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Master's Thesis of Global Sport Management

**The effect of Physical Education
models, on the student's satisfaction
and motivation to participate in
Physical Education among high school
students in Sudan**

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체육교육과 글로벌스포츠매니지먼트

Rana Moawia Mohamed Osman



이 논문은 문화체육관광부와 국민체육진흥공단 지원을 받아 수행된 연구임
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The effect of Physical Education models, on the student's satisfaction and motivation to participate in Physical Education among high school students in Sudan

Advisor: LEE Chung Gun

Submitting a master's thesis of Global Sport Management

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The Graduate School
Department of Physical Education
Seoul National University
Global Sport Management Major

Rana Moawia Mohamed Osman

Confirming the master's thesis written by

Rana Moawia Mohamed Osman

August 2023

Chair	<u>Lee, Okseon</u> (Seal)
Vice Chair	<u>Kim, Yukyoum</u> (Seal)
Examiner	<u>Lee, Chung Gun</u> (Seal)

Abstract

The effect of Physical Education models, on the student's satisfaction and motivation to participate in Physical Education among high school students in Sudan

Rana Moawia Mohamed Osman

Global Sport Management, Department of Physical Education

The Graduate School

Seoul National University

The goal of Physical Education is to encourage students to develop positive lifelong habits that will improve their overall health. Attitudes toward PE are more positive when the student is more driven, and fulfilled, and thus assigns it a higher priority (Ardoy et al., 2010).

The purpose of this study was to explore the effect of Physical Education models (multi-activity model and sports education model) on the motivation and satisfaction among high school students in Sudan, as well as

explore the relationship that exists among the curricular models of Physical Education and the satisfaction levels among the high school students on their resultant motivation to participate in physical Education.

The study used a quantitative research method, a survey was filled by 150 students from four high schools two international schools, and two private schools. The selected international schools were following the sports education model, with a number of 71 students, 23 were male and 48 were female. While the private schools were following the multi-activity model with a number of 82 students, 38 were male and 44 were female.

This study used Statistical Analysis Software (SAS) to analyze the data, a means comparison was done in order to determine which model motivate and satisfy the students more, and a multivariable regression was run for the various independent variables to analyze the impact of gender, grade and the Physical Education model type.

The results revealed that the sports education model had the highest mean of student satisfaction and motivation toward PE, with a mean of 4.0187($s=1.5232$) and 4.0785($s=1.5313$), respectively, when compared to the multi-activity model, which had a mean of 3.6260($s=1.65$) and 3.7256($s=1.0808$). In addition to the existence of statistically significant

interaction among the Physical Education model, students' satisfaction, grade, and gender of the students in Physical Education, as a 57.86% change in the levels of motivation is explained by the changes in all six variables. In other words, the findings indicated that students who participated in the Sport Education model exhibited high levels of motivation in Physical Education and expressed greater satisfaction with the subject. Conversely, students who followed the multi-activity model displayed low motivation and consequently reported lower satisfaction.

Keywords: Physical Education, students' motivation and satisfaction, sport education, multi-activity

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Chapter 1. Introduction

1.1. Background

The significance goal of Physical Education is to encourage students to develop a positive lifelong habit that will enhance their general health (Arday et al., 2010).

As facilitating students to adopt and appreciate physical active lifestyle is one of the main objectives of Physical Education subject (SHAPE America Society of Health and Physical Educators America, 2014). Progress toward this objective can be measured in a variety of ways, including enhanced exercise skill and knowledge among students, enjoyment with physical activity, and re-enrolment in physical education classes. The overarching objective of physical education (PE) is for students' experiences in PE class to positively influence their engagement in and enjoyment of physical activity (PA) outside of school. Students are more likely to be active for intrinsic reasons and to continue being active after PE if they like physical activity more (Ryan & Deci, 2006).

In physical education, motivation is a significant aspect that may influence the outcomes since great learning successes are frequently

attributed to students' high motivation and circumstances that promote motivation (Zomeño et al., 2013).

When learners are satisfied and motivated, they likely to have fun and enjoy practicing the activity, as compared to when they are bored or do not enjoy practicing it.

