UNIVERSITY OF EDUCATION, WINNEBA

ASSESSING THE TEACHING OF SELECTED FUNDAMENTAL MOTOR SKILLS IN BASIC SCHOOLS IN THE WA MUNICIPALITY

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A thesis in the Department of Health Physical Education Recreation and Sports, Faculty of Science Education, submitted to the School of Graduate Studies in partial fulfilment of the requirements for the award of the degree of Master of Philosophy (Health Physical Education Recreation and Sports) in the University of Education, Winneba

MAY, 2022

DECLARATION

Student's Declaration

I, Issah Mohammed, declare that this thesis, with exception of quotations and references contained in published works which have all been identified and acknowledged. I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this University or elsewhere.

Signature: ……..…….……

Date: ……..…….

Supervisor's Declaration

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

Dr. Patrick Akuffo (Supervisor)

Signature: ……..…….……

Date: ……..…….

DEDICATION

This study is dedicated to my Dear parents Mr. and Mrs. Issah Issahaque and Hajia Kubra Issah, my children Wononnor, Sungnuma and Junnor.

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ABSTRACT

The study sought to assess the teaching of some selected Fundamental Motor Skills (kicking, catching, hopping and running) in basic schools in the Wa Municipality. The descriptive survey design was adopted for the study. The strategy was a quantitative research paradigm. Ten selected schools in the municipality with a sample population of 109 physical education teachers were purposively sampled for the study. The sample size consists of 80 male and 29 female physical education teachers. The sampling techniques used were convenience and purposive. Survey questionnaires and scheduled observation were the instruments used to gather data for the study. Descriptive and inferential statistics were used to analyse the data. Descriptive statistics was used to analyze the demographics characteristics of the classroom physical education teachers**,** nature of Fundamental Motor Skills taught, methods and Sequences adopted by classroom P.E. teachers in the teaching of Fundamental Motor Skills, challenges encountered by classroom P.E. teachers in the teaching of Fundamental Motor Skills and best practices that can be adopted in teaching Fundamental Motor Skills in the basic schools in the Wa Municipality. An effective inferential statistical tool, independent samples t-test was used to examine hypothetically whether there is no gender-wise significant difference in classroom Physical Education teachers' methods of teaching Fundamental Motor Skills in the Wa Municipality. The study revealed that the nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality were the teaching of manipulative skills like throwing, catching, kicking, and volleying and teaching of locomotor skills like walking, running, hopping, galloping, jumping and sliding in practical P. E. Lessons.The study discovered that the method adopted by physical education teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality was demonstration technique with strict adherent to their sequences in which the components of Skills normally appear in pupil's development. The study revealed also that poor, lack or inadequate facilities was the challenge that physical education teachers faced in the teaching of Fundamental Motor Skills in basic schools in the Municipality. it is again, determined whether there is gender-wise significant difference in Physical education teachers, which indicated that male physical education teachers had strong adaptation of the methods for teaching of Fundamental Motor Skills as compared to female physical education teachers. The study recommended that all basic schools should be provided with the required teaching aids like P.E. Textbooks and field equipment. And, a standardized physical education fields should be constructed in all basic schools to enhance the teaching of fundamental motor skills.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Undoubtedly, physical education is one of the foundations for the development of basic motor skills in basic school pupils. Physical education subjects are as unique as elementary school level physical education. Physical education is a comprehensive concept that includes fitness, skills, exercise, dance, recreation, health, play, sports, and their associated values and knowledge. This is primarily due to the need for individuals to grow physically, intellectually, socially and morally. It is important to note the many physicals, mental, social, moral, emotional, and economic benefits of individual, group, community, and national participation resulting from physical education. The role of physical education in the basic school curriculum is to support children with the skills and activities necessary to incorporate regular physical activity into their lives. Therefore, pupils can achieve physical and personal benefits by participating in well-taught physical education programs. Again, physical education classes help pupils develop physical activity habits so that they can grow into healthy and active adults. The ardent desire of most physical educationist is to meet the current societal demands, of improving upon children's physical, psychological, affective and cognitive competencies, pose a great challenge.

The teaching of fundamental motor skills such as running, leaping, walking, and stepping is an important aspect of a physical education program. These skills serve as the foundation for the development of more specific sports skills learnt later in life, as well as the learning of more complex community-wide fundamental motor skills (Cattuzzo et al., 2016. Fundamental motor skills play a crucial part in individuals' lifelong development from childhood onwards in all psychomotor, affective and

cognitive domains of development (Hürmeriç et al., 2017). It's also worth noting that pupils who have mastered fundamental motor skills believe themselves to be competent and, as a result, have a favorable attitude toward physical education (Department of Education, 1996). In this context, the term “fundamental motor skills” generally expresses skills in which the result of both movement and action is stressed (Newell, 1991). According to their features, basic fundamental motor skills are divided into three divisions. Balance, locomotory skills, and object control skills are among them (Gallahue, 2000). Basic motor skills let kids regulate their bodies, develop more complicated skills, and perform movement patterns in sports and other fun activities (Payne & Isaacs, 1991). Identification and, as a result, development of children's fundamental motor skills in the first stage of adolescence is considered an essential subject area in physical education (Duman, 2019). The prime indicators of the problem are incorrect execution of skills by pupils and low participation of children in physical activities in their adulthood. It is important to note that pupils in these basic schools especially the lower primary mostly engage in some fundamental motor skills such as running, leaping, throwing, catching, kicking, stepping, etc. The learning of these fundamental motor skills usually helps these children in skill related movement patterns such as balancing, agility, co-ordination, speed, power etc. These skills acquired will also usher them into sports later.

1.2 Statement of the Problem

Although the development of Fundamental Motor Skills is so crucial for the overall development of the child, not much studies have been done in this area to guide education policy formation (Gabbard, 2004). Fundamental Motor Skills are the foundational skills that must be learnt and developed in order to successfully execute sporting and physical activities (Gallahue & Ozmun, 2006). The development of

broader and more sports-specific skills will be hampered if these basic skills are not mastered. (Gallahue & Ozmun, 2006). As a result, if children have not mastered the skills necessary to participate in physical exercise successfully, they are more likely to drop out and not maintain a healthy level of physical activity, which will have an impact on their weight status. According to research, Fundamental Motor Skills is not a natural process, and children will need to be taught and exercised in order to acquire these motor development (Haywood & Getchell, 2009). Despite the fact that physical education is taught in Basic Schools there is still a gap especially in getting athletes to perform in the various field events such as high jump, long jump, discus, shot put etc., in the Wa Municipality. The inability of pupils to acquire the requisite motor skills to enable them perform in field of athletics and games have become a major issue in the Wa Municipality. The uncoordinated nature of execution of these athletics activities in the Wa Municipality leaves one to wonder what is responsible for this challenge. There has been a general assumption that children gain Fundamental Motor Skills as part of their natural development. However, according to Gallahue (2000), Fundamental Motor Skills should be taught in a developmentally appropriate way for children to gain high level of proficiency in them. Looking at the acquisition of Fundamental Motor Skills, one is tempted to believe that all children have the same level of Fundamental Motor Skills at particular age. The goal of this study was to measure the development of Fundamental Motor Skills in order to better understand how they relate to participation in physical activities (Barnett et al., 2008). The Teaching Philosophy of physical education in Ghana is "teaching and learning of physical education is based on constructivist and fitness models" (NaCCA, 2019). Fundamental Motor Skills through constructivist and fitness models provide one of the building blocks that enable a child to progress to developing sport-specific skills.

We cannot expect children to be proficient in producing sport-specific movements before they have mastered Fundamental Motor Skills. Fundamental Movement Skills are an essential part of physical literacy; however, they are not all of it (Pienaar et al., 2016). While research has sought to investigate the relationship between Fundamental Motor Skills, Physical activities, and weight status (Bryant, 2015), research again suggests that children who are competent in FMS are more likely to enjoy sports and activities and to develop a lifelong commitment to physical activity (Mckeen & Pearson, 2007). Research also suggests that children who do not master FMS are more likely to drop out of physical activity in later life (Capio et al., 2015) and gaps and inconsistencies in the literature need to be addressed. These include the nature of Fundamental Motor Skills taught in the basic schools, the methods adopted by teachers in the teaching of Fundamental motor Skills in basic schools, the challenges encountered by teachers in the teaching of Fundamental Motor Skills in basic schools and the best practices that can be adopted in teaching Fundamental Motor Skills. These shortfalls may exist in Wa municipality basic schools, physical education classrooms or practical fields, hence the need for this study to assess the teaching of fundamental motor skills in basic schools in the Wa Municipality.

1.3 Purpose of the Study

The purpose of the study was to assess the teaching of some selected Fundamental Motor Skills (kicking, catching, hopping and running) in basic schools in the Wa Municipality.

1.4 Objectives of the Study

Specifically, the study sought to:

1. Identify the nature of some selected Fundamental Motor Skills taught in basic schools in the Wa Municipality.

2. Explore some methods adopted by teachers in the teaching of selected Fundamental Motor Skills in basic schools in the Wa Municipality.
3. Examine the challenges encountered by teachers in the teaching of the selected Fundamental Motor Skills in basic schools in the Wa Municipality.
4. Suggest best practices of teaching the selected Fundamental Motor Skills in basic schools in the Wa Municipality.

1.5 Research Questions

The study was guided by the following research questions:

1. What is the nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality?
2. What are the methods adopted by teachers in the teaching of Fundamental motor Skills in basic schools in the Wa Municipality?
3. What are the challenges encountered by teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality?
4. What best practices can be adopted in teaching Fundamental Motor Skills in the Wa Municipality?

1.6 Hypothesis

Based on the research questions, the following hypothesis at a significant level of 0.05 was formulated.

H_{O1}: There is no gender-wise significant difference in Physical education teachers' methods of teaching Fundamental Motor Skills in the Wa Municipality.

1.7 Significance of the Study

The study seeks to provide ideas about competencies relevant to the teaching of motor skills in Basic Schools in the Wa Municipality. The study exposed the need and importance of Fundamental motor Skills to all teachers in the basic schools and provided suggestions to help improve the teaching of Fundamental Motor skills specifically in the Wa Municipality. It highlighted best practices that can be adopted in the teaching of Fundamental Motor Skills in the Municipality.

Again, other institutions and organizations working with these groups of children may find this study useful in strategizing and finding solutions to the teaching of Fundamental Motor Skills in their institutions.

1.8 Delimitation

The scope of this thesis was broad as it envisaged to assess the teaching of some selected Fundamental Motor Skills (kicking, catching, hopping and running) in basic schools in the Wa Municipality. Fundamental motor skills, such as kicking, catching, hopping and running were selected because they serve as the foundation for acquiring more complex sport and movement skills widespread in the community. Pupils are less likely to master associated sport and movement skills if they lack fundamental motor skill proficiency. Nevertheless, to draw an exact outcome and for critical study, the study of the teaching of fundamental motor skills was delimited to the Wa Municipality. The study was further narrowed down to ten (10) schools in the Wa Municipality (T. I Amass Block 'A' and 'B', NJA Demonstration, Jujeidayiri Block 'A' and 'B', Wa Model, Limanyiri, Catholic, Tendaba Schools and Fongo). Again, there were issues with sample and selection, insufficient sample size, population traits

or specific participants for statistical significance and limited financial resources and/or funding constraints.

1.9 Definition of Terms and Acronyms

FMS: Fundamental Motor Skills

P. E: Physical Education

UNESCO: United Nations Educational Scientific and Cultural organization

Effective Teaching: Refers to the teaching strategies that give learners' more time to practice the skill

NaCCA: National Council for Curriculum and Assessment

Specialist: A physical educationist who majored in physical education

Generalist teacher: They are trained teacher who teach all subjects in the primary Schools

Running: The transfer of weight from one foot to the other with momentary loss of contact of both feet.

Speed: It is the ability to perform a particular movement very rapidly

Balance: The ability to maintain equilibrium when moving or stationary

Co-ordination: It deals with the ability to integrate the senses visual, auditory and proprioceptive (knowing the position of one's body in spaces with motor function to produce smooth, accurate and skilled movement.

Agility: It is the ability to change or alter quickly and accurately the direction of body movement during an activity.

Power : It is to generate great amount of force against a certain resistance in short period of time

Strength: It is the maximum force that can be developed in a muscle or group of muscles during a single maximal contraction.

Re-action time: The length of time required to act in a stimulus.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The purpose of the study was to assess some selected Fundamental Motor Skills (kicking, catching, running and hopping) of basic school pupils in the Wa Municipality. Related literature was however reviewed under the following thematic areas;

- Theoretical frame work
- Conceptual frame work
- The Nature of Fundamental Motor Skills
- The methods of teaching Fundamental Motor Skills
- Attitude of teachers towards the teaching of physical education
- Fundamental Motor Skills taught in schools in the Wa Municipality
- The importance of fundamental motor skills
- Challenges of learning fundamental motor skills

2.1 Theoretical Frame Work

This chapter explores what is known on the subject of Fundamental Motor Skills and thus locates the study within the larger framework of scholarly study. It also attempts to explain the theoretical framework of the study. The major theories that frame this study are the developmental stage theory and the dynamical systems, Dual Coding and Visual Literacy theories. The basic characteristics of the level and importance of Fundamental Motor Skills are also discussed:

2.1.1 Developmental Stage Theory

Developmental stage theory argues that completing a given task within a given time period is a prerequisite for advancing to a higher level. Children participate in

physical activity by exercising and performing basic motor skills. Learning basic movement patterns increases the likelihood that children will learn advanced skills (Thelen & Ulrich, 2000). This is called hierarchical integration and means that the later stage of the skill or action emerges from the previous stage. In other words, the fundamental motor skills (FMS) learned at an early age are the elements for a child to participate in motor patterns, play and motor skills (Clark, 2000).

Stage theory is based on the idea that elements in a system can move patterns of different stages over time, explaining these stages in terms of their characteristic characteristics. Is based. In fact, the stages of cognitive development are always continuous, the later stages integrate the outcomes of the earlier stages, each characterized by a particular type of structure of the mental process that is unique to it. The timing of the occurrence may vary slightly depending on the environmental conditions.

"Stage theory" can be applied beyond psychology to describe phenomena more generally, where multiple phases lead to an outcome. The term 'stage theory' can thus be applied to various scientific, sociological and business disciplines. In these contexts, stages may not be as defined, and it is possible for individual within the multi-stage process to revert to earlier stages and skip entirely.

2.1.2 Dynamical Systems Theory

The primary theory in the explanation of motor development is Dynamical Systems Theory (Newell & Vaillancourt, 2001). Dynamical Systems Theory is a complex theory explaining the basis of new behavior patterns and the role of interactions of many subsystems to engender completely new behavior from old behaviors (Thelen & Ulrich, 2000). Based upon Dynamical Systems Theory explains that a child is seen as

a self-organizing system and the complex interactions of many subsystems shape this self-organizing system (Gallahue & Ozmun, 2006). Dynamical Systems Theory identifies many concepts in order to explain the motor development of children. These include behavioral attractors, phase shift, and control parameters.

Dynamical Systems Theory is a framework that seeks to explain changes that occur during motor skills performance and the underlying factors that influence the skills (Thelen & Ulrich, 2000). Movement, according to this theory, is considered as deriving from a complex and multifaceted interaction among the individual, the task, and the environment (Newell, 1991). Fundamental Motor development is influenced by the interaction of cooperating subsystems (Thelen & Ulrich, 2000).

Dynamical Systems Theory considers the individual as a system comprising of multiple interaction subsystems such as the individuals' experience, abilities, strength, and motivation, resulting in a product that is the result of the interaction of these subsystems (Thelen & Ulrich, 2000). A change in one subsystem could influence the outcome of overall performance. Factors such as difficulty of task, the size and weight of equipment, the nature of playing area, and the individuals' skill level are examples of subsystems that influence performance (Newell, 1991). From the dynamical systems movements, movement patterns do not develop in a series of highly predictable movements of levels, instead patterns may change over time with some probabilities (Clark, 2000).

Human movement involves many potential movement patterns, degree of freedom, and these variables within the system are free to vary as movement occurs. Specific patterns are involved in developing specific motor skills. Degrees of freedom within a task subsystem must be reduced to offer stability to the movement. The stable

patterns of behavior that are observed across multiple trials and task conditions are called behavioural attractors (Langendorfer & Roberton, 2002). Behavioural attractors are common patterns of movement occurring under specific conditions (Clark, 2000). Attractor pathways are the common patterns that change over time (Hamilton & Tate, 2002).

Attractor states are not always stable and they may change with time due to changing relationships between subsystems or changes in constraints that also change with time (Hamilton & Tate, 2002). Dynamical Systems Theory suggests that cooperating subsystems are driven to self-organize and reduce the degrees of freedom that result in a more stable movement. When the individual is driven to a new attractor state or movement pattern, a control parameter initiates a perturbation that prompts the individual to move from an old inefficient movement pattern to a more stable and efficient movement form (Thelen & Ulrich, 2000). Control parameters are physical variables within systems or subsystems. As these variables change with the system, the behavior of the system also changes. Examples are motivation, experience gained from practice and strength. Dynamical systems theories refer to this process as a phase shift.

Phase shifts are the result of gradual or sudden changes in variables or subsystem that make the body move from one pattern to another. During the process of phase shifts, a lot of variability is observed in the individual's performance, but as the movement is stabilized into new patterns, performance changes (Garsia, 2002). Sometimes a phase shift will bring about more efficient patterns of movement and in order situations phase shifts result in a regression in the movement pattern (Garsia, 2002). For example, a child learning to catch may be scooping to catch balls tossed to him or her.

However, as the learner is continuously prompted to get the hand out in front, keep eyes on ball and catch with the hands; within a few trials the child starts to catch with the hands. The control parameter in this instance is the act of the hand and tracking of the ball with the eyes. The child is now catching with the hands and this becomes the new attractor state.

Control parameters are believed to be primarily responsible for the changes in movement performance. These could be variables, that when altered, allows the system to re-organize itself in a different way (Langendorfer & Roberton, 2002). Control parameters do not necessarily have to be task related by could be bio-mechanical or environmental factors. Parameters can be identified, by determining the essential variables of a skill or task (Southard, 2002). Some examples are size and weight of equipment, degree of difficulty of task, and the environment in which the task will be performed. These may cause the individual to reorganize movement patterns when scaled to a critical value a stable movement pattern.

2.7.3 Dual Coding Theory and Visual Literacy

Cognition by dual coding theory involves the activity of two different subsystems: a language-related language system and a non-language (image) system related to non-linguistic objects and events (Paivio, 1971). According to Paivio (1971), visual and linguistic information is encoded differently as analog or symbolic code. Similar codes represent what people observe around them, and symbol codes are a type of expressed knowledge (symbols) designed to be arbitrarily emphasized. This bidirectional information is better encoded, understood, accessed, and processed. The impact on student memory is additive, especially if the visual and linguistic codes are functionally independent (Moyer-Packenham, 2007). Dual coding theory also

provides a theoretical background for understanding non-cognitive areas such as the acquisition and maintenance of and motor skills. Conferring to Paivio (1971), "Images, linguistic expressions, relevance, and reference processes relate to many experimental studies of motor skills and specific models on various pedagogical topics. Make it happen ... "

Several research projects practice related languages and visual image codes, associative and reference processes while these tasks are better than controls, and students are indicated to practice associative and reference processes (Feltz & Landers, 1983). More routes can get more information after learners used to remember information. However, according to Mayer (2003), learners pay attention to typical words and images, and learning useful when organizing them mentally with languages and visual representations. With Preliminary knowledge, many students may be able to respond to visual materials, but most of the must teach the logical configuration of the and "Visual Text" of grammar. The Moyer-Packenham (2007) facilitates visual information about synchronization processing instead of sequential processing and makes it easy to get information from visual processing code. Avgerinou and Ericson (1997) need to use it throughout development because our vision is dominant and most important. Visual education is not necessarily new education (the first international visual education meeting in 1970 of Chicago) is the best as a new educational education (Braun & Kivshar, 2004). Bamford (2003) is a variety of fields, art history, aesthetics, linguistics, philosophy, psychology, perceptual stories, sociology, psychology, perceptual logic, sociology, cultural research, and media from media. According to Bamford (2003), it is limited to specific areas. you cannot Research, educational design, semiotics, communication science, educational technology. As a result, each of the researchers approached the

term from their own scientific discipline, causing controversy among researchers regarding the definition. As a term it was first used by Debes (1969) who suggested the following definition: "Visual Literacy refers to a group of vision-competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences.

