study where the teacher's knowledge and repertoire of Ghanaian hip life music was a determining factor in the type of music prescribed for each activity to make sure that students were affected by the music chosen in conducting the physical fitness activities.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The research was conducted, using endurance tests and questionnaires to find out the role of hip life music in the development of physical fitness among students of Mabang Senior High Technical School. A sample size of 40 students and 40 teachers were used. About ninety percent (90%) of teacher respondents indicated that they agreed that music helps in the teaching and learning of physical fitness activities. However, only 20% of the teachers responded that they used music to enhance their physical fitness classes even though they were aware of the role music plays in the teaching and learning of physical fitness activities. Fifty percent of the respondents stated that they would prefer using hip life music for their physical education classes. There was a statistically significant difference of the participation rates of students who were taught using music and those who were taught without music on the endurance tests. Those who were taught using music participated better and longer on the tests. The teachers' knowledge and repertoire of Ghanaian music also helped in the planning of the activities. Frequencies, percentages, tables, and figures were used to analyze the responses.

5.2 Conclusion

The purpose of the study was to explore the role of hip life music in the development of physical fitness among students of the Mabang Senior High Technical School. The descriptive statistical analysis revealed that indeed music and specifically hip life music can enhance or promote the development of physical fitness among students. Even though teachers were aware of the importance or benefits of incorporating music into their physical fitness activities only a few of them actually used them in their classes. The findings of the study also revealed that students actually enjoyed physical fitness activities and participated better in physical education classes that used hip life music in the delivery of lessons. The study revealed that the use of hip life music enhanced the teaching and learning of physical fitness activities. This in turn promoted the development of physical fitness among the students of Mabang Senior High Technical School.

This research work is a contribution to knowledge on the role of hip life music in the development of physical fitness. This study has documented a process of ascertaining whether there are gains or otherwise in the use of hip life music in physical education classes to promote the teaching and learning of physical fitness. This is indeed necessary and consequently in Ghana where for many students, exercising is not their favorite part of the day. Learning how a certain genre of music for instance hip life music can motivate them to achieve their goal and finish the exercise can be a very helpful tool in the teaching and learning of physical fitness activities which results in healthy students.

Finally, the researcher anticipates that this thesis has provided a useful framework and built a foundation for research across different approaches to solving the menace of students' inability to exercise regularly.

As previous and current studies have established, physical activity enjoyment is a positive incentive for consistent engagement in physical activity, which will ultimately affect the health and quality of life of Americans. Results of this study have further indicated that preferred music has a positive effect on perceived physical activity enjoyment.

Music has been shown to act as an effective stimulant that can optimize arousal level and psychological states (Terry & Karageorghis, 2011). Effects of music during physical activity have also been investigated thoroughly. Results of the study indicated the obvious need for physical education teachers to introduce and use music especially hip life music into their physical fitness classes. Music can motivate students as well as bring enjoyment to students while exercising. Music can be a strong motivator for physical fitness activities like running and it corresponds with movement intensity and student interest (Hill, 2000). Popular music can heighten students' interest in an activity because they have a connection to the music. Studies have found that students find greater satisfaction in exercise and enjoyment in exercise increases when music accompanies physical activity.

Thus the use of hip life music in the development of physical fitness among students can go a long way to ensure that students participate better, perform better, and actually enjoy physical education classes thus promoting physical fitness among students. This will go a long way to ensure that students are healthier. This will go a long way to improve the quality of health of students and ensure that they give off their best in their various roles in the nation at large.

5.3 Suggestion(s) for Further Research

It is also believed that this study has provided an insight into the role of hiplife music in the development of physical fitness among students of Mabang Senior High Technical School. This study was limited to students of Mabang senior high technical school and Physical education teachers in the Ahafo Ano North District. However, there could be other factors that need to be identified or evaluated. For instance specific physical education activities and the specific types of music that go with them. Hence, it is felt that further research needs to be carried out in the area and expanded to include other municipalities in other regions on the role of hiplife music in the development of physical fitness among students.

5.4 Recommendations

1. There is need to create awareness of the usage of Ghanaian Hiplife music in particular as an activity for teaching physical fitness practical lessons.
2. There is also the need to improve teacher's pedagogy of teaching physical fitness parameters
4. Improve literature on the use of music in physical fitness parameters in Ghana. There is the need to replicate this study in other schools in Ghana.
5. In addition, workshops should be organized for physical education teachers on how to incorporate music into the teaching of physical fitness activities.
6. Also the necessary equipment should be provided for teachers who are willing to incorporate music into their physical education classes.

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