According to Ntounamis (2005), when students are genuinely motivated, they participate actively in Physical Education programs and even engage in physical exercise in their free time. Similarly, when students are satisfied and enjoying what they are doing, they tend to give it a higher priority than other related tasks, so becoming more driven to complete it. Thus, according to Moreno et al. (2006), attitudes about P.E. are more favourable when the student is more driven, more fulfilled, and so assigns it a higher priority.

Understanding the motivational profiles of students, as well as their goals, happiness, and even the importance and value they place on Physical Education, can influence the teaching task in education if the teacher defines rules or keys for structuring the work. The acquisition of physical activity habits may be influenced by the necessity of analysing the motivation of high school PE students, including the degree of satisfaction, importance, and

usefulness expressed by the student. It was thus expected that the majority of self-determined motivational profiles in P.E. will contain satisfaction, the significance and utility of the subject, as well as increased weekly physical exercise practice.

Sudan is one of the countries where Physical Education is offered from kindergarten throughout to high school. It is taught during school time like any other subject that is taught in schools. According to the Ministry of Education in Sudan, Physical Education is a subject that must be taught in all schools (Democratic republic of Sudan, 1978).

It is acknowledged that to accomplish the objectives of the program, a diverse range of activities must be incorporated into the curriculum. However, not all students participate in the PE lessons. According to Democratic republic of Sudan (1978) classes are not structured to lay out a progressive (sequential) model of learning skills in addition to the poor usage of the available spaces and facilities and there is no grading scheme for the subject.

In recent years, Sudanese schools have suffered from weak innovation and interactive Physical Education programs that have directly affected the motivation and satisfaction level of the students towards the subject.

Since the colonial era, the Ministry of Education has facilitated the teaching of PE in schools, as it is important to build students physically and mentally. However, to achieve this there is need to ensure that the school's Physical Education syllabus is well defined to achieve the desired objectives (Hamdi, 2016).

Sudan is famous for its diversity and vast land as it is ranked as the third largest state on the African continent. It has a majority of Muslims who make up 97% of the total population. The majority of them speak Arabic while the other minorities, represent around 3%. There are also 150 ethnic groups and tribes that embrace various religions each one has its own code of communication and settled in different areas.

The population of Sudan was estimated around 39 million in 2014 and the majority of people are living in the country side whereas one-third dwell in rural areas. The youth population was estimated at 41%, and among them 20% are aged between 15 and 24.

In addition, the annual growth rate was about 2.1% in 2014 and it was reported that there was high fertility rate as every woman gave birth to 4 children. Furthermore, there is an expected increase in the population if this trend continues, According to predictions, Sudan's population will be around

56,442,992 in 2030, with 50.2% male and 49.8% female. (World Population Review, 2016).

Although there have been a lot of developments in Sudan that have affected the education system and have brought a lot of changes in the way education is offered Physical Education remains one of the important subjects in the curriculum.

Physical Education is offered in public, private, and international schools. These institutions follow different models when delivering the subject to the learners. For instance, in public and most of the private schools they follow the multi-activity model, while international and some private schools might be using different models like Sport Education Model and The Health-Based Physical Education model (Curtner & Smith, 2001).

1.2. Problem statement

Physical Education is an essential subject in all the schools, it's a subject that bring the joy and the fun to the students in every school, one of the goals of this subject is to break the seriousness of other subjects like math, science, chemistry. Physical Education is an escape and breath for the majority of the students, therefore, it's important to ensure that all students are motivated and satisfied with the subject.

Many research have covered the Physical Education and the academic performance relationship in general but few have taken the matter of Physical Education from the perspective of the students.

Physical Education subject has been neglected by many of the schools in Sudan most of the schools don't consider making an effort to deliver the subject by the best way possible which automatically reduced the quality of the subject and led to make students to be dissatisfied and less motivated about the subject.

The status quo originates from the varies factors that may lead the students to get motivation to participate in the Physical Education lessons.

An effective Physical Education curriculum clearly conveys what the students will learn, how they will be taught, and how teachers and administrators would know whether the students have achieved the desired results. (Tinning & Kirk, 2004).

This research seeks to examine the relationship among the sport education model, multi-activity model and the student's satisfaction about PE on the motivation toward the subject.