The development of these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects, symbols, natural or man-made, that he encounters in his environment. Through the creative use of these competencies, he is able to communicate with others. Through the appreciative use of these competencies, he is able to comprehend and enjoy the masterworks of visual communication." However, according to the International Visual Literacy Association (IVLA, 2011), visual literacy refers to the following characteristics: i. A set of skills that a person can acquire by seeing while also receiving and integrating other sensory experiences. ii. The taught ability to decipher visual symbols (pictures) and to generate messages with them. iii. The ability to convert visual images into verbal discourse and the other way around. iv. The ability to locate and evaluate visual data in visual media. All of the aforementioned abilities necessitate highly developed perceptual and spatial ability. Perception encompasses both the seeing and interpreting processes, whereas spatial ability refers to how a person sees and moves in space (Willmot, 1999). As a result, the development of the ability to encode and decode visual information appears to greatly facilitate the performance of any type of movement – whether simple or sophisticated – that requires the activation of both perceptional and spatial skills. Many teachers who want to employ symbols as characters or coding elements use a technique that emphasizes symbols as a means of transmitting visual information.

They manage to cultivate their students' capability to respond to descriptions through symbolic representations by cultivating their ability to distinguish and categorize. Scholars in the United Kingdom have long advocated for more attention to be paid to the impact of 'visual literacy' and the reading of meaning in symbol systems other than alphabetic script (Heath, 2000). Teachers can only fulfill their educational goals, which in this case are the development of basic motor skills, by facilitating the best possible learning experience and utilizing numerous communication tools.

2.2 Conceptual Framework

Figure 2.1 illustrates the conceptual framework that serve as a roadmap for achieving the main objective of the study in assessing the teaching of some selected Fundamental Motor Skills (kicking, catching, hopping and running) in basic schools in the Wa Municipality.

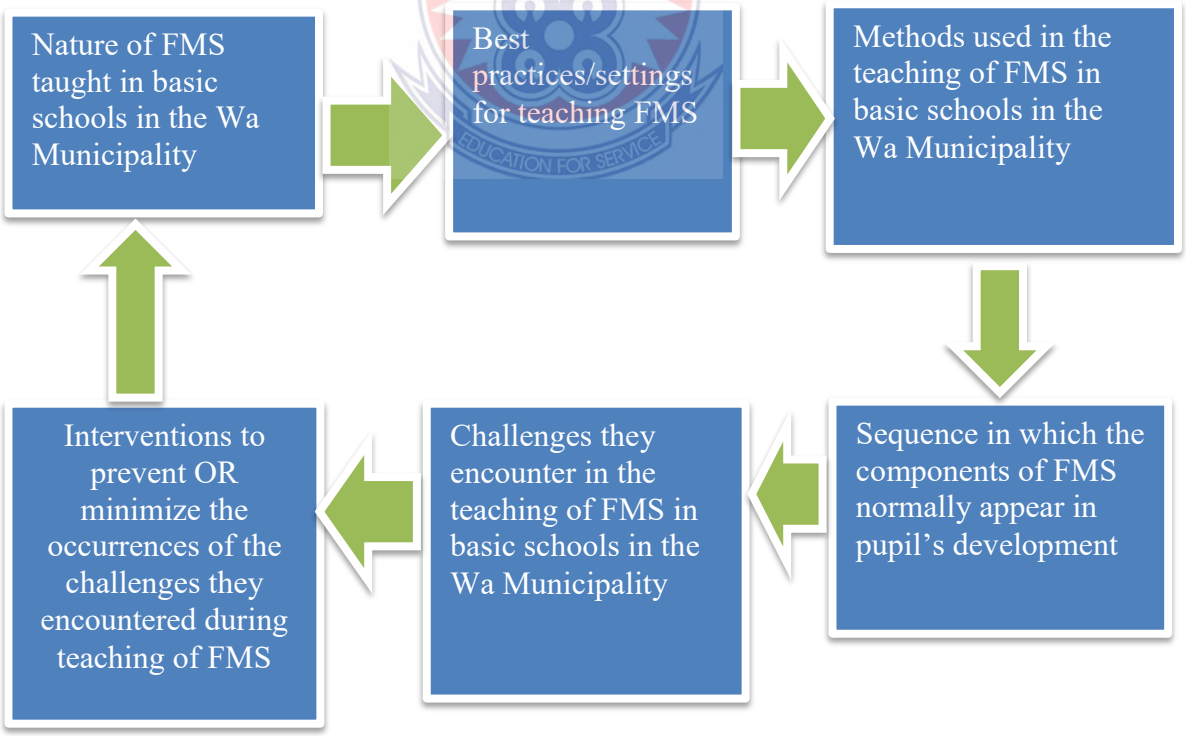

Figure 2.1: Conceptual framework on assessing the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality

Source: Authors Construct, 2022

The conceptual framework which served as a roadmap for achieving the main objective of the study was centered on the objectives of the study. The framework establishes that, there is a link between Fundamental Motor Skills and its teaching assessment in a cyclical flow, the Nature of how Fundamental Motor Skills is taught in basic schools in the study area could be better understood by providing best practices/settings for teaching Fundamental Motor Skills thereby using Fundamental Motor Skills methodologies and Sequence in which the components of Fundamental Motor Skills should appear normally in pupil's development was encountered by Fundamental Motor Skills teaching challenges and therefore need new interventions to prevent or minimize the occurrences of the challenges they encountered during teaching of FMS that identify the nature of some selected Fundamental Motor Skills taught in basic schools in the Wa Municipality.

It's worth noting that, in addition to helping students develop physical, psychomotor, and emotional skills, physical education also attempts to improve their cognitive abilities. The capacity to collect and utilise knowledge in order to adapt to environmental demands is referred to as cognition. It can also be defined as the process of organizing information, storing it in memory, and making it available for recall and application in a variety of settings (Gallahue & Cleland, 2003). Cale and Almond (1992), Centers for Disease Control and Prevention in public health (1999), and Welk (2000) all agreed that children and adults' physical activity levels are still quite low in many nations around the world. Children will be able to effectively participate in movement activities in a variety of situations if they master the concepts that are associated to success in skill learning (Gallahue & Cleland, 2003).

It's important to emphasize that the conceptual framework that underpins this research is fundamental movement patterns in newborns and early children's cognitive development. This concept was chosen as a framework because it has a broad reach and allows for the integration of many ideas from various relevant teaching and learning theories from developmental, social, behavioral, psycho-educational, and biophysical perspectives.

Piaget (1999) was one of the first ideas to emphasize the importance of movement in newborn and young child cognitive development, as well as the interdependence of motor development and intellectual ability (Payne & Isaacs, 1991). Fitts and Posner (1967) wrote that cognition should be regarded a major part of teaching and acquiring fundamental motor skills in physical education.

Furthermore, fundamental motor abilities are those in which both the movement and the result of an action are typically stressed. The domain of motor skill acquisition also falls under theory, particularly in terms of the function that change agents such as the teacher (trained or untrained), instructor, or coach may have in facilitating or teaching skills to learners. Training is a term used in engineering psychology and human factors research to describe this type of research.

According to Buschner et al. (1999) acquiring Fundamental Motor Skills is a sequential process in which we are taught three (3) unique movement patterns or stages as we learn. These are the following:

- Identification and development of component pieces of skills during the cognitive phase. This demonstrates how mental images of the skill are formed.

- The association step entails connecting the component pieces in order to achieve a seamless motion. This entails practicing the skill and receiving feedback in order to master it.
- The automation phase involves honing the learned abilities to the point where they are automatic. While practicing the technique, however, no conscious thought or focus is required. This is a stage that not every performer reaches. This, on the other hand, confirms that skill acquisition begins with cognition before practice, as suggested by (Piaget, 1999).

2.3 Motor skill

Schmidt and Wrisberg (2008) describe motor skill as "a skill in which the quality of the movement that the performer creates is the fundamental determinant of success." It is a learned, voluntary movement activity or task of one or more bodily parts that has a specified goal or target (Gallahue & Cleland, 2003). In order to attain a purpose, motor skills are required in specific physical body and limb movements (Jaakkola, 2010). The phrase "motor skill" can be defined in at least two ways in the context of the notion. When it should be discernible alongside numerous dimensions, or on the basis of a range of key features, it can be considered as a task (i.e., throwing a ball, or playing card). Furthermore, motor skill can be defined as the level of proficiency with which a person performs a movement (Schmidt & Wrisberg, 2008). Athletes' motor skills can be seen in a variety of performances, in Physical Education material, and in anything related to leisure time Physical activity. The most important characteristic of motor competence is that it is a learned ability (Jaakkola, 2010).

2.3.1 Motor Skill Development

According to Gallahue and Ozmun (1998), the development of basic motor abilities is critical during childhood because it allows children to explore the world. Movement

experiences, according to Gallahue and Donnelly (2007), improve the capacity of children aged four to ten to perform simple motor skills. Learning basic motor skills improves the development of basic motor abilities such as coordination, speed, and balance, which might be difficult to compensate for later in adulthood. It has been demonstrated that the development of basic locomotor skills, which are the building blocks of more particular skills, facilitates the learning of dance and sport skills (Deli et al., 2006). According to (Gallahue & Donnelly, 2003) model of motor development, walking, running, hoping, galloping, skipping, and sliding are some of the most important locomotor skills. Children's motor engagement is aided by the development of such a knowledge base, which reduces performance errors both in and out of the classroom (Derri & Pachta, 2007). The development of such skills can be aided by effective teaching and support from the physical education (Graham et al., 2003). Effective physical education teachers, on the other hand, are those who cannot only grasp a wide range of teaching styles and methodologies, but also manipulate them to improve students' learning across the curriculum (Garn & Byra, 2002).

According to Ulrich and Ulrich (1985), kids will improve their performance more than those who simply engage in free play activities if they are taught developmentally appropriate movement programs and taught using effective teaching methods. The morphological method for analyzing dance movement described below can be successfully used to the teaching of basic motor abilities. It will integrate the teaching of basic structural movement units and compositions with their development in time and space as a teaching approach. Keeping in mind that when movement skills or patterns are taught in conjunction with appropriate rhythmic patterns, learners' motor abilities appear to increase more (Deli et al., 2006), because it exploits the

characteristics of rhythm and timing, it is predicted that the morphological teaching approach will be beneficial as well.

2.4 Fundamental Motor Skills

Common motor activity with certain observable patterns is referred to as fundamental motor skills. The majority of sports and movement skills are sophisticated versions of basic motor skills. Softball and cricket throwing, as well as the baseball pitch, javelin throw, tennis serve, and netball shoulder pass, are all examples of sophisticated overhand throws. In the patterns utilized in these sport-specific motor skills, the existence of all or part of the overhand throw can be recognized. Other core motor skills and specific sport skills and movements have similar correlations (Figure 2.2).

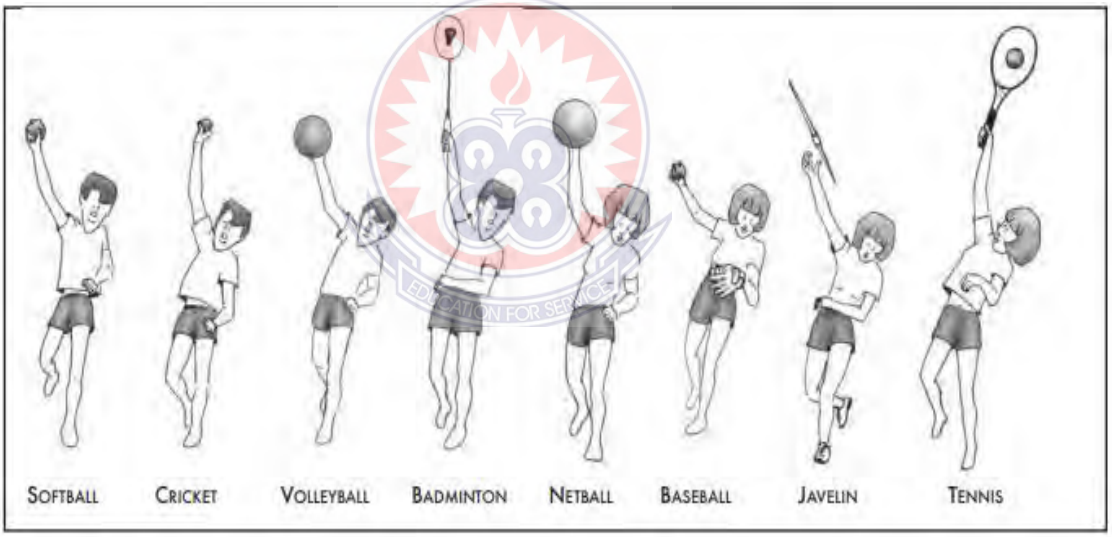

Figure 2.2: Relationship between Fundamental Motor Skills and Specific Sports Skill (Overarm Throw)
(Department of Education, 1996)

Children's motor skills usually develop in a sequential order. Fundamental motor skills are one level of the motor skill acquisition continuum. Fundamental motor skill development builds on previously taught movements and prepares children for the acquisition of more advanced skills (Department of Education, 1996).

2.4.1 Sequence of Instruction

Motor skills, physical fitness, and knowledge development must begin in the early years of primary school. Students are physically and intellectually capable of benefiting from physical education instruction during these years, and they are highly motivated and enthusiastic about learning. Physical education, on the other hand, must provide age-appropriate instruction throughout a student's school career. Students must be given the opportunity to learn the essential motor skills on which later learning is dependent during their early primary school years (P–3). Children frequently demonstrate these fundamental motor skills while playing. Overhand throws, catches, punts, kicks, forehand strikes, two-handed side-arm strikes, ball bounces, runs, leaps, dodges, and vertical jumps are among them. Table 2.1 shows when these skills should be presented to youngsters and when they should master them.

Table 2.1: Suggested Levels for the Introduction and Mastery of Essential Fundamental Motor Skills

Fundamental Motor Skill	Prep	Year 1	Year 2	Year 3	Year 4	Year 5
Catch	Introduced		Mastered			
Kick	Introduced			Mastered		
Run	Introduced		Mastered			
Vertical Jump	Introduced		Mastered			
Overhand Throw		Introduced			Mastered	
Ball Bounce		Introduced		Mastered		
Leap		Introduced		Mastered		
Dodge		Introduced		Mastered		
Punt			Introduced		Mastered	
Forehand Strike			Introduced			Mastered
Two-hand Side-arm Strike			Introduced			Mastered

If children are to develop higher-level skills to their full potential, they must master these skills. Children who lack these skills are less able and often unwilling to

persevere with the difficult task of learning more complex motor skills, and they will avoid activities that expose them to "public failure." Eventually, such children face a skill proficiency barrier in sports and reject physical activity as a part of their lifestyle (Figure 2.3).

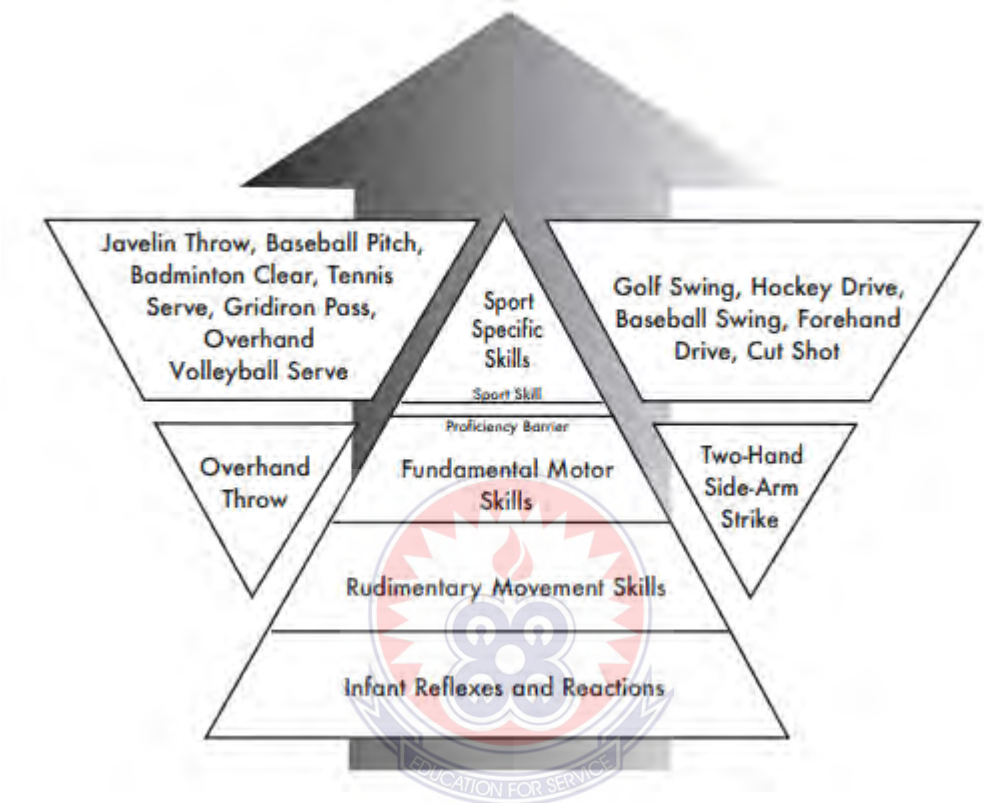

Figure 2.3: Effects of Fundamental Motor Skills Instruction on the Performance of Sport Specific Skills
Source: (Department of Education, 1996)

Transitional, or lead-up, motor skills and activities should be taught to students in the later primary years (4–6). Basketball dribble, modified netball, paddle tennis, and modified baseball are examples of skills and activities in this group. At this level, skills and activities can be combined or changed in a variety of ways, practiced with or without equipment, and taught through individual practice or game structures. During their secondary years, students should receive physical education that allows and encourages them to expand on previously learned motor skills such as throwing,

catching, and batting into more complex and specific sport and leisure activities (Department of Education, 1996).

2.5 The Nature of Fundamental Motor Skills

Children successfully progress through the developing process because to Fundamental Motor Skills' nature. It is crucial for basic education programs to evaluate the fundamental motor skills students possess. Children must master these abilities before going on to more complex movement patterns in later school. It is important to stress that just because a physical educator provides movement activities that call on Fundamental Motor Skills does not guarantee that the students have mastered these abilities.

We evaluate students in physical education for many different reasons. Just a few examples include boosting motivation, identifying strengths and weaknesses, classifying students, figuring out degree of achievement, assessing instruction and programs, forecasting future success, and using research design to find answers and resolve issues (Winnick & Porretta, 2016). Adapted physical education measurement and evaluation are regularly investigated to help with the diagnosis of special needs and give a foundation for training.

It is believed that the development of fundamental motor skills occurs in stages (Roberton, 1977). Two methods have been discovered for the development of fundamental motor skills. This is the component approach (Seefeldt & Haubenstricker, 1999) and the complete body approach (Halverson & Roberton, 1979). The total body approach clarifies movement that is carried out by the entire bodily unit as a single stage. Stage theory serves as the foundation for this strategy.

Stage theory describes how specific movement patterns emerge during early life as developmental phases (Roberton, 1977). At various phases of development, movement patterns are thought to be predictable, constant, and universal. The component approach states that many body parts that produce movement go through developmental stages (Halverson & Roberton, 1979). Within the component method, changes in component level can happen over various timeframes and at diverse rates.

Fundamental Motor Skills develops and assesses students primarily to provide information to teachers to aid in the teaching and learning process. Teachers, on the other hand, can use Fundamental Motor Skills to assess and evaluate their students' performance on skills that have been identified as critical for them to learn.

The teacher will be able to identify the specific components about which the teaching should be organized within each skill. Many educators equate assessment and grading. While the Fundamental Motor Skills test can be utilized for this, it is not required. One of the least beneficial reasons for gathering information on the status of 'pupils' or students' Fundamental Motor Skills is for this reason.

Fundamental Motor Skills the nature of the assessment has more widely acknowledged usage (Department of Education, 1996), and these are outlined as follows:

1. Determine Instructional Needs and Status

The Fundamental Motor Skills evaluation will help determine a student's motor skill development status, progress, or achievement. This can be used to evaluate an individual's level of performance or to examine whether a teaching program's

objectives have been met. Year I instructors, for example, might decide to teach the catch.

The teacher monitors the students doing some catching tasks at the start of the unit. More kids are having trouble getting their hands to the ball and catching the ball with their hands alone. The teacher focused instruction on transferring hands to the ball as a result of this observation. The teacher reassesses the student on the catch after a series of classes or at the end of the unit. It is expected that if sufficient emphasis is placed on the identified requirement (moving hands to the ball), improvements will be shown in this component. The teacher can identify the overall amount of improvement, as well as those pupils who are ready to move on and those who need more help and practice bringing their hands to the ball, by observing all students in the class.

2. Group Placement

Individuals will be placed in groups based on their motor abilities based on the results of the Fundamental Motor Skills assessment. Pupils who need to practice and develop the same skill component could be grouped together.

3. Screening

Again, the nature of Fundamental Motor Skills attest to the fact that assessment is to differentiate between individual whose skills are developing normally and those whose skills are lacking in development. This is an excellent means of identifying individuals who may have special needs in their motor skills development.

Extra emphasis on skills within the usual physical education class may be placed on these needs, or additional time may be allotted to overcome any gaps. When

Fundamental Motor Skills becomes the focus of instruction in the Physical Education curriculum, it is critical that it be provided in its entirety or separately.

Fundamental Motor Skills are used throughout Physical Education's movement and physical activity components. When Fundamental Motor Skills are integrated into physical and sports education programs that focus on movement exploration, the development of fair play and safety ideas, and the enjoyment of regular physical activity, a major contribution is made to addressing many aspects of learning. From a large spectrum of available motor skills, some Fundamental Motor Skills have been chosen as the most important for primary school students to master. Catching, kicking, running, vertical dump, overhand throw, ball bounce, lapsing, dodging, punting, forehand strike, two-hand side-arm strike, and so on are examples of these skills.

All pupils must participate in Fundamental Motor Skills or activities at all times. Set up the proper organization and equipment in the other portion of the Physical Education space as needed. It is frequently beneficial to divide the class into a number of settings, with the assessing activity taking place at one of the stations. Assess each student as they pass through the station, based on the skill that they (students) are being monitored for.

Many teachers, according to Winnick & Porretta (2016), link assessments with grading. While the Fundamental Motor Skills assessment can be used for this, it is one of the least useful ways to learn about a student's Fundamental Motor Skills level. The Fundamental Motor Skills assessment is more extensively used, and the following are the results:

The determination of the basic fundamental necessities and class status is a fact among all. The Fundamental Motor Skills evaluation will help determine a student's motor skill development status, progress, or achievement. This can be used to evaluate an individual's level of performance or to examine whether a teaching program's objectives have been met. For example, one teacher may decide to teach 'catch' this year. The teacher monitors the students doing some catching tasks at the start of the unit. Most pupils have trouble getting their hands to the ball and catching the ball just with their hands. As a result, the teacher should concentrate his or her instruction on getting the hands to the ball. The teacher then reassesses the pupils on the 'catch' after a series of classes or at the end of the unit. If the assessed needs have received adequate attention (moving hands to the ball). On this component, it is expected that improvements will be seen.

The teacher can judge the overall degree of improvement, which kids are ready to move on, and which students need more help and practice moving their hands to the ball by observing all students in the class.

Individuals will be placed in groups based on their basic motor abilities based on the findings of the evaluation of fundamental motor skills. Students that need to practice and develop the same skill component could be grouped together.

2.5.1 Self Perception and Fundamental Motor Skills

According to Stodden et al. (2008) model, A child's degree of physical activity is a combination of real and perceived motor skill. However, this only applies if a youngster has acquired the cognitive capacity to assess how well they compare to their classmates in terms of skill level. The majority of evidence supports Stodden et

al. (2008) theory that a child's physical self-perception influences physical exercise participation (Barnett et al., 2008).

According to Hardy et al. (2011), it is important to consider the connection between perceived competence and the development of fundamental motor skills, uptake in physical activity, and weight maintenance. Robinson (2011) looked at improvements in self-perception scores and object control mastery over a nine-week period. The intervention lasted nine weeks and consisted of two 30-minute object control skill sessions per week. Over the course of the nine-week intervention, evaluations for object control mastery and self-perception considerably increased. However, whether or not these two variables were connected was not mentioned by the author. Additionally, there was no control group used to assess if the intervention or the child's physical or cognitive development was to blame for the change in scores for the two categories. On the other side, to better understand why differences develop, Breslin et al. (2012) used a control school. According to Breslin et al. (2012), there are two types of schools: one that provides instructors with formal training to teach Fundamental Motor Skills, and the other that does not. Contrarily, Breslin et al. (2012) did not specify the number of Fundamental Motor Skills sessions the kids attended or the intervals between measures. When the kids were tested, there was no difference between the two schools' Fundamental Motor Skills proficiency. According to the authors, this is because teachers did not have enough time to teach the students effectively despite having training.

The length of time between the two measurements was not reported in the paper, causing this conclusion made by Breslin et al. (2012) to become redundant as other research cannot learn from this. However, there was a substantial difference in the

self-perception scores, with the intervention school students scoring better in this category. Thus, emphasizing the significance of teachers comprehending how to teach Fundamental Motor Skills and how this might favorably impact a child's feeling of their physical well-being to favorably impact Physical Activity. (Barnett et al., 2008). Children will regard themselves as more successful in physical activity circumstances, for instance, if they believe they have higher motor skill. They may also be more likely to engage in physical activity chances at first (Stodden et al., 2008). Breslin et al. (2012) reported that there was no significant association between real motor competence and perceived motor competence, which contradicts earlier research that shows the contrary (Stodden et al., 2008). It is intriguing that Barnett et al. (2008) reported that children with higher perceived motor competence will perceive themselves as more able to participate in activities and, as a result, have a higher level of physical activity, even though Breslin et al. (2012) findings are consistent with prior literature. The association between actual motor competence and perceived motor competence will become clear when children get older than 7 or 8 years old (the age of the children in Breslin et al., 2012 study). This is because the children will have better cognitive development at this point (Stodden et al., 2008). Additionally, Barnett et al. (2008) came to the conclusion that kids with high motor proficiency will have better actual and perceived motor skills when they get to adolescence. This would seem to be in line with earlier studies that have demonstrated a connection between perceived and actual motor competence (Jones et al., 2010). However, only a third of the initial group participated in the follow-up data, which solely examined perceived motor competence in teenagers. The findings did demonstrate that among adolescents, perceived motor skill served as a mediator for engaging in physical activity (Barnett et al., 2008). As a result, the authors were unable to draw any

conclusions about the importance of perceived motor skill in children's actual motor competence and participation in physical activity. In line with prior studies, Poulsen et al. (2011) found that children who are classified as overweight or obese will have a considerably worse self-perception score (Jones et al., 2010). Body mass index and perceived competence did not significantly correlate. Lower perceived motor competence levels, according to authors, may result from environmental and personal factors like SES. Jones et al. (2010) research backs this up with findings indicating parents of overweight or obese kids perceive their kids' motor skills as being inferior, and the kids reflect that perception (although this matched with their actual competence). Children are directly influenced by their parents, and Jones et al. (2010) explain that if parents express their belief in high competency levels, children's attitudes may shift and children will be more likely to engage in physical activity (Robinson, 2011). Children need to have positive self-perceptions about participating in physical activity, according to research. However, it is vital to determine whether this may be changed through an intervention as a result of improving foundational motor skills.

2.5.2 Fundamental Motor Skills and Physical Activity

On the principle of Stodden et al. (2008) According to the conceptual model, the level of physical activity and proficiency in fundamental motor skills are related. Research has looked into the relationship between these two factors and has produced conflicting results. This section will critically assess such evidence at each step. First off, numerous cross-sectional studies have been conducted to document connections between Basic Motor Skills and Physical Activity. To be clear, it is unclear whether Fundamental Motor Skills effects Physical Activity or if Physical Activity influences Fundamental Motor Skills when a study is cross-sectional, therefore it is crucial to

keep this in mind. A systematic review on Fundamental Motor Skills in Children and Adolescents was undertaken by Lubans et al. (2010). 21 articles that met very tight inclusion criteria were included in the review. According to Lubans et al. (2010), Fundamental Motor Skills was linked to at least one of the following in 11 of the studies: pedometer step counts, organized physical activity, and unorganized physical activity (Okely et al., 2001). Ten of the 11 studies that were analyzed only reported connections between Fundamental Motor Skills and Physical Activity and were not able to establish any temporal relationship because they used a cross-sectional methodology. In a study by Okely et al. (2001), 90 students in grades 8 through 10 (13 to 16 years old) were examined to determine how much time they reported spending on six process-oriented Fundamental Motor Skills as well as on organized and unorganized physical activity.

According to the study, levels of fundamental motor skills can accurately predict 3% of organized physical activity ($r2 = 0.03$). Although a sizeable percentage, 3 percent is incredibly low and accounts for only 7% of the range in physical activity. Adolescents are prone to demand features and providing socially acceptable replies when utilizing a self-reported measure of physical activity (Burrows et al. 2010). Therefore, it is more likely that participants will overestimate the quantity of physical activity they engage in when they self-report. These students, who range in age from 13 to 16, will have the cognitive maturity to discern if they ought to engage in more physical activity than they already do. As a result, students who struggle with fundamental motor skills are more prone to overestimate their degree of physical activity. This could, at the very least, partially account for the found weak association between organized physical activity and fundamental motor skills. Fundamental motor skills and non-organized physical activity did not significantly correlate, indicating that they

are only linked to organized physical activity. However, compared to organized physical activity, non-organized physical activity considerably reduces the likelihood of being seen in adolescents (Santos et al., 2009), a possible explanation for why there is no connection between non-organized physical activity and fundamental motor skills. Similar to Okely et al. (2001) carried out a study in which self-reporting was used to gather information on organized and unorganized physical activity. However, nine-year-old kids made up the sample population. In comparison to the other studies that will be examined in this part, Okely et al. (2001) had a smaller sample size (90), which reduces the possibility that the findings are actually representative of the larger population. A further lower sample size of 36 kids was employed by Hamstra-Wright et al. (2006). As a result, outcomes from these two studies need to be read carefully. The limitations of self-reported physical activity levels are discussed above, but it is recommended that parents complete the questionnaire regarding their child's physical activity level if the child is younger than 12 years old. Parents, however, are equally as prone to be influenced by demand factors and overestimate their child's level of physical activity (Burrows et al., 2010). Hamstra-Wright et al. (2006) used locomotor skills as the independent variable and type of sport (organised/non-organised) as the dependent variable, in contrast to all other research that uses regression analysis to predict variance of Physical Activity (independent variable) from Fundamental Motor Skills level (dependent variable) (Barnett et al., 2008). It was noted that organized sport accounted for 29 percent ($r2 = 0.29$) of the variance in locomotor skills. In comparison to other studies that use the Fundamental Motor Skills competency level as the predictor variable, this one produced a much higher percentage of variance 3 percent for Okely et al. (2001); 10.4 percent for McKenzie et al. (2002); 3.6 percent for Barnett et al. (2009); and 19.2 percent for Cliff et al. (2007). Reviewing these

discrepancies leads to the conclusion that perhaps Physical Activity predicts more variance in Fundamental Motor Skills than Fundamental Motor Skills predict in Physical Activity. However, because this study is cross-sectional, causality cannot be established.

Fisher et al. (2005) studied 394 preschool children Fisher et al. (2005) studied 394 preschool children in a cross-sectional study (four years old). Accelerometers were used to capture physical activity, and children had to perform 15 movement tasks. Significant relationships were found between children's movement scores and Physical Activity (p=0.039) and movement scores and Moderate Vigorous Physical Activity (p=0.001). However, the r values for these correlations are low (r=0.1 and 0.18, respectively). According to other studies, the association between Fundamental Motor Skills and other variables is not established until the child reaches the age of school admission. Accelerometers were used to record physical activity, and children were required to complete 15 movement tasks. There was a significant link between children's movement scores and Physical Activity (p=0.039) and movement scores and Moderate Vigorous Physical Activity (p=0.039) (p=0.001). The r values for these relationships, however, are low (r=0.1 and r=0.18, respectively). Other studies claim that the relationship between Fundamental Motor Skills and other variables is not established until the kid reaches school-age (Hardy et al., 2011), indicating that the strength of these relationships will probably increase. This was the case with D'Hondt et al. (2009) study, which focused on older kids (5–10 years old) than Fisher et al studies did (2005). Accelerometers were used to measure physical activity, and eight fundamental motor skills were tested. Greater correlations (r=0.2-0.21) between these factors were noted. Additionally, Hume et al. (2008) studied even older kids between the ages of 9 and 12. Along with the evaluation of the six Fundamental Motor Skills,

accelerometer data was gathered (kick, throw, strike, run, dodge and jump). In comparison to Fisher et al. (2005), stronger relationships between fundamental motor skills and physical activity were once more reported (r=0.21-029). Although stronger correlations were emphasized, the correlation's impact was still minimal because the difference was so minor. The effect sizes of the correlations, however, might be much larger by the time children are adults if connections kept getting stronger as they grew older.

Williams et al. (2008) provided information on the levels of physical activity and fundamental motor skills in three- and four-year-olds (first year of school). Only the four-year-old children's significant correlations were highlighted, not the three-year-olds. Therefore, more proof that there isn't a strong connection between physical activity and fundamental motor skills until kids start school. Additionally, it was shown that when compared to children with lower Fundamental Motor Skills scores, children with better Fundamental Motor Skills scores spent 2% more time per day engaging in moderate to vigorous physical activity and 1.2 percent more time doing strenuous physical activity. Although this difference might appear insignificant, it corresponds to 12 extra minutes of moderate to vigorous physical activity per day, with only 2 of those minutes being vigorous. For children with higher Fundamental Motor Skills proficiency, the overall amount of time spent in Physical Activity might be about 1.2 hours more per week if this is translated into a five-day work week. Although the studies discussed above generally suggests that there is a connection between fundamental motor skills and physical activity, the exact nature of this connection is still being explored. Importantly, Fundamental Motor Skills are not the only predictor of prolonged physical activity, according to Fisher et al. (2005), but they can have an impact on it. In comparison to sedentary behaviors, Vandorpe et al.

(2011) found that both full and partial engagement in physical activity (i.e., if a participant joined or left a sports club throughout the three years of the study) will significantly boost Fundamental Motor Skills competence. Time and athletic engagement did not, however, significantly interact. The mastery of Fundamental Motor Skills is so increased through physical activity, but not at a rate that corresponds to children's maturation. According to their level of physical activity, Vandorpe et al. (2012) divided their sample into three categories: "no participation" (children who did not participate in a sports club during the three years of the study), "partial participation" (as described above), and "consistent participation" (children who participated in sports clubs the entire time). As opposed to Baskit et al. (2011), who selected their sample groups based on the physical activity types of racket sports, team sports, and individual sports. According to Baskit et al. (2011), there were no discernible differences between the three sports groups and they came to the conclusion that while specific types of physical activity are not important for improving Fundamental Motor Skills, physical activity overall is essential. The results, however, cannot be generalized because there was no control group to compare the Fundamental Motor Skills scores with. A specific Physical Activity that could maximize the mastery of Fundamental Motor Skills in comparison to sedentary behavior may have been highlighted if a control group had been included. Conducting a longitudinal study on the same group of participants would be the most accurate way to determine the link between the development of Fundamental Motor Skills in childhood and a sustained level of physical activity in adolescence (Summerbell et al., 2005). Fundamental Motor Skills in Children and Adolescents: A Systematic Review was undertaken by Lubans et al. (2010). Only four of the 21 studies were longitudinal (6-7 years long). Additionally, only two longitudinal studies were included in the

evaluation because three of the four studies were developed from the same study carried out (Barnett et al., 2008). According to Barnett et al. (2008), adolescent levels of physical activity were found to be correlated with childhood Fundamental Motor Skills mastery. In contrast to this, the other longitudinal study conducted by McKenzie et al. (2002) found that certain children's levels of physical activity at age 12 were not predicted by their mastery of fundamental motor skills at ages 4-6 years. Lubans et al. (2010) says that the fact that only three fundamental motor skills were examined and their mastery level was determined using a 0–2 scale accounts for the lack of a link between fundamental motor skills and physical activity. However, assuming that's the case, it's strange that the review's writers (Lubans et al. (2010) did not alter their criteria for including studies that evaluate more than three Fundamental Motor Skills and make use of a more comprehensive and sensitive assessment scale. The three Fundamental Motor Skills that McKenzie et al. (2002), Catching, jumping, and balancing were all evaluated. The maintenance of a healthy physical activity level may not depend on these three fundamental motor skills, and it may be that additional fundamental motor skills that were not examined are crucial for the forecasting of future physical activity levels. Also, McKenzie et al. (2002) targeting young children; at this age, neither physical education nor the chance to properly develop fundamental motor skills have been available to them. This explains why there was no correlation between the level of physical activity at age 12 and the level of fundamental motor skill competence at preschool age. to achieve and sustain mastery of fundamental motor skills, Haywood and Getchell (2009) underline that as they do not spontaneously develop as a kid age, fundamental motor skills need to be taught and exercised. Vandaele et al. (2011) recommend that between the ages of four and six, children should learn, develop, and perfect their fundamental motor skills. suggesting

that physical education sessions are the ideal environment for developing fundamental motor skills as a result (Sallis et al., 1997). Teachers can enhance their fundamental motor skills in a learning environment with guidance and mentoring. (Mitchell et al., 2013). Branta and Haubenstricker (1984) shows that the development of Fundamental Motor Skills occurs in stages, emphasizing that "free play" will not aid in the development of Fundamental Motor Skills and that more controlled instruction is essential (Gagan & Getchell, 2006). As previously said, it has been hypothesized that a child's fundamental motor skills develop between the ages of four and six. However, the same study notes that when a kid learns to sit up and subsequently stand, they acquire their first balance-related Fundamental Motor Skills. (Vandaele et al., 2011). Basic balance has been learned once one is able to stand upright. The infant will then advance to walking, which will require changing the body's center of gravity to accommodate the leg's forward swing. The child will then have mastered the key mechanics for standing on one leg, which will be evaluated later in this thesis. Children can move on to more sophisticated abilities that demand more mastery once this has been learned. Contradictory findings between physical activity and fundamental motor skill mastery level have been found throughout the literature. Some study implies that having a strong foundation in fundamental motor skills will affect how much you participate in physical activity, while other research says that having a strong foundation in fundamental motor skills can help you participate in more physical activity (Hume et al., 2008). According to Stodden et al. (2008) model, physical activity levels are primarily influenced by the Motor Competence, which sets off a series of processes that lead to a change in weight status. But it's crucial that a variety of physical activities be made available to develop all the Fundamental Motor Skills (Vandaele et al., 2011). Children need to learn these skills so they can

participate in an activity of their choosing as well as for their physical health. However, children in wealthy countries like the United Kingdom are becoming less active physically and are getting fewer opportunity to participate in a variety of activities (Kahl & Emmel, 2002). Physical exercise needs to be at a more structured level for the mastering and maintenance of the Fundamental Motor Skills, even though children may succeed in learning the skills needed to participate in activities (Vandaele et al., 2011). Vandaele et al. (2011) reported that, when compared to low intensity physical activity, connections between movement skills and moderate vigorous physical activity are generally stronger suggesting that children who engage in moderate to vigorous physical activity have an easier time developing their fundamental motor skills. Degrees of freedom might become a challenge when learning new movement patterns (Bernstein, 1967). Degrees of freedom are defined as the possibility of simulating more than one motor program to produce the same trajectory (Berthouze & Lungarella, 2004). As a result, the brain must exert complete control over all degrees of freedom at every stage of the execution of a movement pattern (Kelso, 1982). Newell (1991) reported that a controllable system must be created from the degrees of freedom. It has been hypothesized that the kinematic links involved in a movement can be split into less related groups or linkages (Kelso, 1982). Practice and repetition of the movement patterns are required to strengthen these connections until the activity is automated and the degrees of freedom are minimized (Newell, 1991). In order to establish these linkages, children who engage in more vigorous physical activity have more opportunities to practice their fundamental motor skills in settings that are more relevant to the natural world. Going to an afterschool program or an outside sports club is frequently required in order to engage in more formally scheduled physical activity. However, there may be

obstacles that prevent kids from joining after-school or outside sports teams. Financial (coaching costs, the cost of equipment and uniforms, club dues, etc.), logistical (travel to practice and games/matches), and psychological difficulties are a few examples of these barriers (self-confidence, self-efficacy and perceived competence) (Ziviani et al., 2009).