1.3. Purpose of the study

The purpose of this study was to explore the effect of Physical Education models (multi-activity model and sports education model) on the motivation and satisfaction among high school students in Sudan and by considering gender and grade of the students as control variables, the study aimed to explore the influence of the multi-activity model and Sport Education model on the student's motivation to take part in Physical Education, the influence of the students Physical Education satisfaction on their motivation toward the subject and to find out the relationship among models, satisfaction, and motivation in Physical Education.

1.4. Significance of the study

Most schools in Sudan do not follow a specific program when offering Physical Education. But some international and private schools are an exception as they have well-developed programs and specialist PE teachers.

The study aims to explore the relationship among multi-activity model, sport education model and the student's satisfaction and how they influence motivation towards the subject.

To help the students to increase their motivation to participate actively in the subject and to enhance their experience.

There is little that has been covered on the relationship among the motivation for Physical Education and the Physical Education satisfaction of the students. Therefore, this study tries to reduce the gap at the same time help the decision-makers and other stakeholders in the education sector to review the Physical Education syllabus and come up with strategies that will help to improve the satisfaction and the motivation of the students.

The study will also be used as a baseline by other scholars to carry out related studies in this subject area and help to promote and increase mass participation in sports.

1.5. Research questions

RQ1. How sport education model and multi-activity model affect the students motivation and satisfaction in PE?

RQ2. How Multi-Activity model and Sport Education model affect students' motivation in PE after controlling of grade and gender?

RQ3. How students' satisfaction of PE affect their motivation to participate in the subject after controlling of grade and gender?

RQ4. What is the joint impact among multi-activity model, sport education model and PE satisfaction on the student's motivation to participate in PE?

Chapter 2. Literature review

2.1. Theoretical framework

2.1.1. Cognitive evaluation theory

Cognitive evaluation theory is mainly used to investigate motivation in educational contexts (Deci & Ryan, 1985, 1991). CET has four core concepts that aim to understand and predict an individual's intrinsic motivation.

In accordance with the first proposition behaviours that are intrinsically motivated are independent or self-directed (Ryan & Frederick, 1995). People' intrinsic motivation gets boosted as they take part in actions that provide them a sense of overseeing how they achieve their goals. Individuals' inner motivation is likely to decrease when they engage in an activity where they feel externally controlled.

Goudas, Biddle, Fox, and Underwood (1995) examined this theory in a physical education class utilising several teaching techniques. Participants perceived motivation level when their teacher gave them options throughout the course, as opposed to making every decision for the class. Similar findings have been documented in another research (Deci et al., 1985). Therefore, and

according to this theory the teaching style is might highly affect the student's motivation.

According to the second proposition Feelings of competence and appropriate challenge boost intrinsic motivation Competence relates to how students perceive themselves in relation to specific life domains (e.g., physical abilities), whereas optimal challenge refers to situations in which the difficulty of an activity is proportional to children's skills (Weiss & Bressan, 1985).

Deci (1975) originally emphasised the significance of optimal challenge by proposing that individuals are motivated to seek out ideally demanding situations because they are self-directed and capable. When youngsters are ideally engaged by an activity, they are more expected to enjoy it and devote more time in it, according to prior studies (Danner & Lonky, 1981; Harter, 1974).

According to the third proposition the functional impact of extrinsic and intrinsic elements along a continuum of their influence on intrinsic drive (Deci & Ryan, 1994).

Variables that would provide positive and constructive feedback regarding an individual's perceived competence enhance intrinsic motivation, while external factors that are controlling or motivating (i.e., that give the impression of ineptitude and helplessness) undercut intrinsic drive.

Orlick and Mosher (1978) discovered that when prizes were used to influence students behaviour, they were less inclined to keep doing the activity without rewards than students who originally engaged the activity without rewards.

However, not all rewards hinder intrinsic motivation. Ryan, Mims, and Koestner (1983) discovered that when participants got prizes that enlightened them of their talents, they were more intrinsically driven than when they given a controlled reward.

According to the fourth proposition, Individuals' mental orientation toward a certain task influences their intrinsic motivation. Task-involved individuals are more likely to be intrinsically driven because they engage in an activity for its own sake, whereas ego-involved individuals are less likely to be intrinsically motivated because they feel governed by an internal urge to maintain their self-esteem.

2.1.2. Process theory

This theory is explaining how people's motivation will increase when their expectations and needs fulfilled. This idea includes the process through which elements like as individuals' expectations, wants and values, and comparisons interact with their work activities to influence motivation.