2.5.3 Fundamental Motor Skills and Body composition

Previous studies have shown that weight status has a deleterious impact on fundamental motor skills (Lopes, 2011). A total of 21 studies were cited in the Lubans, Morgan, Cliff, Barnett and Okely (2010) systematic review, nine of them compared the mastery of Fundamental Motor Skills using weight status as a variable. A substantial unfavorable association between weight status and command of the Fundamental Motor Skills was revealed in six of the nine investigations (D'Hondt et al., 2009) proven evidence demonstrating that overweight and obese kids perform worse on tests of their locomotor skills (run, gallop, skip and hop). Okley et al. (2001) says that this is due to their increasing body mass making it more difficult for them to walk over a distance and do the skill according to the criteria that it is being evaluated on. D'Hondt et al. (2009) confirms this and implies that greater body mass also impacts balance since it alters posture and stability, making it more difficult to maintain balance for the requisite period of time. Additionally, the pain from the knee, hip, or ankle caused by a larger body mass increased strain on the joint may shorten the length of the balance. As previously stated, McKenzie et al. (2002) confirms this and implies that greater physical activity has an impact on balance as well. However, research did not find a connection between teenage physical activity levels and early Fundamental Motor Skills proficiency. It did, however, demonstrate a negative correlation between weight status and fundamental motor skills. Contrarily, other

research has demonstrated a connection between a healthy body weight, engaging in physical activity, and having strong fundamental motor skills. Strong fundamental motor skills will influence physical activity, and because physical activity burns more energy than eating does, a healthy weight will be maintained (Lopes, 2011). Children's ability to move more readily can help with the development of Fundamental Motor Skills if their weight status reaches a healthy level (Okely et al., 2001) and possess greater joint flexibility to correctly execute the skills (Lamari et al., 2005). Physical activity involvement will rise as a result of this. Alternatively, if children can develop their fundamental motor skills at a young age, they will engage in more physical activity. (Barnett et al., 2008) and won't initially start to gain weight. Therefore, by fostering fundamental motor skills in children at a young age, physical inactivity and obesity can be avoided.

2.5.4 Fundamental Motor Skills and Gender

Children should not be biologically different from one another at the primary school age range of 4 to 11 years old, and no gender difference in the mastery of Fundamental Motor Skills should exist. Therefore, gender disparities in fundamental motor skills are likely the result of environmental factors, such as peer, teacher, and media influences on activity choice and influences from parents, classmates, and teachers. The relationship between gender and competence in fundamental motor skills is conflicting. Ziviani et al. (2009) and Hardy et al. (2011) report that males and girls perform differently in several ability areas. According to Vandaele et al. (2011) Gender was one of the variables that were examined when 18 distinct Fundamental Motor Skills were examined. Gender was said to have no bearing on how well the 18 Fundamental Motor Skills were mastered. This contradicts past study that has shown that girls will perform better than boys in balance and that boys will perform better in

object control skills (Hardy et al., 2011). Children are drawn to activities that fit stereotypes; for instance, females choose gymnastics and dance, which improve balance and galloping, and boys prefer ball and chasing games, which improve catching, throwing, and running. Positive outcomes were observed in two intervention trials that examined how to increase children's levels of physical activity and their mastery of fundamental motor skills (Mitchell et al., 2013). Graf et al. (2008) executed a four-year intervention that involved educating the instructors and giving the kids more opportunity for physical activity. Mitchell et al. (2013) executed a six-week intervention that includes prior training for the classroom teacher on how to teach fundamental motor skills. Despite this, neither intervention captured the participants' gender. Mitchell et al. (2013) indicated that youngsters aged 5 to 12 showed the greatest improvement in their kicking, catching, and striking abilities. As previously mentioned, boys are inherently superior at performing all of these object handling skills (Ziviani et al., 2009). Graf et al. (2008) observed a considerable increase in lateral jumping and balance backwards. Girls are frequently reported to accomplish these tasks better than boys (Ziviani et al., 2009). Because the data were not broken down by gender, it was not possible to determine whether boys or girls improved more significantly because of a lower baseline for these skills (Ziviani et al., 2009). Baskit et al. (2011) compared the Fundamental Motor Skills proficiency of three sport categories (individual, racket, and team sports) in children under the age of ten. Once more, gender was not recorded, therefore, unlike in schools, it cannot be assumed that a roughly equal distribution of boys and girls would be obvious. An activity that improved Fundamental Motor Skills more than another activity may have been emphasized to a particular gender and used for future interventions if gender had been documented.

2.5.5 Fundamental Motor Skills Interventions

Logan et al. (2011), we out a meta-analysis on 11 intervention studies with a focus on improving kids' competency in fundamental motor skills. Although the interventions used in each study varied, they all led to an improvement in skill. However, eight of the 11 studies utilized kids who were at risk for developmental delays or had little autonomy, so they could still use some work compared to kids who are usually developing. The description of control groups was "free play." The idea that Fundamental Motor Skills must be taught, learned, and developed and will not automatically advance in free play is reiterated by the fact that none of the five studies that included control groups demonstrated any substantial improvement in skill proficiency. Over a period of 6 to 15 weeks, interventions ranged from 480 minutes to 1350 minutes. However, there were no differences in the level of proficiency in Fundamental Motor Skills and the duration of an intervention. Logan et al. (2011) suggests that once a skill is acquired, children will plateau. Another viewpoint is that interventions may become monotonous, which could lead to boredom and project disengagement (Graf et al., 2008). These results imply that in order to keep kids interested and motivated throughout an intervention, future programs should be entertaining and varied enough. From the remaining three research projects from Logan et al. (2011) review, the samples included overweight and obese kids, kids with disabilities, and kids who were developing normally. Cliff et al. (2007) used overweight and obese kids without a control group as their sample. Following the conclusion of the 10-week intervention, a nine-month follow-up was done. The goal of the intervention was to build six locomotor and six object control abilities through a variety of physical exercises. Home challenges were also created to promote more practice at home. Fundamental Motor Skills increased dramatically overall and

remained much higher on the follow-up test. However, the levels of physical activity fell between the pre- and post-test, and they further fell throughout the follow-up. A reason for this might be that the amount of physical activity in each two-hour session was insufficient, and that the length of the instruction time interfered with the children's ability to engage in physical activity throughout the two-hour sessions. This conclusion cannot be drawn since the instruction time was not supplied. Despite a decline in physical activity, fundamental motor skill competence increased, and this has a greater impact on future levels of physical activity (Barnett et al., 2008). Therefore, even if physical activity levels need to be reduced during a physical activity class in order to acquire fundamental motor skills, this could still have a favorable impact on physical activity in the long run. When children had to wear the accelerometers, this could have been a contributing factor to the initial ceiling effect, when they were more physically active than usual because they were eager to use this unusual piece of equipment. This is corroborated by the observation that kids actually showed higher levels of moderate to vigorous Physical Activities (MVPA) (+20min/day MVPA) compared to an accelerometer-measured representative sample of people of comparable ages (Trost et al., 2001). Because they tend to be inactive in the beginning, choosing a sample of overweight and obese kids could have some drawbacks (Page et al., 2005) Additionally, their physical activity will increase during a physical activity intervention compared to how it would be under normal circumstances, increasing the possibility that they will have a balanced or negative energy intake. However, this outcome would be influenced by a variety of personal traits as well as the level of physical activity intervention. Although the Body Mass Index of the overweight and obese children did not significantly alter between Cliff et al. (2007) study. A decrease in body mass index would not be anticipated given that

there was a decline in physical activity over the course of the intervention. In contrast, programs that raised physical activity levels in overweight or obese kids found that BMI was decreased by a third (Sigelman & Rider, 2012). Valentini and Rudisill (2004) also did a six-month follow-up and found that the intervention's effects were still felt. This 12-week intervention involved teaching Fundamental Motor Skills to two different groups in two different motivational climates (high and low). Following the intervention, children in both circumstances showed progress in their ability to learn fundamental motor skills. However, it was shown that the children in the high motivated environment showed a considerable improvement, which persisted six months later. If follow-up evaluations were carried out to determine the long-term impact of the therapies on the Fundamental Motor Skills, the validity of all the other interventions would be significantly increased. It is very advised to collect follow-up information (Logan et al., 2011), Interventions are used to support long-term lifestyle changes rather than to have a single, "one-off" effect. Each intervention from Logan et al. (2011) review It made up of sessions on the improvement of Fundamental Motor Skills. However, each session's duration for physical activity and instruction time were not recorded. Van Beurden et al. (2003) executed an intervention that included measures to improve fundamental motor skills, project teams, health policies, teacher support, implementation of a buddy program, supportive environment creation, and website creation. They came to the conclusion that it is crucial to record both the actual content of each session and the amount of time spent on instructions. Van Beurdon et al. (2003) found that simply keeping track of "skill," "fitness," or "game" for each session did not provide enough information to determine whether physical activity levels were maintained high enough while the intervention was being used. As a result, an intervention must offer sessions that improve Fundamental Motor

Skills while maintaining a high Physical Activity. Boys tend to be more physically active than girls, and research consistently shows that boys will outperform girls in certain Fundamental Motor Skills. However, Van Beurden et al. (2003) reported that guys participated more actively in the intervention than girls did. This shows that the effects of interventions may vary for males and girls. Derri and Patcha (2007) conducted a study to examine the impact of command and guided exploration as two different teaching philosophies. In the command approach, the instructor would demonstrate while delivering instruction and feedback. In the guided discovery method, the teacher led the students to the right manner to carry out the skill while letting them experiment. There was no demonstration involved. According to the employed grading scale, both groups' level of Fundamental Motor Skills competence doubled between the pre- and post-test. However, there was no significant decline in Fundamental Motor Skills in the guided discovery group between the post-test and retention test, indicating that it has longer-lasting impacts on Fundamental Motor Skills retention. Despite the fact that this decline in Fundamental Motor Skills was not statistically significant, it was still present in the guided discovery group, indicating that a second follow-up measure would be helpful to determine whether or not Fundamental Motor Skills mastery plateaus at a higher level compared to the pre-test. Because a control group was not included in this study, it is impossible to say whether the children's improved Fundamental Motor Skills were only the result of the intervention or also a result of their normal growth. Derri and Patcha (2007) suggest that future studies examine how various instructional philosophies translate to the actual (sporadic) play those kids engage in. The majority of the research in this field involves therapies lasting 6 to 12 weeks (Logan et al., 2011). According to theory, the length of the intervention is irrelevant as long as it has a favorable impact on

fundamental motor skills and accomplishes its intended goal. The amount of time required to master each talent hasn't been quantified in the literature, though. Additionally, an intervention's time may not be its most crucial component because the content must be prepared to fulfill the study's objectives and leave a lasting impression. In divergence to this, Graf et al. (2008) undertook a four-year intervention that included a weekly health education lecture, a morning physical activity break of five minutes, alternatives for physical activity during break and lunch, and teachers who had been trained to teach fundamental motor skills. There were five control schools and twelve intervention schools. The results showed no difference between the experimental group and the control group in terms of endurance (a six-minute run), no impact on the prevalence of overweight or obesity, and only two improvements in fundamental motor skills (lateral jumping and balancing backwards). Only four skills were evaluated, including lateral jumping, balancing backwards, jumping over one-legged obstacles, and sideways movement, even though two fundamental motor skills improved. Furthermore, the whole collection of abilities required to participate in all sporting activities is not represented by these four competencies. There was no difference in improvement in endurance performance between the intervention and control groups because the children had not acquired the whole set of abilities necessary to participate in a variety of activities, preventing them from enhancing their fitness for health. This shows that treatments must be more vigorous in order to have a greater impact on weight status because simply giving chances for physical activity does not guarantee that kids would engage in it and spend the necessary amount of energy to maintain a healthy weight status. (Graf et al., 2008). Graff et al. (2008) did note that instructors did not deliver the intervention well and that its implementation had declined over the course of the four years, arguing

that interventions delivered by teachers should be more enduring. In 11 schools, Mitchell et al. (2011) carried out a six-week intervention. This required identifying the Fundamental Motor Skills that were the poorest on the pre-test and directing the teachers of physical education and fitness classes to concentrate on them. For the six-week curriculum, the children also choose their own objectives. With the help of this technique, all fundamental motor skills improved. The findings showed that compared to the older kids, kids between the ages of five and six showed a greater improvement in their ability to use their fundamental motor skills. indicating that this would be the best time to start interventions. The study's findings also showed that, out of 900 teachers, just 11 had degrees in physical education and only 74 had physical education training. Fundamental Motor Skills proficiency is continuously low in primary school settings, which can be explained by the fact that a large percentage of primary school teachers lack formal physical education training. The lack of individual variables in this study makes it impossible to identify any potential impacts of age, gender, or body mass index on Fundamental Motor Skills. As previously noted, this study was limited to the Fundamental Motor Skills that required development. One could claim that the large results are due to solely concentrating on poorer skills because there was more room for development. Instead of concentrating on all the talents and spending time on ones that don't require it, focusing solely on the skills that need improvement gives the kids more time to work on these weaker skills. Jones et al. (2010) ran a 20-week intervention program on preschoolers that included staff training, unstructured activities (to practice the skill they had been taught in the structured session), and structured activities (a 20-minute session, three times per week) (four x 30-minute workshop, including theory and practical). The control group engaged in unstructured play. Compared to the control group, the intervention group dramatically increased its

total proficiency in Fundamental Motor Skills. Again, no follow-up was done following this intervention, thus any potential long-term consequences cannot be determined. Preschool settings have been said to be ideal for physical activity treatments since children are still young and learning, and undesirable habits can be avoided (Duncan et al., 2007). Although not all kids go to preschool, if an intervention were to be put in place at this age, those kids would have a better chance of developing their fundamental motor skills before starting primary school. The more skilled children would have a higher skill level, while the less skilled kids would be more likely to be excluded from games (Ignico, 1990). Therefore, it can be advised that interventions be postponed until children are in primary school, when they are all present and can advance together. Additionally, all students will be targeted by interventions in elementary schools, regardless of their earlier experiences outside of school, and all students will benefit. A preschool intervention was carried out by Hardy et al. (2010), involving 15 intervention preschools and 14 control preschools, with a total of 263 (83 percent follow up) and 167 (84 percent follow up) children, respectively. The "exercise and munch" intervention had the following five primary goals:

i. Choosing water over sweet drinks
ii. Eating less snacks and choose healthier options
iii. Increasing fruit and vegetable intake
iv. participating in one or more hour of Physical Activity per day
v. Turning off TV or computer and becoming more active.

Results overall showed a significant improvement in Fundamental Motor Skills in the intervention schools and a decrease in sweetened drinks in lunchboxes. However, Hardy et al., (2010) illustrates how a five-month implementation period was

insufficient to change the children's habits and see results. This intervention, which was considered low intensity, did succeed in boosting fundamental motor skills.

2.5.6 Objective and subjective measurements of Fundamental Motor Skills

Fundamental motor skills can be assessed objectively and subjectively, respectively. While the objective measure is the quantifiable result after the skill has been accomplished, such as speed or distance, the subjective measurement is evaluations of the technique of the skill. Research has primarily concentrated on the subjective measure for evaluating Fundamental Motor Skills (Hardy et al., 2011). All of the research described above found a strong correlation between fundamental motor skills, physical activity, and weight status. Other studies that examined Fundamental Motor Skills objectively but to a lesser extent also discovered strong associations between Fundamental Motor Skills, physical activity, and weight status (McKenzie et al., 1999). Because it's crucial to determine the child's developmental level, the majority of study focuses on measuring the method of the skill (Haywood & Getchell, 2009). Children's success in sports or physical activity will frequently depend on the measurable results of a skill. For instance, their running speed, throwing range, height at which they can jump, and ball-catching ability. However, the objective measurement will be supported by the skill's technique. Literature hasn't yet examined if a skill's technique and objective result are related. As a result, this will be evaluated in the study.

2.6 The Importance of Fundamental Motor Skills

Fundamental Motor Skills is a movement concept that consists of basic movement skills that practice both skill and efficiency abilities. The foundation for a long-term impact in life is learned and embraced basic abilities at a young age (Jaakkola, 2010).

Control of locomotor motions and basic manipulative abilities are essential as core information for being a proficient mover. Basic movement skills support an active lifestyle throughout a person's life, and embracing those skills at a young age can be a big influence in preventing the modern world's inactive lifestyle. Basic movement skills practice has a diverse and positive impact on children's and youth's overall well-being (Jaakkola, 2010). Fundamental Motor Skills provide the foundation for competent and effective mobility, allowing children to explore their surroundings and learn about the world. Children's ability to move and gain Fundamental Motor Skills is ensured when they develop fundamental motor competence during their early years (Gallahue & Cleland, 2003). Because motor and cognitive development are intertwined, learning Fundamental Motor Skills as a youngster allows for the development of cognitive (Sneck et al., 2019).

Fundamental Motor Skills are primarily gross motor skills, and there is a compound and possibly bi-directional relationship between gross motor skills and practical activities, as youth who are more likely to participate in practical activities are more likely to be competent in gross motor skills, and physically active youth are more likely to be competent in gross motor skills. Improving gross motor skills may make it easier for kids to get the recommended amount of daily physical activity (Fu & Burns, 2018).

The maturity of the neurological systems, the development of physical traits, and motor learning all contribute to the development of Fundamental Motor Skills in children (Laukkanen et al., 2013). According to studies, kids who lack gross motor abilities are more inactive, which may have a negative impact on their health in the future (Fu & Burns, 2018). Fundamental Motor Skills are tightly linked to the amount

of practical activity a child receives; the higher the Fundamental Motor Skills, the more active the youngster is. Fundamental Motor Skills control issues are linked to health issues like as increased body mass index and waist size, decreased health-related fitness levels, and poor academic performance (Laukkanen et al., 2013). The development of Fundamental Motor Skills is relevant from a cultural standpoint because of the competency gained in numerous sports, games, and dances (Gallahue & Ozmun, 2006).

Fundamental Motor Skills do not naturally emerge as mature patterns of movement. Rather, they must be taught and practiced (Newell, 1991). Motor skill development is crucial in the overall development of the child (Gallahue, 2000). Motor skill developmental involves changes in motor behavior throughout the lifespan, as well as the process responsible for these changes (Clark, 2000).

Children who develop motor skills at an early age grow in confidence and are likely to participate in youth sports and physical activity (McKenzie et al., 1999). On the other hand, children who develop poor Fundamental Motor Skills may not be motivated to participate in sport and games due to their lack of the basic skills (Seefeldt & Haubenstricker, 1999). Their incompetence may cause them to abandon or reject sports, and this may lead to an inactive (Payne & Isaacs, 1991).

Early childhood and the early school years have been identified as the period that Fundamental Motor Skills emerge and evolve (Ulrich, 1985). Seefeldt (1999) suggested that children must develop Fundamental Motor Skills to a certain proficiency level to be able to perform more complex movement skills. Developing skills and proficiency in Fundamental Motor Skills could lead to physical social, and emotional benefits and may result in a more active and healthier lifestyle (Gabbard,

2004). Guideline of the National Association of Physical Education (NASPE) suggests that preschoolers should develop competence in movement skills that are building block for more complex tasks (Department of Education, 1996).

2.7 The Methods of Teaching Fundamental Motor Skills

It's critical to remember that learners must be taught and mastered essential core motor skills. This means that rather than teaching awareness, teachers should focus on mastering fundamental motor abilities. In the teaching of Fundamental Motor Skills, a variety of methods or strategies are commonly used. Demonstration can aid in the communication of crucial components of fundamental motor skills to be learnt. Words or phrases that highlight the main component on which the presentation is focusing can help improve demonstrations. As a result, students can be requested to show skills before beginning practice to check that the instructions have been grasped.

Teachers of Fundamental Motor Skills must, once again, give adequate chances for students to practice each Fundamental Motor Skill taught. This means that a learner will need to practice the skill several times before mastering it.

Teachers should constantly aim to keep the time between giving an instruction and letting a student to practice as short as possible. If at all possible, have the pupils begin practicing as soon as they see a demonstration. Teachers should wait until the student has had a chance to practice before providing new information.

Furthermore, rather than participating in the activity involving Fundamental Motor Skills, teachers teaching Fundamental Motor Skills must assist students in learning the skill. The teacher should not just sit back and watch. When instructing, they must move among the students. While demonstrating a component of a Fundamental Motor

Skills, teachers should relate a crucial word or phrase to that component. Link the word 'step', for example, to the action of stepping forward during an overhand throw. Students are encouraged to step correctly when throwing by hearing or speaking.

The teachers should be brief and concise when explaining or introducing a Fundamental Motor Skills to students. Thus, teacher talk should be restricted to less than 60 seconds whenever possible. Teachers should also break down the Fundamental Motor Skills into manageable chunks (Wickstrom, 1987). The abilities' components can then be taught in a step-by-step fashion. Teach the first component of the essential motor skills, then the second, and finally the combination of the first and second components. After then, teachers should continue teaching components and adding them into the sequence until the entire skill is completed.

A fundamental movement pattern is an observable performance of basic loco-motor manipulative or stability movement that involves the integration of developmentally appropriate arm, trunk, and leg motions and the combining of movement patterns of two or more body segments (Gallahue & Ozmun, 2006).

Fundamental movement occurs when the infant has developed a solid foundation in reflexive and rudimentary movement, allowing him or her to further explore and manage his or her environment. For an elementary pupil, a physical educator must do more and give entertaining activities.

The activity must be well-intentioned. Physical educators' programs at the elementary school level must focus on mastering fundamental movement skills and learning developmentally appropriate fitness ideas.

During their early years, children are better able to grasp basic motor abilities than at any other time in their lives. If youngsters lose out on this chance to improve their motor abilities, they will be unable to participate in recreational and sporting activities later in life (Williams et al., 2008).

It's crucial to remember that man's world is impossible to imagine without movement. Movement is a sign of vitality. The ability to work, which is only achievable through purposeful movement, distinguishes the human kingdom from other non-human living beings.

The brain, senses, and muscles all play a role in the overall growth of a human person. The muscles, for example, are the ones that carry out the movement. When the brain controls these motions, they might be deemed voluntary. This control is made possible by the senses sending the correct messages to the brain or intelligence. When these capacities function together, the final stage is left to the muscles, which perform the actions. According to Montessori (an Educationalist), movement is the final component that completes the thinking cycles. In a child, movement is a way of human expression that is considered as a representation of mental growth. Intelligence is produced through movement, according to scientific evidence. Movement, on the other hand, aids psychic development. Again, movement has a significant role to play in the child's psyche's conquest of language, which is one of the most essential conquests (Barnett et al., 2008)

Fundamental motor skills are one of the most important evaluation criteria in the Physical Education classroom because they provide a broad foundation of movement abilities from which more advanced skills can be developed.

If a child's Fundamental Motor Skills aren't well-developed, he or she won't be able to construct a solid foundation on which to build proficient movement form. According to this paper, a Physical Education student has gained the skills needed to conduct a variety of physical activities, does participate in physical activities on a regular basis, and IS physically fit.

Knows the implications and advantages of physical activity participation, and values physical activity and its contribution to a healthy lifestyle. Each of these five (5) parts is dependent on the others.

Every time your body moves, you're engaging in a motor skill. Some motor skills, such as bending and stretching, move the body from one place to another, while others, such as bending and stretching, are performed in a single sport. Regardless of how difficult they are or how much movement they need, all Fundamental Motor Skills may be divided into three categories: locomotor, non-locomotor, and manipulative skills. These are the kind of abilities that are typically taught in physical education classes.

Different Skills Taught in Physical Education

Manipulative Skills	**Loco-motor Skills**	**Non-loco-motor Skills**
Throwing	Walking	Twisting
Catching	Running	Turning
Dribbling (hands/feet)	Galloping	Bending
Kicking	Jumping	Stretching
Volleying	Sliding	Curling
Striking	Hopping	Balancing

2.7.1 Manipulative Skills

Manipulation and control of items are the most common manipulative talents (i.e., balls and racquets). Manipulative abilities, unlike locomotor skills, are more culturally determined, which means that they require more practice and feedback to improve (Gallahue, 2012). Gross motor and fine motor manipulative skills are also included in manipulative skills. Throwing, catching, trapping, striking, kicking, rolling, bouncing, and punting are examples of gross motor manipulative skills that apply force to or receive force from objects. Small item handling tasks that emphasize motor control, precision, and accuracy of movement are referred to as fine motor manipulative skills (Kalaja, 2012).

Kicking and catching were the manipulative skills that were considered for this study. Kicking, according to Gallahue (2000), entails applying force to an object with the foot and leg. Place kicking is a kicking style described by Ultrich (2000) in the TGMD – 2 instruments. The ball is placed on a kicking toe or on the ground while place kicking. The kicker approaches the ball from a running start, placing the non-kicking foot slightly behind the ball before kicking the ball with the instep of the preferred foot. According to Payne and Isaacs (2011), there are four stages in the evolution of kicking (total body, approach).

Developmental Sequence for Kicking Total Body Approach

Stage 1

The preparatory stage of stage one kicking involves a stationary position of the performance near the ball. The force production phase looks at the thigh of the kicking leg of the performer moving forward with the knee flexed and nearly parallel to the surface by the time the foot contacts the ball.

The knee joint extension occurs after contact, resulting in a pushing rather than striking action. At the follow-through phase, the knee of the kicking les continues to extend until it approaches 180 degrees.

Stage 2

At the preparatory phase of stage 2, the performer remains static with initial action of hyperextension of hips and flexion at the knee so that the thigh of the kicking leg is behind the mid-frontal plane.

The force production phase emphasizes the movement of the kicking leg forward with the knee joint assuming flexed position. At the following-through phase, knee extension continues after the ball leaves the foot.

Stage 3

The performer at the preparatory phase takes one or more deliberate steps to approach the ball with the non-kicking leg placed slightly near the ball. The kicking foot stays near the surface as it approaches the ball at the force production phase resulting in less flexion than in stage 2. The trunk remains upright with knee extended prior to contact. At the follow-through phase, the force of the kick may carry the performer past the point of contract if the approach was vigorous.

Stage 4

The preparatory phase for this stage involves one or more steps with the final 'step' being an air-bone run or leap. The shoulders are retracted at the force production phase as the trunk inclined backward immediately the support leg makes contact with the surface and the kicking leg begins to move forward. The following through phase

sees the performer either hopping on the support leg or scissors the leg while airborne in order to land on the kicking foot.

Catching

According to Haywood (1993), catching is a receptive skill and the performer is to retain possession of the object he or she catches. It is the action of bringing an airborne object under control using the hands and arms (Payne & Isaacs, 1991). Haywood (1993), believes that a better catch is when the object is caught in the hands than to trap it against the body or opposite arm so that the object can be easily manipulated. Many researchers have different views of the catching skill apart from what Ulrich (2000) has. Below is the developmental sequence for catching according to Payne & Isaacs (1991).

Development Sequences for Catching Total Body Approach

Stage 1

The child presents his arms directly in front of him with the elbows extended and the palm facing upwards or inward the mid-sagittal plane. As the ball contracts the hands or arms, elbows are flexed and the arms and hands attempt to secure the ball by holding it against the chest.

Stage 2

This stage is characterized by the preparation of the performer to receive the object (ball) with the arms in front of the body with elbows extended or slightly flexed. Upon presentation of the ball, the arms of the performer begin an encircling motion that culminates by securing the ball against the chest.

Stage 3

The performer at this stage prepares to receive the ball with arms that are slightly flexed and extended forward at the shoulder. The performer may either use the chest as the first contact point of the ball and attempt to secure the ball by holding it to his/her chest with the arms and hands or attempts to catch the ball with his/her hands.

Stage 4

The performer prepares to receive the ball by flexing the elbows and presenting the arms ahead of the frontal plane. The ball is caught with the hands, without making contact with any other body parts.

Stage 5

The same upper segmental action is identical to stage 4. In addition, the child is required to change his stationary base in order to receive the ball.

2.7.2 Loco-Motor Skills

Locomotor skills consist of moving a human body from one place to another, both horizontal, and vertical dimensions (i.e., walking, running, jumping, skipping, hopping, sliding, leaping, galloping, and climbing) (Gallahue & Ozmun, 2006) and navigate across space. Locomotor skills allow individuals also to form foundational skills for participation in practical activities for health, sports, games, dances, and another lifetime activities. Locomotor skills are not culturally determined, as they develop more naturally than i.e., manipulative skills, meaning that they require less formal instruction and feedback (Gallahue & Ozmun, 2006).

The locomotor skills of hopping and sliding were taken into consideration for this study. According to Payne and Isaacs (1991), sliding is practically the same as

galloping with one exception. The gallop is a forward-moving action, whereas the slide is a sideward-moving one. This will be challenging for the child because he or she will have to execute while facing different directions. John Haubenstricker's developmental sequences for sliding were agreed upon by Payne and Isaacs (1991).

Developmental Sequence for Sliding Total Body Approach

Stage 1

The pattern resembles rhythmically uneven run with the performer often reverting to the traditional running pattern. Both feet generally contact the floor in a heel-toe pattern although either foot may strike the surface flat-footed.

Stage 2

The pattern is executed at a slow tempo with the rhythm often appearing choppy. The train leg is extended during the airborne phase, often causing the trail foot to turn out the lead leg to flex. The feet usually contact the floor in a heel-toe or toe-toe combination.

Stage 3

The pattern is smooth, rhythmical and executed at a moderate tempo. The trail leg may cross in front or adjacent to the lead leg during airborne phase but is placed adjacent or behind the lead leg at contact. The lead foot meets the surface with heel-toe pattern followed by a transfer of weight to the ball of the trail foot.

Hopping

Hopping is a form of jumping in which one foot is used to project the body into space and the subsequent landing on the same propelling foot. This fundamental movement

is considered more difficult than the two-footed jump because it required additional strength and better balance (Payne & Isaacs, 1991).

A pre-longitudinal screening technique is evident for the existence of developmental steps within both the leg and the arm components of hopping. The purpose of pre-longitudinal screening is to determine initially if the hypothesized components contain observable behaviours and whether the steps within it component are arrange correctly (Roberton, 1977). They came out with four steps that describe the leg component of the hop and five steps within the arm component of the hop.

Developmental Sequence for Hopping Total Body Approach, Payne & Isaac (2002)

Stage 1

The non-support knee is flexed at 90 degree or less with the non-support thigh parallel to the surface. This position places the non-support foot in front of the body so that it may be used for support if balance is lost. The body is held in an upright position with the arms flexed at the elbows. The hands are held near shoulder height and slightly to the side in a stabilizing position. Force production is generally limited, so that little height or distance is achieved in a single hop.

Stage 2

The non-supporting knee is fully flexed so that the foot is near the buttocks. The thigh of the non-supporting leg is nearly parallel to the surface. The trunk is flexed at the hip, resulting in slight forward lean. The performer gains considerable height by flexing and extending the joints of the supporting leg and by extending at the hip

joint. In addition, the thigh of the non-support leg sides in force production by flexing at the hip joint.

In the landing, the force is absorbed by flexing the leg at the hips and supporting knee. The arms participate vigorously in force production as they move up and down in a bilateral manner. Due to the vigorous action and precarious balance of performers at this stage, the number of hops generally ranges from two to four.

Stage 3

The thigh of the non-supporting leg is in vertical position with knee flexed at 90 degree or less. Performers' exhibit greater body lean forward than in stage 1 or 2, with the result that the hips are further in front of the support leg upon take-off. This forward lean of trunk results in distance in relation to the height of hop.

The knee of the non-support leg remains near the vertical plane, but knee flexion may vary as the body is projected and received by the supporting leg. The arms are used in force production, moving, bilaterally upward during the force production phase.

Stage 4

The knee of the non-supporting leg is flexed at 90 degree or less, the entire leg swings back and forth like a pendulum as it sides in force production. The arms are carried close to the sides of the body with elbow flexion at 90 degrees as the non-support leg increases its force production that of the arms seems to diminish.

2.7.3 Non-locomotor stability

In some research, non-locomotor stability is referred to as balancing skills, which pertains to the same category of Fundamental Motor Skills, but I choose to call it non locomotor stability in this study. In this sense, balance refers to the body's ability to

stay still while also moving around its vertical and horizontal axes, as well as the act of maintaining postural stability. Dynamic balance is defined as "the ability to retain a postural control throughout other motions, such as reaching for an object or walking across a lawn," while static balance is defined as "the ability to maintain a posture, such as balancing in a sitting, or standing position" (Breslin et al., 2012). Fundamental Motor Skills is made up of non-locomotor stability, which is the foundation for locomotor and manipulation skills, as well as more specific athletic skills later on (Gallahue & Ozmun, 2006).

2.8 Learning Fundamental Motor Skills

Learning Fundamental Motor Skills is defined by the enhancement of execution and performance, their harmony, stability, and the ability to perform the learned skill in a variety of situations (Jaakkola, 2010). Physical Education is easy motivating for primary school students, as everything physical is entertaining for them at that age. On the other hand, children are often so enthralled with their abilities and successes that they fail to learn how to perform them properly. These incorrect motor patterns may develop habits that are difficult to repair later if they are not corrected properly (Check & Schutt, 2012). Despite the fact that childhood is focused on the learning of Fundamental Motor Skills, the importance of skill quality is undervalued. The emphasis should ideally be on improving fundamental motor skills and effective body mechanics in a wide range of movement skills and settings. Several factors that can affect skill performance affect various movement patterns that are learned, used, processed, and adjusted from childhood through adulthood. Individual, task, and environment demands are bundled together (Gallahue, 2000). People's performance is more efficient when they have learned more optimum technique to accomplish the task, hence learners' performance is usually better after practice than before.

Furthermore, mastering a Fundamental Motor Skill is largely persistent, meaning that the skill may be remembered and repeated even after long periods of time without practice (Jaakkola, 2010).

The learning process of Fundamental Motor Skills can be divided into three phases: the initial phase (cognitive phase), the practice phase (associative phase), and the final phase (automation phase). All of them describe the learner's improvement in performance, eventual automation, and changes in attention and observation functions as they progress toward skill acquisition. Even though skill learning can be separated into three phases, it is better to think of them as a continuum, in which the learner does not shift from one phase to the next all at once, but rather in periods. The first-phase entails comprehending and recognizing the talent as a whole, as well as forming a mental image of it. During the first phase, a lot of thinking and cognitive skills are required, and observation is required for practice. Furthermore, performance changes are both significant and ineffectual in the early stages. Nonetheless, the pace of change is generally rapid. Because the cognitive challenges have been overcome during the practice phase, the learner's attention and energy may be focused on identifying and attempting more successful performance tactics. Furthermore, the student's performance of the abilities is already relatively fluent, reliable, and equable, and the learner is able to notice and repair faults made with practice. In the final phase, the skill has come together as a complete and may be executed subliminally without much thought or effort. Furthermore, the movements are balanced, and the skills are performed with fewer errors. Because the skill being performed does not require as much focus, the learner is able to practice multiple skills at once while still taking into account the environment (Jaakkola, 2010). Furthermore, the ten general principles and rules of practicing new skills (Figure 2.4) apply when learning new

motor skills, including the overload principle, specificity principle, principle of progression, reversibility principle, principle of individualism, principle of variety, principle of active involvement, principle of adaptation, principle of balance between load and rest, and principle of concentration (Kauranen, 2011).

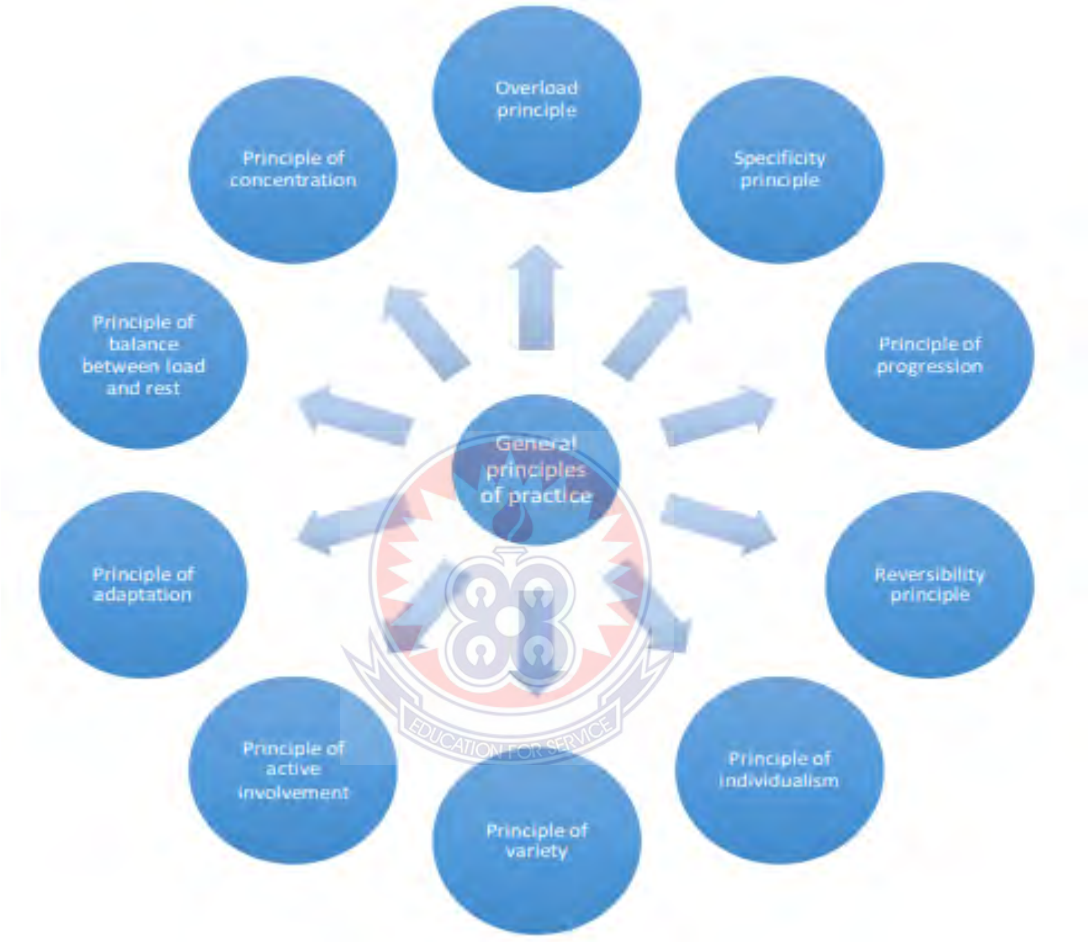

Figure 2.4: General principles of practice

Source: (Kauranen, 2011)

To acquire permanent changes in body and learning processes, the first overload principle in this context suggests that practice and its intensity should be clearly higher than typical everyday activities and functions demand. When mastering a new motor skill, the duration, frequency, and intensity of the performance can be increased by practice, which means increasing the number and time of performances. The

second principle of specificity entails focusing on the development of new skills. Humans grow and learn new skills as they practice them. Specific motor units that are linked together are activated by specific movements. The third concept of progression is that practicing should be a continual progressive process, with the quality, amount, and intensity of practice matching the learner's level of performance and advancement (Kauranen, 2011).

The fourth principle, reversibility, states that practice-induced changes in adaptation are regressive. Individual planning of practice, taking into account an individual's personal capacities, is the sixth principle of individualism. The sixth principle, variation, is concerned with the adaptability of practice. By altering the topics of training, the same skill can be performed in a variety of ways. The learners' active participation is the eighth premise of active involvement. New talents are acquired through practice and active participation. The eighth principle of adaptation entails putting the body to work. The human body adapts quickly, and the same practice no longer has the same impact as it once did. The ninth principle, the balance of load and rest, takes into account the regression that occurs after practice. At relaxation, rather than during training, performance improves. The tenth principle, concentration, emphasizes the need of maintaining focus while practicing. Perfect training response necessitates complete focus and presence when practicing (Kauranen, 2011).

Furthermore, there are two types of Fundamental Motor Skills learning: explicit and implicit. Explicit learning occurs when a student actively and intentionally absorbs knowledge from the teacher in a goal-oriented learning scenario. During practice, the pupil acquires knowledge and learns skills subliminally, whereas in explicit learning,

the pupil acquires knowledge and learns skills explicitly. Many movement skills are learned subliminally (Jaakkola, 2010).

2.8.1 How Skills are Learnt by Children

Children need to create a firm foundation in fundamental motor skills in order to learn and participate well in complicated abilities as they grow and mature, according to a study on the teaching and learning of fundamental motor skills.

New abilities should be constantly introduced when the child is ready to learn them in order for the youngster to reach his or her maximum potential. Teaching new skills too soon can result in failure and discouragement. Again, missing a chance to introduce a skill that a child is ready for can cause them to fall short of their full potential.

According to Gallahue (2000), early motor skill education is critical because the longer children do tasks correctly, the more difficult it gets to unlearn the incorrect pattern and replace it with a more efficient movement pattern. He went on to say that physical education lessons allow all students to learn and practice essential motor abilities, as well as expand their repertoire of talents and put them to use.

Learning-by-doing is the method by which a youngster gains fundamental motor abilities. Trial and error, imitation, and explicit teaching are all methods used by young toddlers to learn. Understanding how children learn allows one to see what might go wrong and how children with mobility problems struggle to absorb concepts.

As children grow older, the basic motor abilities they learnt as youngsters are applied as specialized skills in a variety of sports, games, and even recessional businesses or

activities. For example, throwing an object with an underhand or overhead motion is a fundamental motor skill that is gradually perfected and afterwards employed in sports recreational pastimes such as tennis, volleyball, basketball, and golf. The bottom line is that youngsters who acquire proper technique, get lots of practice, and go from foundational to sophisticated abilities at the appropriate developmental phases will be in a good position to realize their full potential and, as a result, will be well on their way to an active lifestyle.