It is dedicated in identifying how self-directed human cognitive processes inspire and sustain individual behaviour. Under process theory, a variety of motivation theories have a common focus on people's various needs and the cognitive processes behind these differences. (Lynne, 2012).

In these theories, emphasis is placed on the origins and reasons of people's behaviour, as well as the motivations that influence the intensity and direction of that behaviour. Vroom's expectancy theory, Adam's equity theory, Latham & Locke's goal-setting theory, and Skinner's reinforcement theory are the primary process theories of motivation.

In accordance with the above definitions, the Process Theory of Motivation explains that an individual's motivation arises when their cognitive process of expectations, wants, and values coincides with job-related elements. As reinforced by Sempene et al. (2002) in their definition of work satisfaction, people rate their occupations based on characteristics that are significant to their personalities.

Higher consistency between measured work-related criteria and an individual's cognitive components will initially lead to greater job satisfaction, followed by an increase in motivation.

Among the different Process theories of Motivation, the idea of satisfaction provides substantial support for Vroom's (1964) Expectancy theory and Adams' (1965) Equity theory. According to Expectancy theory, an employee's motivation is a result of the individual's desire for a reward (Value), the chance that the effort will lead to the anticipated performance (Expectancy), and the belief that the performance will lead to the desired reward (Belief) (Instrumentality).

On the other side, according to the Equity theory, people engage in ongoing social comparison by comparing their efforts and rewards to those of relevant others. Individuals' perceptions of the fairness of their

rewards compared to those of others influence their motivational levels. Fairness experienced by workers in the workplace will generate Job Satisfaction and subsequent Motivation. Directly, the two theories have the same conception that motivation is triggered by the fulfilment of either persons' expectations or fairness.

Clearly, there is a significant relationship between these two theories and the Cognitive Component of Job Satisfaction, since both have established the relevance of Job Satisfaction on an individual's job-related beliefs, expectations, and values in order to promote Motivation.

2.2. Curriculum

The curriculum in its broad sense is defined by Kelly (2009) as the whole accumulative knowledge and skills gained by students during the stage of studying in school. The term is frequently used to refer to a predetermined sequence of instruction or a perspective on the student's experiences in terms of the educational objectives of teachers or schools. A curriculum may include the intended engagement of students with instructional content, materials, resources, and systems for assessing the achievement of educational goals (Adams, & Kathy, 2003).

According to Smith, Dewey, and Kelly's readings, (Smith, et al. 2000), four types of curriculum might be identified:

Explicit curriculum: a clear curriculum outlines what to be taught in order to achieve the objectives of the school subjects, and the knowledge as well as abilities that successful pupils are expected to gain.

Implicit curriculum: Unintended curriculum, concepts that emerge from the school's culture and the behaviours, attitudes, and assumptions which characterize that environment.

Hidden curriculum: things that students develop as a result of how the school's function is planned and structured, but which are not outwardly included in the programming or perhaps in the consciousness of those accountable for the school settings (Kelly, 2009).

Excluded curriculum: subjects or views that are expressly excluded from the curriculum. Extracurricular activities might be an example of the excluded curriculum as its school-sponsored programs are designed to complement the academic part of the school environment as well as cultural events and activities (Hancock, et al., 2012). Academic clubs, sports, and cultural activities are an example of that.

2.2.1. Sudan local school's curriculum

According to The General Education Act, Arabic is recognized as the designated language for instructional purposes. The objectives of general education are formulated with the intention of gradually instilling religious ideals, beliefs, and morals in the youth, fostering national pride and cultural heritage, and promoting creativity and ambition. These objectives also aim to develop individuals' abilities and skills through technical training to fulfill the objectives of comprehensive development. (unesco-ibe, 2006).

The legislators made the law widely known by legalizing non-governmental education. The educational establishment has the right to teach the approved translation of the national syllabus in English and add extra materials to the national curriculum (unesco-ibe, 2010).

General education schooling lasts thirteen years and is composed of three main levels: The pre-primary level four year old children can be officially registered in pre-schools for two years. This level is not free or compulsory. The first compulsory type is the primary level which is obligatory for children from 6 to 13 years old. The period of this stage is eight years (Grade 1 to Grade 8) and it is ended with an exam-based Basic Education Certificate.