2.9 Teaching Fundamental Motor Skills

Understanding the learning process, the current learning scenario, and the different instructional strategies accessible, which to employ, is essential for a successful introduction to teach motor skills (Coker, 2018). Even while motivation and success are crucial aspects of the learning process and teaching, developing and implementing high-quality instructions into practice to meet the needs of all learners, regardless of ability level, requires a specialized lesson plan (Colvin et al., 2016). When it comes to teaching youngsters, model learning is a great way to go. Some youngsters may not have had prior experience with practical activities; therefore, using creative teaching approaches, expand the opportunity for understanding how the human body may move in a variety of ways. It allows students to learn and perform without bias by creating a safe learning environment for them (Heikinaro-Johansson et al., 2007).

The components that should be considered in the learning process are presented in an integrative model for enhancing motor skill learning and performance (Figure 2.5). It is based on a situation-based learning strategy that starts with defining the learning outcome (Coker, 2018).

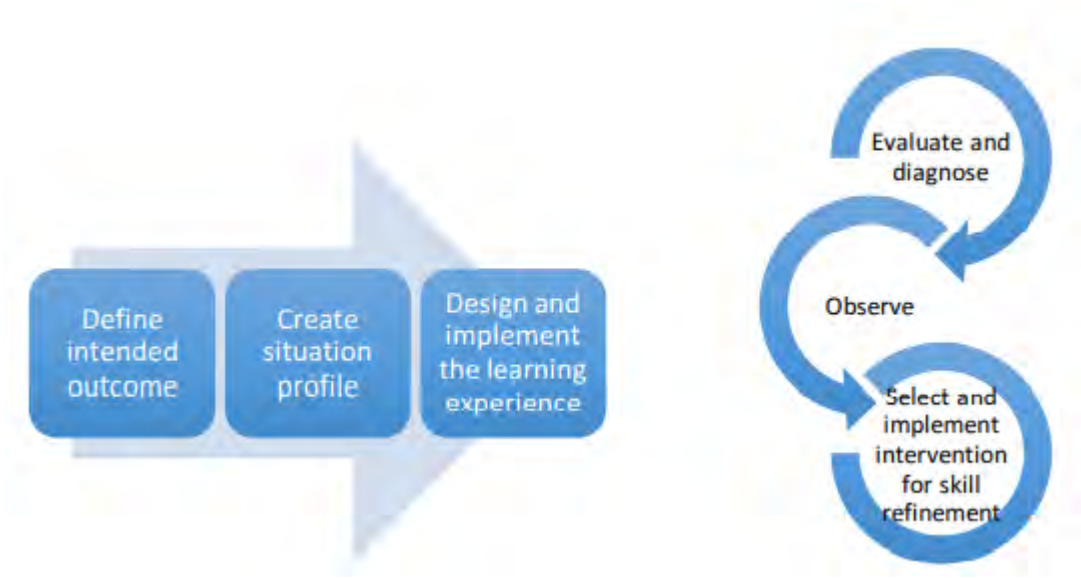

Figure 2.5: Integrative model for facilitating motor skill learning and performance

Source: (Coker, 2018)

Furthermore, the interplay between three variables - the learner, the task, and the environment- is primitive and vital to address when evaluating the understanding and facilitation of motor skill acquisition and execution (Coker, 2018). The basic aspects of skill learning are defining, adapting, and altering the skills desired to learn, as well as the learning environment. The creation of learning exercises and surroundings that assist the learning process is one of the most significant duties for teachers. The activities and environment that support the growth of the learner's motivation, cognitive functions, and the skill itself are tailored to the degree of the learner's acquired knowledge (Jaakkola, 2010). Practitioners can consider and plan how to apply the learning experience once the current learning circumstance has been determined. The practitioner next enters a periodic process, which begins with a perception of the learner's performance attempts. The learner's progress toward skill achievement is appraised, and important flaws are discovered and reinforced, based on perceptions of process assessment (performance of the skill) and product

evaluation (the output of the performance). The intervention strategies for skill growth are then chosen and implemented, taking into account the learner, the task, and the environment once more, as well as their reciprocal interaction with the other two factors, which is constantly changing. The intervention's success is measured when the performance improves. As a result, chosen intervention tactics are either continued or altered as the learner strives to achieve the desired objective (Coker, 2018).

2.9.1 Attitude of Teaching towards Physical Education

It is important to remember that student instructors go through several stages in their growth as teachers, according to research. Leask (2005) outlined three main overlapping stages that students should undergo in order to become effective teachers: self-image and class management; whole-class learning; and individual student learning. She stated that many students take six to eight weeks into their school experience before they feel comfortable with their image and class management (phase 1).

When a student teacher feels reasonably competent in class room management and accomplishing global objectives, they should be able to turn their focus to individual needs (phase 3).

"We have reviewed behaviors that instructors engage in without full awareness and observed that even if teachers are conscious of their behavior they may not comprehend its effect on pupils learning" (Brophy & Good, 1999), stated in relation to the effects of teachers behavior on pupils learning. Many non-specialist teachers have a negative attitude toward physical education, according to some researchers" (Brophy & Good, 1999).

After observing the complex nature of the teaching of physical education, McBride et al., (2002) discovered that many classroom teachers recognized that they were not equipped to teach physical education. It is critical that the attitudinal disposition of teachers is acknowledged in the development of appropriate physical education teachers' education courses, as preserved teachers view about physical education need to be challenged or complemented. To back up this claim, the American Association of University Women produced a report in 1999 claiming that female students receive less attention from teachers and that the attention given to female students is typically more negative than that given to male students (Bailey, 1995)

Early school experiences in physical education, according to researchers, presented prospective teachers with a wide range of information on physical education, which might potentially alter attitudes, beliefs, and teaching methods. Pre-service teachers' beliefs about physical education, developed during their personal school experiences in physical education, act and persist as a reference point that is used against any different theories, they come across during pre-service training (Bamford, 2003).

As a result, the value of teacher education is called into doubt, because school socialization agencies are frequently significantly more powerful than pre-service teacher training (Zeichner & Tabachnick, 1981).

Bailey (1995) stated that we must examine the stories we tell our students and youngsters because far too many of them or the classroom examples portray boys and men as curious, bold, clever, imaginative, and powerful. Girls, on the other hand, are typically silent, submissive, and unnoticed. Teachers can also assist students in identifying gender prejudice in literature and facilitating classroom discussions on why this bias exists. These are some of the classroom attitudes that have a significant

impact on practical and theoretical academic work in many aspects of life. The type of praise and expectations teachers have for their students reflects their gendered judgments of their abilities.

Teachers frequently give girls fewer meaningful and critical compliments than boys. Girls' work is frequently underestimated, critically neglected, and lauded for its appearance, whereas boys' work is described as distinctive or outstanding. This feature of professors' behavior is frequently hazardous to female students. This means that females do not receive constructive comments on their work, which may aid in their development of a deeper knowledge of subjects (Jindal & Liu, 2006).

Another point of concern in terms of teachers' attitudes toward children developing Fundamental Motor Skills is feedback. Teachers are well aware that children learn best when they are given precise feedback on their efforts. Teachers must provide feedback to youngsters in order to help them master Fundamental Motor Skills. When feedback is specific and given shortly after learning and activity, it is most effective. When a teacher gives a child specific feedback, the teacher identifies how the youngster performed in comparison to what was expected.

Teachers should compare each child's performance to their knowledge of the components of the Fundamental Motor Skills being taught in connection to fundamental motor skills. Teachers should inform students on the aspects of the Fundamental Motor Skill they have learned and which aspects they need to work on.

2.10 Challenges of Learning Fundamental Motor Skills

The issue of the teaching and learning of fundamental motor skills have been challenged on a number of different grounds over the last two decades. The primary

challenge emanates from the emerging ecological approach to perception and action (Galantucci et al., 2006).

At most times, apparatus requirement in an average school is usually quite large. Most times these needs to be purchased or made locally. This means that the type of facilities and equipment available will always influence the extent to which fundamental motor skills lessons are effectively and efficiently handled in schools (Galantucci et al., 2006).

Another challenge usually encountered by teachers in the teaching of fundamental motor skills in schools is that of the issue of improvising materials to segment the real ones. Generally, it is good for teachers and learners to make use of the real and standardized materials in the teaching and learning processes. On that, learners can see, feel and use the real equipment from the beginning. However, the procedure and the process involved is usually time consuming and can affect academic learning time of the lesson.

Again, in physical education lesson, the environment suggests that equipment should be available to children who engage in activities involving jumping, running skilling, kicking throwing, leaping and catching. Sometimes these facilities are usually absent and usually tend to distract or posse problems to lessons. To fulfill this goal, the following recommendations are worth considering:

- All basic/kindergarten schools should be equipped with playing space as well as facilities for jumping, running, leaping, climbing etc.
- Provision should be made for the teaching and learning of activities especially during racing seasons to enable pupils to be engaged in physical education throughout.

- ❖ Proper facilities and equipment should be available to ensure the safety and health of children or participants.
- ❖ Basic equipment should be provided to all infant, elementary and high schools such as skipping ropes, cones, Hoops, Bean Bags, Bats etc.

An important factor that will affect a child's Physical Activity level is the environment that they live in. Singh et al. (2008) have reported that children from a lower socio-economic status have an increased chance of having a higher body mass index and being overweight or obese. Research suggests that children with an increased weight status lack mastery of Fundamental Motor Skills (Lopes, 2011). However, Hardy et al. (2010) showed no significant difference in Fundamental Motor Skills mastery in preschool children aged two –six years from different SES groups. In contrast to this, Hardy et al. (2010), suggests that socio-economic status will show its influence on obesity and Fundamental Motor Skills at the age of school entry. Once reaching school age, socio-economic status has such an influence on Physical Activity participation due to variation in financial ability to pay for some school clubs, external sports clubs, kit, equipment, transportation and membership fees (LeBoeuf, 2013). The environment around the child's home can also affect a child's Physical Activity level and thus Fundamental Motor Skills level (Sallis et al., 2000). If families live in an area of deprivation, parents are less likely to allow their children to play outside due to safety concerns (Eyre, 2013). When outdoors children spend more of their time in Moderate Vigorous Physical Activity (22.6%) compared to when they spend time indoors (4.4%) (Cooper et al., 2010). Time spent in MVPA has been linked to an increase in Fundamental Motor Skills development (Vandaele et al., 2011). Rural and urban areas can also affect Physical Activity levels of children (Eyre, 2013). Loucaides et al. (2004) reported that children from rural areas have

more space to play outside and parents deem the space as a safe environment. It was also reported that children from more urban areas are transported to places where they can be physically active (Loucaides et al., 2004). It can be said that, children in rural areas will have more opportunity to be physically active as they do not need to have parents available to transport them to Physical Activity opportunities. With parents becoming busier it will be much harder for them to transport their children to enable physical activities (Veitch, 2005). As stated, Vandaele et al. (2011) suggest that Fundamental Motor Skills will not develop purely from free play and that something more intense is needed. Therefore, SES should not be associated with Fundamental Motor Skills level. However, Murray (2006) reported that children from a higher SES may have better accessibility to sports clubs, where Fundamental Motor Skills can be developed and further practiced during play. Hardy et al. (2012) reported that there was no difference in rural/urbanisation in Fundamental Motor Skills competency but there was in Socio-Economic Session, concluding that the important factor is the accessibility to clubs and organised Physical Activity sessions where Fundamental Motor Skills can be taught, learnt and practiced.

Bois et al. (2005) reported that a child's perception of self-competence in relation to Physical Activity is directly influenced by their parent's perception of their child's ability. Parents of overweight/obese children perceive them to be less physically competent compared to parents of 'normal' weight children (Jones et al., 2010). Although these perceptions are likely to be correct, parents must verbalise positive encouragement about the child's competence to persuade them to increase participation levels of Physical Activity (Jones et al., 2010). Furthermore, Graf et al. (2008) conducted a study which included a four-year intervention of 30-minute health lessons on: biological background, nutrition and self-management; five-minute active

breaks were giving during lessons and Physical Activity options (information on the Physical Activity options was not reported) were available in break times. Over the four years, 23.2% of the overweight and obese students from the intervention schools reached a normal weight with 19% of overweight and obese students from the control schools reaching normal weight. There was no significant relationship between overweight/obesity and Fundamental Motor Skills mastery level, emphasizing that engagement in Physical Activity alone is not enough to develop mastery of Fundamental Motor Skills and that parents need to show support and understand that more needs to be done in Physical Education lessons and outside of the school setting.

Children are often excluded from playground games due to their lack of skill (Ignico, 1990). If children already have a lack of skill and are further left out of playground games then, potentially children may not have the confidence to join an afterschool/sport clubs where sports specific Fundamental Motor Skills would be taught by a coach. Children will detach themselves from their peers to avoid any unwanted attention (Frontear, 2007). As previously stated, this minimises any chance of friendship or identity to a social group and results in a secluded life style with the individual judging themselves as not worthy. Due to research identifying the importance of Fundamental Motor Skills mastery influencing Physical Activity participation (Barnett et al., 2008), it can be speculated that if children can master the Fundamental Motor Skills, then they are likely to be included in games in the playground due to successful execution of the skills (Stodden et al., 2008). Thus, resulting in an increase in Physical Activity level and an increased likelihood that they will maintain a healthy weight status. How children perceive their own ability can also affect a child's motivation to partake in Physical Activity.

2.11 Summary of the Literature

This chapter two has reviewed existing literature on assess the teaching of some selected Fundamental Motor Skills (kicking, catching, hopping and running) in basic schools. The chapter also looked into the various conceptual and theoretical issues related to the Nature of Fundamental Motor Skills, the methods of teaching Fundamental Motor Skills, attitude of teachers towards the teaching of physical education, Fundamental Motor Skills taught in basic schools, the importance of fundamental motor skills and challenges of learning fundamental motor skills.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter focuses on the methodology used in the study. This includes research design, population and sampling, data collection techniques, validity and reliability, data collection procedures, data analysis, and ethical considerations.

3.1 Research Design

The research design involves the intersection of philosophical assumptions, strategies of inquiry and specific methods (Creswell, 2007). A research design provides a framework for the collection and analysis of data (Bryman, 2012). And the strategy is a quantitative research paradigm. Hence, the study employed Descriptive survey method. According to McNabb (2014), Descriptive survey method is a scientific method which involves observing and describing the behaviour of a subject or situation without influencing it in anyway. Again, it is seen as "the collection of information from a sample of individuals through their responses to questions" (Check & Schutt, 2012). The main goal of this type of this research is to describe the data and features about what is being studied. The idea behind this type of research is to study frequencies, averages and other statistical calculations. The research involves the collection of data using questionnaires and observations. Consequently, the research had the advantage of profiling and examining associative relationships among students and physical education teachers in the schools. Descriptive research design allows different researchers to observe a similar phenomenon and still come up with different findings. Thus, descriptive research design, scrutinizes the actual situation in a chosen setting.

3.2 Population

According to Hanlon and Larget (2011), population is entirely the unit or individuals of interest. The population of the study is a group of people, who have one or more common characteristics, on which the research study envisages (Hanlon & Larget, 2011). The total population for the study was one hundred and Twenty (120) classroom Physical Education teachers. The targeted population for this study covers ten (10) basic schools-(Tendamba M/APrimary School, Limanyiri Primary School, T. I Block "A" Primary School, T. I Block "B" Primary School, Wa Model Primary School, Catholic Primary School, Fongo Primary School, Jujeidayiri Block "A" Primary School, Demonstraction Primary and Jujeidayiri Block "B" Primary School) in the Wa municipality. The accessible population of this study was one hundred and ten (110) Physical Education teachers from ten (10) selected schools within the Wa municipality.

3.3 Sample Size

Saunders, Lewis and Thornhill, (2012) define sample population as a group of subjects identified from a larger population as a representation of the entire group. It is the process of selecting a number of individuals for a study in such a way that the individuals selected represent the large group from which they were selected (Tiberious, Mwania, & Mwinzi, 2016). According to Creswell (2012) the sampling method adopted helps in identifying safe generalizations that can be deduced from a larger target population. The study employed the use of randomized purposive sample technique to obtain data. The study employed the use of random and purposive sampling techniques to obtain data. As a result of this, the researcher selected one hundred and ten (110) physical teachers as the accessible population.

3.3.1 Sampling Technique

According to Agyedu et al. (2007), Sample is defined as a subset of the population considered for a study. Information obtained from a good sample is representative of the total population under the study (Creswell & Plano, 2007). In every type of research, it would be superlative to use the whole population, but in most cases, it is not possible to include every subject because the population is almost finite. This is the rationale behind using sampling techniques like convenience sampling by most researchers (Etikan et al., 2016). The 109 Physical Education teachers and the ten basic schools were purposively selected for the study due to their outstanding performances in the inter-schools' sporting competitions in the municipality. Purposive sampling technique is a non-probability sampling technique that is used to select participants based on the characteristics of the population and the objective of the study (Creswell & Plano, 2007). This method of sampling helped the researcher to use the specific characteristics existing in the target population, since these traits were extremely critical to the results of the assessment (Malhotra & Birks, 2007). The reason for their selection using this sampling technique is that they exhibit most of the characteristics needed for the study. They are more knowledgeable in this field and possess very vital information needed for this study. According to Agyedu et al. (2007), this sampling method permits researchers to intentionally sample only participants whose knowledge on the subject is essential in understanding the subject under investigation. The ten (10) schools were randomly selected for the study based on their outstanding records and performances with respect to inter schools competitions within the Wa municipality.

3.4 Data Collection Instrument

Hsu and Sandford (2010) describe instruments for data collection as the tools used by researchers to measure variables of importance in the data gathering process. There are several research tools for data gathering, nevertheless, considering the data required and the nature of the study, questionnaire instruments in relation to descriptive survey method were found to be most appropriate for obtaining the right data in this study. The questionnaires were administered to the physical education teachers and were ably assisted by the researcher to gain full understanding of the questions asked. The activities of the physical education teachers were closely observed by the researcher for a period of two months. The observation scheduled (Appendix A) indicated criteria and how the researcher observed the physical education teachers' practical demonstrations.

3.4.1 Questionnaire

Malhotra and Birks (2007) describe questionnaire as a set of questions for collecting data from large group(s) of individuals at the same time and respondents are free to express their views without being intimidated by the researcher. Questionnaire is used to collect responses from persons in a geographical area of study about present methods, practices, conditions and demographic data. A questionnaire was designed to obtain data from the physical education teachers (Appendix A). In this study, standardized structured questionnaire was used to gather data from respondents for the study. Close ended questions were used to seek the views of respondents on the identification of the nature of some selected Fundamental Motor Skills, methods adopted by teachers in the teaching of these selected Fundamental Motor Skills, challenges encountered by teachers in the teaching of these selected Fundamental Motor Skills and best practices for teaching these selected Fundamental Motor Skills.

3.4.2 Observation

Observation is defined as "the systematic description of events, behaviours, and artefacts in the social setting chosen for study" (Marshall & Rossman, 2015). Observation would also be used to collect data. This does not rely on issues on what others say or think. It is simply seeing things occur in their natural settings. The observation was done with the use of checklist. The child had to perform every item twice. When the performance was correct, a score of one was marked on the checklist. However, any incorrect performances were scored zero (0) on the checklist. This observation method enabled the researcher in a variety of ways. It provided the researcher with ways to determine who interacts with whom and how teachers relate with their pupils. It also checked for how much time was be spent on the various activities by the participants. Again, it checked the step-by-step criteria the teachers impart on their pupil during performance of the skill involved. The sum of both performances represented the final score of each item. The lesson observation schedule comprised fourteen items, which collected information on how Physical education practical activities were set up for pupils, the equipment and materials used, procedures used and how the practical activities were supervised. The observation protocol was used to determine whether the respondents' expressed views in the questionnaire were consistent with their practices and to examine what goes on in the field during practical lessons. Attached is the observation scheduled (Appendix A).

3.5 Validity and Reliability of Instrument

Content validity is the measure of the degree to which data collected using a particular instrument represents a specific domain of indicators of a particular concept. Reliability refers to a measure of the degree to which research instruments yield consistent results (Mugenda & Mugenda, 2003). The instruments were reviewed by

experts in Health, Physical Education, Recreation and Sport (HPERS) department at University of Education, Winneba to ensure their face and content validity, after which they were pre-tested in Dan-ibu international JHS and Kperisi JHS in Wa municipality in the Upper West Region of Ghana to estimate their reliabilities. The items of the questionnaire were subjected to item analysis in order to identify those whose removal or modification would enhance the internal consistency of the instruments (Onwoioduokit, 2000). The Statistical Package for Social Sciences (SPSS) was used to determine the Cronbach alpha coefficient value for the questionnaire, which was found to be 0.616. According to Leech et al. (2005) Cronbach alpha coefficient value of 0.616 and above indicates a reasonable internal consistency and that alpha value between 0.60 and 0.62 indicate minimal adequate reliability. According to Ary et al. (2002), where results are used to make decisions about a group, reliability coefficient of 0.50 to 0.60 is acceptable. The questionnaire items were therefore reliable as the Cronbach alpha coefficient value was above 0.60. To determine the reliability of the observation protocol, experts observed practical lessons in Dan-ibu international JHS and Kperisi JHS in the Upper West Region of Ghana using the observation protocol. The Cohen's kappa coefficient value, depicting inter-rater reliability of the observation protocol was determined using Statistical Package for Social Sciences. A Cohen's kappa coefficient value of 0.77 was obtained. According to Mutton and Coleman (2018), observation data with an inter-rater reliability of 0.7 or 70% is considered reliable. This implies that the observation protocol was reliable.

3.6 Data Collection Procedure

To obtain authorisation to conduct the study, official letters were sent to the heads of the selected Basic Schools. The questionnaires were given to 109 physical education

teachers with at least three years of experience in the selected ten Basic schools in the municipality. Then ten 10 schools were randomly selected based on their outstanding performances in inter-schools' sports. The surveys were administered directly to the respondents by the researcher. The researcher described the study's goal as well as any parts of the questionnaire that the respondents found difficult. All of the participants were told that the information they provided would be kept private. The questionnaire was delivered to each respondent with enough time to complete it. The questionnaire was completed and collected in four days, resulting in a 100% return rate. The sample of 109 physical education teachers were used for the second phase of the research. Based on the selected schools' time tables; 40 minutes for a lesson, an 80 minutes practical lesson each was observed using the observation protocol or checklist. The purpose was that the analysis of the quantitative data revealed similar responses by teachers and exhibit possible common behaviour during practical lesson. The observation was to cross check and identify discrepancies between respondents' knowledge and attitudes toward practical activities based on the quantitative data gathered during the first phase. During the practical activities' lessons, every observable behaviour (verbal and non-verbal) of the physical education teachers were ticked (√). The researchers were non-participant observers. Notes were also taken during the practical activities lessons to take care of relevant issues not covered by the observation schedule, such as the topic and objectives for the lesson, list of materials and equipment used in each observed lesson. Notes were taken on the Fundamental Motor Skills (kicking, catching, hopping and running) and the involvement of pupils in these activities.

3.7 Ethical Considerations

On the aspect of consent, before the researcher conducted the study in the schools, the researcher explained the main objective and specific objectives of the research to the Wa Municipal Education Authorities and sought permission to carry out the study in their municipal basic schools. At each school, the informed consent of the heads of the schools and physical education teachers were obtained before the data collection begun. The researcher also informed the respondents of their right to withdraw when they felt like doing so. Before conducting the questionnaires, the researcher assured the participants that all data collected would be kept securely and treated as confidential. To maintain confidentiality, the schools and all the participants were given anonymous names in the data analysis and interpretation. Therefore, private data identifying the participants and their schools were not included in the report. As for the consequences of the study, the researcher assured all the schools and individual participants that he would take full responsibility for the consequences arising from the study.

3.8 Data Analysis

According to Kothari (2004), data analysis is a process of editing, coding, classification and tabulation of collected data. Creswell (2014), explain that data analysis is usually connected and integrated when interpreting data and doing discussion. The respondents' responses to the five Likert- scale type questionnaire items were analyzed using the Statistical Package for Social Sciences (SPSS) version 25. Respondents agree replies were interpreted as agree, neutral remained as neutral and disagree as disagree. The data were organised into frequency counts, percentages, mean and standard deviation scores using the descriptive function of the SPSS. Montcalm and Royse (2002) attested that “registered frequency table, mean and

standard deviation are of these four (4) ways in which data can be summarized. Glass and Hopkins, (1996) argued that, statistical information could be more easily understood comprehended and interpreted more accurately, if it is organized into tables, mean and standard deviation.

Descriptive statistics was used to analyze the demographics characteristics of the classroom physical education teachers**.** Similarly, Descriptive statistics was used to analyze the nature of Fundamental Motor Skills taught, methods and Sequences adopted by classroom P.E. teachers in the teaching of Fundamental Motor Skills, challenges encountered by classroom P.E. teachers in the teaching of Fundamental Motor Skills and best practices that can be adopted in teaching Fundamental Motor Skills in the basic schools in the Wa Municipality. A mean score below 1.5 was regarded disagreement, mean score of 1.5 regarded uncertain or neutral, whereas a mean score above 3 was considered agreement to the nature of Fundamental Motor Skills taught in the basic schools. In other for the researcher to examine hypothetically whether there is no gender-wise significant difference in Physical education teachers' methods of teaching Fundamental Motor Skills in the Wa Municipality, Independent samples *t*-test was used as an effective inferential statistical tool. Tables were also used to present the descriptive and inferential aspects of the study to enable the **r**esearcher achieved the stated objectives. Data observation schedules were coded and related information grouped together.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

This part presents the analysis of the data gathered from physical education teachers from basic schools in the Wa Municipality. This chapter also sectioned into two parts. The first section deals with the descriptive analysis of the socio-demographic background characteristics of physical education teachers and the second part presents results and discussion based on the selected objectives.

4.1 Socio-Demographic Background Characteristics of Respondents

In order to assess the teaching of selected fundamental motor skills in basic schools in the Wa Municipality, demographic background characteristics were conducted. This includes the ages, gender, highest academic qualifications and length of service of the respondents as indicated in Table 4.1 below.

Table 4.1: Demographics characteristics of the respondents

Demographic		Frequency	Percentage
Age	18-29 yrs	33	30.3
	30-39 yrs	44	40.4
	40-49 yrs	11	10.1
	50 and above	21	19.3
	Total	109	100.0
Gender	Male	88	80.7
	Female	21	19.3
	Total	109	100.0
Academic qualification	Diploma/Certificate A	61	56.0
	First Degree	35	32.1
	Masters	4	3.7
	Other Professional	9	8.3
	Total	109	100.0
length of service	1-5 yrs	35	32.1
	6-10 yrs	25	22.9
	11-15 yrs	15	13.8
	16-20 yrs	11	10.1
	21 yrs and above	23	21.1
	Total	109	100.0

Source: Field Work, 2022

The results as shown in table 4.1. above indicates that majority 88 (80.7%) of the physical education teachers were male and minority 21 (19.3%) of the physical education teachers were females. This shows that there was gender inequality among physical education teachers. Again, table 4.1 illustrates that 33 (30.3%) of the respondents were within 18-29 years, 44 (40.4%) of the respondents were within 30-39 years, 11 (10.1%) of the respondents were within 40-49 years and 12 (19.3%) of them above 50 years. It can be concluded that majority of the physical education teachers used in the research were between the ages of 18-29years. Moreover, majority of the physical education teachers in table 4.1 were Diploma/Certificate A holders 61 (56.0%), followed by First Degree of 35 (32.1%), followed by master's degree of 4 (3.7%), and 9 (8.3%) were for Other Professional, in respect of their educational qualification distribution. This shows that physical education teachers in the municipality have professional Basic Educational qualifications. The table 4.1 indicates the distribution of physical education teachers' length of service in professional practice. It shows that 35 (32.1%) have had 1-5 years of service representing the majority, followed by 25 (22.9%) of them between 6-10 years of service, 15 (13.8%) of them have had 11-15 years of service in the work, followed by 11 (10.1%) of them 16-20 years of service in the work while 23 (21.1%) of them have had 21-40 years of service. Their length of service show that the classroom P.E. teachers have quite reasonable experience in the job fields which will guide them to give out their fair information of the study matter.

4.2 Research Question One: What is the nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality?

With respect to this research question, the researcher was interested in finding out from the respondents the nature of fundamental motor skills that are taught in basic

schools in the Wa Municipality. To pinpoint the nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality, three questions were raised by the researcher to solicit information using the Likert scale method. The results on nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality is shown in Table 4.2.

Table 4. 2: The nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality

NO.	Nature of Fundamental Motor Skills	Disagree	Neutral	Agree	Mean	SD
1.	Teaching of manipulative skills like throwing, catching, kicking, and volleying in practical P. E. lessons	27(24.8%)	2(1.8%)	80(73.4%)	2.486	.867
2.	Teach locomotor skills like walking, running, hopping, galloping, jumping and sliding in practical P. E. Lessons	29(26.6%)	3(2.8%)	77(70.6%)	2.440	.886
3.	Teach non-locomotor skills like twisting, curling, stretching, bouncing and bending in practical P. E. lessons	40(36.7%)	0.0%	69(63.3%)	2.266	.968

Source: Field Work, 2022

The results as indicated in table 4.2 revealed that indeed one of the characteristics of teaching Fundamental Motor Skills in basic schools in the Wa Municipality is the teaching of manipulative skills like throwing, catching, kicking and volleying in practical P. E. Lessons. This came to light when 80 (73.4%) of respondents agreed with the assertion that they teach manipulative skills during their P. E. lessons which entailed teaching the pupils skills like throwing, catching, kicking and volleying. 27 (24.8%) of the respondents were however of an opposing view, they disagreed that

they taught such manipulative skills during their lessons while 2 (1.8%) of them undecided that they taught such manipulative skills during practical education lessons. Again, the results as indicated in table 4.2 proved further to find out from the teachers whether in any way taught locomotive skills like walking, running, hopping, galloping, jumping and sliding in their practical P. E. lessons. Their responses pointed to the fact that indeed P. E. teachers in the Wa Municipality do teach locomotor skills like walking, running, hopping, galloping, jumping and sliding during their practical P. E. lessons. Out of the 109 respondents, 77 (70.6%) agreed that they were into the teaching of locomotor skills during their P. E. lesson, 3(2.8%) were neutral to the issue while 29(26.6%) disagree to the teaching of locomotor skills during their P. E. lesson. Furthermore, the results as indicated in table 4.2 show that non-locomotor skills like twisting, curling, stretching, bouncing and bending formed part of the nature of practical P. E. lessons in the Wa Municipality. The 109 respondents from the ten selected schools were therefore asked if the aforementioned locomotor skills formed part of their practical P. E. lessons in the school. More than half of the teachers, that is 69 (63.3%) agreed and indicated that such skills are part of the non-locomotor skills that formed part of their practical P. E. lessons while 40 (36.7%) disagreed. Again, the mean scores in the table 4.2 suggest that the most leading statement teachers' nature of Fundamental Motor Skills taught in the basic schools: Teaching of manipulative skills like throwing, catching, kicking, and volleying in practical P. E. lessons and teaching locomotor skills like waling, running, hopping, galloping, jumping and sliding in practical P. E. lessons, indicated mean scores of 2.48 and 2.44 with standard deviation 0.86 and 0.88 respectively. Again, in table 4.2, physical education teachers mean score on the nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality ranged from 2.48 to 2.26. All

the items had mean scores above 2.0, which indicate that respondents positively teach the Fundamental Motor Skills in the basic schools in the Wa Municipality.

4.3 Research Question Two: What are the methods adopted by teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality?

The second research question was aimed at finding out from the respondents the methods adopted by physical education teachers in the teaching of fundamental motor skills in basic schools in the Wa Municipality. Two main questions were asked using the Likert scale method in relation to the methods which centred on the use of demonstrations and the application of simulations during Physical Education lessons. The results of physical education teachers' methods adopted by teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality is shown in Table 4.3.

Table 4.3: The methods adopted by teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality

No.	Methods of Teaching	Disagree	Neutral	Agree	Mean	SD
1.	Demonstrate to students when teaching Fundamental Motor Skills	22(20.2%)	1(0.9%)	86(78.9%)	2.587	.807
2.	Apply simulation during my practical P. E. lessons	40(36.7%)	0(0.0%)	69(63.3%)	2.266	.968

Source: Field Work, 2022

In table 4.3, respondents were asked whether demonstration was part of their teaching methods with respect to Fundamental Motor Skills. Most of them, 86 (78.9%) agreed that demonstrations were part of their lessons, 1 (0.9%) undecided whilst the remaining 22 (20.2%) respondents disagreed. To a larger extent therefore, it can be said that demonstration to pupils when teaching Fundamental Motor Skills is one of the methods adopted by Physical Education teachers in basic schools in the Wa

Municipality. Another method that the researcher needed to find out whether it was among the methods employed by Physical Education teachers in their practical lessons was the use of simulations. More than half of the respondents 69 (63.3%) did indicate that they agreed with the assertion that they use simulation in their practical Physical Education lessons, 0 (0.0%) uncertain whilst the rest 40 (36.7%) indicated that they did not use simulations in their lessons. Overall, we understood that the averagely held of the physical education teachers 78 (71.5%) were agreement with the acknowledged method and minority of 31 (28.4%) were in disagreement with the identified methods adopted by physical education teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality. Again, the mean scores in the table 4.3 suggest the most leading method adopted by physical education teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality: "Demonstrate to students when teaching Fundamental Motor Skills" with the highest mean score of 2.58 standard deviation 0 .80.

4.3.1 The Sequence in which the components of Fundamental Motor Skills normally appear in pupil's development.

Finally, whether physical education teachers take into consideration the sequence in which the components of fundamental motor skills normally appear in pupil's development, a question was raised by the researcher to solicit information using the Likert scale method. The results of physical education teachers' sequence in which the components of Fundamental Motor Skills normally appear in pupil's development is shown in Table 4.4.

Table 4.4: The Sequence in which the components of Fundamental Motor Skills normally appear in pupil's development

No.	Fundamental Motor Skills Sequence	Disagree	Neutral	Agree	Mean	SD
1.	Consider the sequence in which the components of Fundamental Motor Skills normally appear in pupil's development.	45(41.3%)	0(0.0%)	64(58.7%)	2.174	.989

Source: Field Work, 2022

It was revealed in Table 4.4 that more teachers took into consideration the sequence in which the components of fundamental moto skills normally appear in pupil's development when it comes to practical Physical Education lessons. Out of the 109 respondents, 64 (58.7%) indicated that they agree with the assertion that they consider the sequence in which the components of Fundamental Motor Skills normally appear in pupil's development, 0 (0.0%) indicated that they are neutral whilst the rest of the respondents 45(41.3%) disagreed. It can therefore be concluded here that more than half of the Physical Education teachers of basic schools in the Wa Municipality consider the sequence in which the components of Fundamental Motor Skills normally appear in pupil's development.

4.4 Research Question Three: What are the challenges encountered by teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality?

The third research question was formulated by the researcher to find out from the respondents some of the challenges they encounter in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality. Three questions were raised by the researcher to solicit information using the Likert scale method. The results of physical education teachers' challenges encountered by teachers in the teaching of

Fundamental Motor Skills in basic schools in the Wa Municipality is shown in Table 4.5.

Table 4.5: Challenges in the teaching of Fundamental Motor Skills

No.	Challenges in the teaching of Fundamental Motor Skills	Disagree	Neutral	Agree	Mean	SD
1.	my school is well resourced (facilities) in the teaching of Fundamental Motor Skills	85(78.0%)	4(3.7%)	20(18.3%)	1.404	.783
2.	I seek help from friends and colleague teachers to teach Fundamental Motor Skills	37(33.9%)	0(0.0%)	72(66.1%)	2.321	.951
3.	I modify the tasks for pupils when they seem difficult	28(25.7%)	1(0.9%)	80(73.4%)	2.477	.878

Source: Field Work, 2022

A statement was formulated for the respondents to react to. In Table 4.5, most of them 85 (78.0%) disagreed to the assertion that their schools were well resourced in terms of facilities in the teaching of fundamental moto skills, 4(3.7%) were undecided while the remaining 20 (18.3%) physical education teachers however agreed to the assertion. This suggests that close to 80% of basic schools in the Wa Municipality lack the required facilities for the teaching of Fundamental Motor Skills. Based on the above, it can be concluded that indeed there are inadequate facilities for the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality.

There is dependence by P.E. teachers on physical education friends and colleague teachers when it comes to the teaching of Fundamental Motor Skills among basic schools in the Wa Municipality. This came to light when more than half of the sampled respondents indicated that they seek help from friends and colleague teachers to teach Fundamental Motor Skills. Out of the 109 respondents, 26 (52.5%) agreed another 72(66.1%) agreed to the assertion. The rest of the respondents who represent

37(33.9%) were of the view that they could handle the teaching of Fundamental Motor Skills without needing assistance from friends and colleague teachers. This is an indication that there is the need to run additional training and workshops on how to teach Fundamental Motor Skills for the Physical Education teachers of basic schools in the Wa Municipality.

One other problem that was revealed by the study was the fact that teachers of Physical Education in basic schools in the Wa Municipality are compelled to modify tasks for pupils when such tasks seem difficult for the pupils to execute. This is an indication that the pupils are faced with difficulty when it comes to the teaching of Fundamental Motor Skills. This could be attributed to the early mentioned concern about the lack of resources in the form of facilities which could be making it difficult for the pupils to execute basic tasks in Fundamental Motor Skills. Out of the 109 respondents, 80 (73.4%) indicated that they agreed with the assertion that they had to modify tasks for pupils, 1(0.9%) was neutral with the assertion whilst the remaining respondents 28(25.7%) disagreed to the assertion. For those who disagreed, it suggests their pupils were able to handle tasks in Fundamental Motor Skills, and there was therefore no need to modify the task for them. It can be concluded that the challenge in the teaching of Fundamental Motor Skills was inadequate facilities.

4.5 Research Question Four: What best practices can be adopted in teaching Fundamental Motor Skills in the Wa Municipality?

Six questions were raised by the researcher to elicit information from physical education teachers using the Likert scale method on the best practices that can be adopted in teaching fundamental motor skills in the Wa Municipality. The results of

physical education teachers' best practices adopted in teaching Fundamental Motor Skills in the Wa Municipality is shown in Table 4.6.

Table 4.6: Best practices that can be adopted in teaching Fundamental Motor Skills in the Wa Municipality

NO.	Best Practices	Disagree	Neutral	Agree	Mean	SD
1.	All basic schools should be provided with the required teaching aids like P.E. Textbooks	5(4.6%)	2(1.8%)	102(93.6%)	2.890	.438
2.	GES should include Fundamental Motor Skills in the school curriculum and treated as important as other school subjects	2(1.8%)	1(0.9%)	106(97.2%)	2.954	.285
3.	There is the need to intensify in-service training and workshops for P. E. Teachers	11(10.1%)	5(4.6%)	93(85.3%)	2.752	.626
4.	Teachers should be trained to specially handled Fundamental Motor Skills	13(11.9%)	9(8.3%)	87(79.8%)	2.679	.679
5.	P. E. lessons should be in the mornings and not when the sun is up	19(17.4%)	5(4.6%)	85(78.0%)	2.606	.770
6.	A standardized P. E. field should be constructed in all basic schools to enhance the teaching of Fundamental Motor Skills	8(7.3%)	12(11.0%)	89(81.7%)	2.743	.584

Source: Field Work, 2022

The results as indicated in Table 4.6 show that of physical education teachers best practices adopted in teaching Fundamental Motor Skills in the Wa Municipality. On the first statement on best practices: All basic schools should be provided with the required teaching aids like P.E. Textbooks, 5 (4.6%) of the respondents disagreed with the statement, 2 (1.8%) physical education teachers were uncertain with the issue at hand while 102 (93.6%) of the respondents agreed to the statement. On the second statement on best practices: GES should include Fundamental Motor Skills in the school curriculum and treated as important as other school subjects, 2 (1.8%) of the

respondents disagreed with the statement, 1 (0.9%) of the physical education teachers was neutral with the matter while 106 (97.2%) of the respondents agreed to the question. On the third statement on best practices: There is the need to intensify in-service training and workshops for P. E. Teachers, 11 (10.1%) of the respondents disagreed with the statement, 5 (4.6%) respondents were undecided with the issue while 93 (85.3%) of the respondents agreed to the issue. On the fourth statement on best practice: Teachers should be trained to specially handled fundamental motor skills, 13(11.9%) of the respondents disagreed with the statement, 9(8.3%) respondents were uncertain with the issue at hand while 87(79.8%) of the respondents agreed to the statement. On the fifth statement on best practice: P. E. lessons should be in the mornings and not when the sun is up, 19(17.4%) of the respondents disagreed with the statement, 5(4.6%) physical education teachers were neutral with the issue at hand while 85(78.0%) of the respondents agreed to the issue. On the sixth statement on best practice: A standardized P. E. field should be constructed in all basic schools to enhance the teaching of fundamental motor skills, 8(7.3%) of the respondents disagreed with the statement, 12(11.0%) of the respondents were uncertain with the statement while 89(81.7%) of the respondents agreed to the issue. Overall, we understood that widely held of the physical education teachers, 34 (91.9%) were agreed with acknowledged statements, followed by neutral 3 (6.75%) and only one of them 1(1.35%) disagreed with the physical education teachers' best practice adopted in teaching fundamental motor skills in the Wa Municipality. Again, the mean scores in the table 4.6 suggest that the most leading statement about teachers' best practice: GES should include Fundamental Motor Skills in the school curriculum and treated as important as other school subjects and all basic schools should be provided with the required teaching aids like P.E. Textbooks, had the

highest mean scores 2.95 and 2.89 and standard deviation 0.28 and 0.43 respectively**.** Again, table 4.6, physical education teachers mean score on best practices adopted in teaching fundamental motor skills in the Wa Municipality ranged from 2.60 to 2.95. All the items had mean scores above 2.0, which indicate that respondents had positive best practices adopted in teaching fundamental motor skills in the Wa Municipality.

Again, from the results shown in table 4.7, the researcher tried to find out whether there is gender-wise significant difference in Physical education teachers' method adaptation for the teaching Fundamental Motor Skills in the Wa Municipality.

Table 4.7: Independent Samples t-test for methods for the teaching Fundamental Motor Skills

Methods	**Male (88)**		**Female (21)**		***df***	***t***	***p***
	M	**SD**	**M**	**SD**			
Demonstrate to students when teaching FMS	2.93	0.37	1.14	0.48	107	18.95	0.00
Apply simulation during practical P. E. lessons	2.57	0.83	1.00	0.00	107	8.65	0.00
Overall	2.75	0.6	1.07	0.24	107	13.8	0.00

Source: Field Work, 2022

From the results shown in Table 4.7, Independent samples *t*-test was used to differentiate the Physical education teachers' methods of teaching Fundamental Motor Skills in the Wa Municipality based on gender. The result shows significant difference in overall methods adopted by physical education teachers in the teaching of Fundamental Motor Skills in basic schools of male physical education teachers and female physical education teachers as the mean and standard deviation scores of male respondents M=2.75, SD=0.6> M=1.07, SD=0.24 female teacher participants as t (107) = 13.8, $p < 0.001$, rejected the null hypothesis at two tailed). Hence, it is determined that male physical education teachers had strong adaptation of the

methods for teaching of Fundamental Motor Skills as compared to female physical education teachers. Similarly, significant difference is found in gender-based two dimensions of methods adopted for the teaching of fundamental motor skills: demonstrate to students when teaching Fundamental Motor Skills; and apply simulation during practical Physical Education lessons) as p-value < 0.05 i.e., t (107) = 18.95, $p < 0.001$ and t (107) = 8.65, $p < 0.001$ respectively.

4.6 Observation

The results of observation made during practical lessons conducted by a physical education teacher from Fongo Primary School and a physical education teacher from Jujeidayiri Block "A" Primary School are indicated in Table 4.8 below.

Table 4.8: Observation of a sample physical education practical lesson

SN	Laboratory Practice activity	Remarks	
		Fongo Primary School	Jujeidayiri Blk "A"
1	Teacher set up practical P. E. lessons for pupils	√	√
2	Teacher gives clear explanation on manipulative skills before practical P. E. lessons	√	√
3	Teacher teaches manipulative skills like throwing, catching, kicking, and volleying in practical P. E. lessons	√	√
4	Teacher teaches locomotor skills like waling, running, hopping, galloping, jumping and sliding in practical P. E. Lessons	√	√
5	Teacher teaches non-locomotor skills like twisting, curling, stretching, bouncing and bending in practical P. E. lessons	√	√
6	Teacher provides enough items/equipment during practical P. E. lessons	√	√
7	Pupils work in group during practical P. E. lessons	×	×
8	Teacher marks pupils' work and provide immediate feedback	×	√
9	Teacher guides pupils during P.E. practical lessons	√	√
10	Pupils follow rules, regulations and guidelines during P.E. practical lessons	√	×
11	Pupils are given stipulated time to complete tasks	×	×
12	Pupils use the right equipment during practical lesson	√	√
13	Teacher checks the step-by-step criteria in performing an activity	√	√
14	Teacher supervises pupils while performing practical tasks	√	√

Source: Field Work, 2021

From Table 4.8, respondents from the two categories of schools performed 92 % of the practical activities. Activity 5 was not performed by the participants from both

categories of schools. The physical education teacher from Fongo Primary School failed to mark students work and so never provided feedback to students (Item 8). The physical education teacher from an Jujeidayiri Block "A" failed to help students to follow rules, regulations and guidelines during physical education practical lesson (Item 10) and also failed to give students sufficient time to complete task given to them (Item 11). The physical education teachers from the two basic schools carried out practical lessons for pupils, guided pupils during practical lessons, gave clear explanation before practical work, and provided enough materials during practical lessons.

4.7 Discussion of Results

To appreciate the context in this research, several points need to be discussed. The study assessed the teaching of some selected Fundamental Motor Skills (kicking, catching, hopping and running) in basic schools in the Wa Municipality. The study revealed that the number of male physical education teachers were 67 % more than their female counterparts. The physical education teachers had varied years of service in skilled practices with most classroom physical education teachers (32.1 %) having served 1-5 years of professional practices and above. Most respondents (70 %) were above 30 years of age. It was found that greater proportion of the teachers were professional teachers with Diploma degree in Basic Education. and this is in line with the assertion that the fundamental motor skills shortly known as (FMS) could significantly be improved in children with and without delay when only delivered by an expert in such field (Kirk & Rhodes, 2020). This accounted for the high competency level of physical education teachers' in assessing the teaching of some selected Fundamental Motor Skills (kicking, catching, hopping and running) in basic schools in the study area.

The quantitative findings revealed that the nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality were the teaching of manipulative skills like throwing, catching, kicking, and volleying and teaching of locomotor skills like walking, running, hopping, galloping, jumping and sliding in practical P. E. Lessons. Jaakkola (2010) argued positively that when these basic skills are taught and adopted at young age are the base for a long-term impact in life. For being a skilled mover, the control of the locomotor movements and basic manipulative skills are required as the foundational knowledge (Colvin et al., 2016).

The study discovered that the method adopted by physical education teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality was demonstration. The finding of this study is in parallel with the study conducted by Daniaa et al. (2010) as they discovered that Dual Coding Theory as a new and best method for the teaching of fundamental motor skills that will be depended on a visual coding of movement information. Garn and Byra (2002) however are of the view that effective physical education teachers are those who not only master a wide variety of teaching styles and methods, but are also able to manipulate them so as to increase students' learning in all the dimensions of the curriculum.

The results indicated that more than half of the Physical Education teachers of basic schools in the Wa Municipality consider the sequence in which the components of Fundamental Motor Skills normally appear in pupil's development. The finding of this study is in support with the study carried by Nuridin et al. (2021) among kindergarten pupils' teachers in Indonesia where students are required to follow the entire program content and practical sequences so that the intervention results are successful. It takes the teacher's ability to manipulate students so that students are

motivated and active in the implementation of learning. Manipulation can be done by interacting by involving students in the learning process, using fun learning methods, interesting learning tools, giving attention when learning to all students. Gallahue (2000) cautioned that it is important to understand the individuality of the learner when considering the sequence in which the components of Fundamental Motor Skills development. Each person has their own timetable to acquire movement skills and abilities, and the development process is only age-related.

The study revealed also that poor, lack or inadequate facilities was the challenge that physical education teachers faced in the teaching of Fundamental Motor Skills in basic schools in the Municipality. This confirms Toyryla (2019) suggestion that the challenges Physical Education faces these days in the teaching of Fundamental Motor Skills, are negative attitude towards it, the lack of teachers, equipment, and modern facilities.

Qualitative findings revealed that male physical education teachers had strong adaptation of the methods for teaching of Fundamental Motor Skills as compared to female physical education teachers. Independent samples *t*-test was used (Table 4.7) to differentiate the Physical education teachers' methods of teaching Fundamental Motor Skills in the Wa Municipality based on gender. The result shows significant difference in overall methods adopted by physical education teachers in the teaching of Fundamental Motor Skills in basic schools of male physical education teachers and female physical education teachers as the mean and standard deviation scores of male respondents M=2.75, SD=0.6> M=1.07, SD=0.24 female teacher participants as t (107) = 13.8, $p < 0.001$, rejected the null hypothesis at two tailed).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter involves three parts. The first subdivision presents a summary of the research findings. The second and third sections present respectively the conclusions drawn from the research and recommendations put forward.

5.2 Summary of the Study

This study sought to assess the teaching of selected fundamental motor skills in basic schools in the Wa municipality. The chapter one of this study presented general information on teaching of selected fundamental motor skills in basic schools in the Wa municipality. This chapter likewise presented the problems that necessitated the conduct of this study. It outlined the objectives and the significance of the study. Furthermore, the terms used in this paper were clearly defined.

The chapter two of the study reviewed the extant literature on these sub-topics: Theoretical frame work, Conceptual frame work, the nature of Fundamental Motor Skills, the methods of teaching Fundamental Motor Skills, attitude of teachers towards the teaching of physical education, Fundamental Motor Skills taught in schools in the Wa Municipality, the importance of fundamental motor skills, challenges of learning fundamental motor skills.

The chapter three deliberated on the research design, research method, population, sampling, research instrumentation, data collection technique, limitation, delimitation, data analysis procedure, validation of instruments and ethical consideration.

The chapter four of this study analysed the nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality, the methods adopted by teachers in the teaching of Fundamental motor Skills in basic schools in the Wa Municipality, the challenges encountered by teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality and the best practices that can be adopted in teaching Fundamental Motor Skills in the Wa Municipality?

The Chapter five summarized, concluded and made recommendations of this study based on the set objectives.

5.2.1 Summary of the Main Findings

An important part of physical education programme is the teaching of the fundamental motor skills, such as running, leaping, walking, and stepping. These skills form the building blocks for the more specific sports skills learned at later developmental stages or which under pin the learning of more complicated fundamental motor skills common to the community. Concerning the fallouts from the data, which was obtained from the field, the results of this study were as follows:

1. The study established that the nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality are the teaching of manipulative skills like throwing, catching, kicking, and volleying and teaching of locomotor skills like waling, running, hopping, galloping, jumping and sliding in practical P. E. Lessons.
2. The study found that the most leading method adopted by physical education teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality*:* Demonstrate to students when teaching Fundamental Motor Skills. Again, the study concluded here that more than half of the Physical

Education teachers of basic schools in the Municipality consider the sequence in which the components of Fundamental Motor Skills normally appear in pupil's development. This is in support to (NaCCA, 2019) that the use of differentiation and scaffolding, demonstration as teaching and learning strategies for ensuring that no learner is left behind.

3. The study found that the challenge physical education teachers faced in the teaching of Fundamental Motor Skills in basic schools in the Municipality was poor, lack or inadequate facilities for the teaching. It consisted of five main domains (i.e., increased numbers of the students in the classroom; abilities, devices/instruments, and equipment; content of the academic curriculum; the school environment; and the school management).
4. The study also revealed that Ghana education service should include effectively fundamental motor skills in the basic school curriculum. Educational institutions and services should include fundamental motor skills in the school curriculum, provided with the required teaching aids like P.E. Textbooks and treated as important as other school subjects.
5. The again revealed that male physical education teachers had strong adaptation of the methods for teaching of Fundamental Motor Skills as compared to female physical education teachers.

5.3 Conclusion

The following conclusions are made based on the research outcome concerning the stated objectives.

1. The study revealed that the nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality are the teaching of manipulative skills like throwing, catching, kicking, and volleying and teaching of locomotor

skills like waling, running, hopping, galloping, jumping and sliding in practical physical education lessons.

2. The study discovered that the method adopted by physical education teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality was demonstration technique. Again, the study concluded here that more than half of the Physical Education teachers of basic schools in the Municipality consider the sequence in which the components of Fundamental Motor Skills normally appear in pupil's development.
3. The study revealed that poor, lack or inadequate facilities was the challenge that physical education teachers faced in the teaching of Fundamental Motor Skills in basic schools in the Municipality.
4. The study also revealed that Ghana education service should include effectively fundamental motor skills in the basic school curriculum. Educational institutions and services should include fundamental motor skills in the school curriculum, provided with the required teaching aids like P.E. Textbooks and treated as important as other school subjects.
5. The study also identified significant difference in overall methods adopted by physical education teachers in the teaching of Fundamental Motor Skills in basic schools of male physical education teachers and female physical education teachers as the mean and standard deviation scores of male respondents M=2.75, SD=0.6> M=1.07, SD=0.24 female teacher participants as t (107) = 13.8, $p < 0.001$, rejected the null hypothesis at two tailed). Hence, it is determined that male physical education teachers had strong adaptation of the methods for teaching of Fundamental Motor Skills as compared to female physical education teachers.

5.4 Recommendations

Based on the study's findings, the following recommendations are made:

1. The Wa Municipal Directorate of Education, in collaboration with the Wa Municipal Assembly and other pertinent stakeholders, should incorporate fundamental motor skills into the school curriculum and treated as important as other school subjects.
2. All basic schools should be provided with the required teaching aids like P.E. Textbooks and sporting equipment by Wa Municipal Directorate of Education in collaboration with the Wa Municipal Assembly. It is recommended providing the decision makers in the basic schools with an overview of the primary results to find the appropriate solutions for the challenges which the Physical Education Teachers faced.
3. There is a need for a collaborative effort between the Wa Municipal Directorate of Education and the Wa Municipal Assembly in order to enhance awareness and skills related to fundamental motor skills. This can be achieved through the provision of in-service training or additional courses for classroom physical education teachers in their clusters. This initiative should particularly target teachers with many years of experience and those who encounter challenges in staying abreast of contemporary educational matters.
4. A standardized physical education fields should be constructed in all basic schools by the Wa Municipal Assembly to enhance and practicalise the teaching of fundamental motor skills.
5. It is imperative for all basic school head teachers in the Wa Municipality to prioritise Physical Education lessons during the mornings or evenings hours, rather than when the sun is up.

5.4.1 Recommendation for further Studies

Discussion of the inquiry-based instructional model together with other models that differ from direct instruction in the teaching of fundamental movement skills will contribute to the literature. By combining models for the instruction of physical education and sport, educational experiments can be made in line with different course objectives.

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APPENDIX A

QUESTIONNAIRES FOR PHYSICAL EDUCATION TEACHERS

SECTION A: BIOGRAPHICAL DATA

Age: 18-29 yrs [ ] 30-39 yrs [ ] 40-49 yrs [ ] 50 and above [ ]

Gender: Male [ ] Female [ ]

Academic Qualification: Diploma/Certificate A [ ] First Degree [ ]
Masters [ ] Other Professional [ ]

Length of Service: 1-5 yrs [ ] 6-10 yrs [ ] 11-15 yrs [ ] 16-20 yrs [ ]
2-40 yrs [ ]

SECTION B: What is the nature of Fundamental Motor Skills taught in the basic schools in the Wa Municipality

SN	Items	Disagree	Neutral	Agree	Researcher's use only		
1.	Teaching of manipulative skills like throwing, catching, kicking, and volleying in practical P. E. lessons						
2.	Teach locomotor skills like waling, running, hopping, galloping, jumping and sliding in practical P. E. Lessons						
3.	Teach non-locomotor skills like twisting, curling, stretching, bouncing and bending in practical P. E. lessons						
SECTION D: What are the methods adopted by teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality							
4.	Demonstrate to students when teaching Fundamental Motor Skills						
5.	Apply simulation during my practical P. E. lessons						
6.	Consider the sequence in which the components of Fundamental Motor Skills normally appear in pupil's development						

SECTION E: What are the challenges encountered by teachers in the teaching of Fundamental Motor Skills in basic schools in the Wa Municipality							
7.	My school is well resourced (facilities) in the teaching of Fundamental Motor Skills						
8.	I seek help from friends and colleague teachers to teach Fundamental Motor Skills						
9.	I modify the tasks for pupils when they seem difficult						
SECTION E: What best practices can be adopted in teaching Fundamental Motor Skills in the Wa Municipality							
10	All basic schools should be provided with the required teaching aids like P.E. Textbooks						
11	GES should include Fundamental Motor Skills in the school curriculum and treated as important as other school subjects						
12	There is the need to intensify in-service training and workshops for P. E. Teachers						
13	Teachers should be trained to specially handled Fundamental Motor Skills						
14	P. E. lessons should be in the mornings and not when the sun is up						
15	A standardized P. E. field should be constructed in all basic schools to enhance the teaching of Fundamental Motor Skills						

OBSERVATION SCHEDULE

SN	Practical lesson activity	Remarks	
		Fongo Primary School	Jujeidayiri Block "A"
1	Teacher set up practical P. E. lessons for pupils		
2	Teacher gives clear explanation on manipulative skills before practical P. E. lessons		
3	Teacher teaches manipulative skills like throwing, catching, kicking, and volleying in practical P. E. lessons		
4	Teacher teaches locomotor skills like waling, running, hopping, galloping, jumping and sliding in practical P. E. Lessons		
5	Teacher teaches non-locomotor skills like twisting, curling, stretching, bouncing and bending in practical P. E. lessons		
6	Teacher provides enough items/equipment during practical P. E. lessons		
7	Pupils work in group during practical P. E. lessons		
8	Teacher marks pupils' work and provide immediate feedback		
9	Teacher guides pupils during P.E. practical lessons		
10	Pupils follow rules, regulations and guidelines during P.E. practical lessons		
11	Pupils are given stipulated time to complete tasks		
12	Pupils use the right equipment during practical lesson		
13	Teacher checks the step-by-step criteria in performing an activity		
14	Teacher supervises pupils while performing practical tasks		

APPENDIX B

Overall Reliability Statistics for the questionnaire

Cronbach's Alpha	N of Items
.616	15

Cronbach's Alpha = 0.616 indicate acceptable

Overall Item-Total reliability Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Teaching of manipulative skills like throwing, catching, kicking, and volleying in practical P. E. lessons	18.98165	13.426	.795	.	.482
Teach locomotor skills like waling, running, hopping, galloping, jumping and sliding in practical P. E. Lessons	19.02752	13.027	.847	.	.466
Teach non-locomotor skills like twisting, curling, stretching, bouncing and bending in practical P. E. Lessons	19.20183	12.514	.844	.	.454
Demonstrate to students when teaching FMS	18.88073	14.532	.658	.	.520
Apply simulation during my practical P. E. lessons	19.20183	12.329	.877	.	.445

Consider the sequence in which the components of FMS normally appear in pupil's development.	19.29358	12.432	.835	.	.454
My school is well resourced (facilities) in the teaching of FMS	20.06422	24.709	-.782	.	.748
I seek help from friends and colleague teachers to teach FMS	19.14679	24.386	-.645	.	.756
I modify the tasks for pupils when they seem difficult	18.99083	23.546	-.597	.	.738
All basic schools should be provided with the required teaching aids like P.E. Textbooks	21.31193	17.883	.395	.	.593
GES should include FMS in the school curriculum and treated as important as other school subjects	21.36697	18.197	.366	.	.599
There is the need to intensify in-service training and workshops for P. E. Teachers	21.36697	18.197	.366	.	.599
Teachers should train to specially handled FMS	21.20183	17.570	.394	.	.588
P. E. lessons should be in the mornings and not when the sun is up	21.33028	17.964	.392	.	.594
A standardized P. E. field should be constructed in all basic schools to enhance the teaching of FMS	21.18349	17.485	.407	.	.586

Independent Samples t-Test

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
demonstrate to students when teaching FMS	Male	88	2.93182	.365005	.038910
	Female	21	1.14286	.478091	.104328
apply simulation during my practical P. E. lessons	Male	88	2.56818	.827619	.088224
	Female	21	1.00000	.000000	.000000

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
demonstrate to students when teaching FMS	Equal variances assumed	2.204	.141	18.953	107	.000	1.788961	.094389	1.601845	1.976077
	Equal variances not assumed			16.066	25.836	.000	1.788961	.111348	1.560012	2.017910
apply simulation during my practical P. E. lessons	Equal variances assumed	43.241	.000	8.652	107	.000	1.568182	.181243	1.208889	1.927474
	Equal variances not assumed			17.775	87.000	.000	1.568182	.088224	1.392826	1.743537