During the initial three years of primary school, the primary focus is on practical skills and life lessons, which encompass population, environment, and health education. The curriculum emphasizes thematic areas, such as a specific course titled "Man and the Universe," which integrates teachings in theology and science. The fundamental education cycle consists of five key subjects, including religion, mathematics, and language.

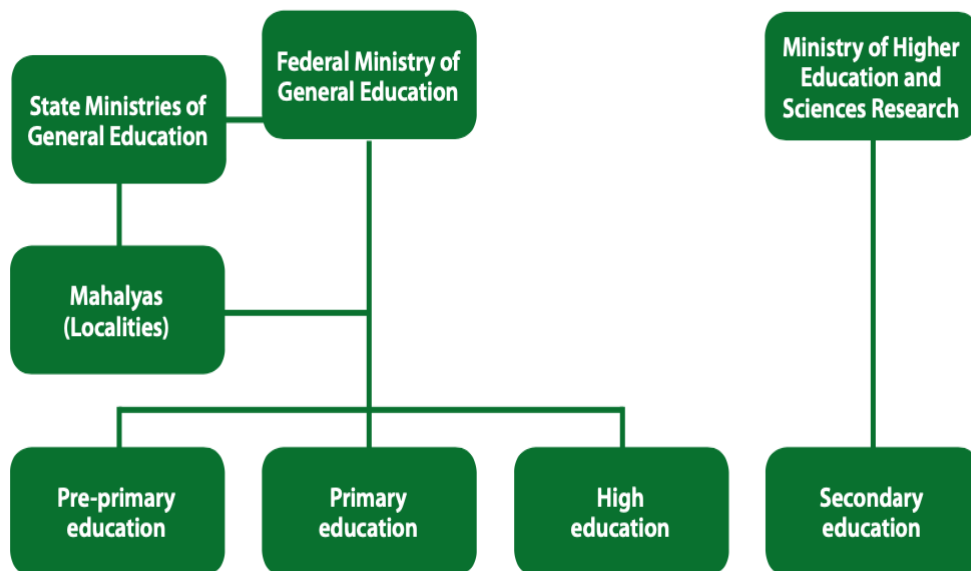
At the secondary level, students aged fourteen to sixteen have the opportunity to enroll in secondary education, which spans a duration of three years. This phase includes nine essential subjects, such as Islamic studies, English, history, and mathematics, alongside optional subjects like computers, agriculture, commercial science, and more. During the first two years, all students follow the same curriculum. However, in the final year, they must select either the arts or science track. Upon completion of the secondary level, students are required to take the Sudan School Certificate examination.

The third type is Higher education the policy development and service delivery for higher education are the responsibility of The Ministry of Higher Education and Scientific Research (MoHESR). Based on their performance

in the Sudan School Certificate examination, students have the opportunity to gain admission into five different types of institutions: public universities, public technical colleges, private universities, philanthropic universities, and private colleges. Their results in the examination serve as the basis for eligibility into these institutions. Refer to figure 1.

Figure 1.

Sudan local schools' curriculum



Source: Information collected by UNESCO in October 2016.

2.2.2. International schools' curriculum

International schools around the world follow the International Baccalaureate (IB) curriculum, previously it was known as International Baccalaureate Organization (IBO), which is a non-commercial organization founded in 1968 in Geneva, Switzerland ([IB headquarters](#), 2009).

It provides four educational programs: the IB Primary Years Programs for children aged three to twelve, the IB Middle Years Program for students aged eleven to sixteen, and the IB Diploma program and IB Career-related Program for students aged fifteen to nineteen (Programmes, 2016).

The mission of the International Baccalaureate (IB) is to ensure the development of youngsters in all aspects by encouraging them to be enquiring, acknowledging, understanding, respecting, and making a better world (International Baccalaureate Organization, 2017).

This system promotes students all over the globe to remain active, well-disposed, persistent learners who recognize and respect people's differences.

A set of standards and criteria have been developed to evaluate the four programs (PYP, MYP, DP, and CP). The relevant IB program standards and practices are required for successful implementation (International Baccalaureate Organization, 2017).

The program standards and practices are categorized into four major groups:

Firstly is the purpose, the IB goal is to collaborate with schools, government, and international organizations to create competent international education and proper evaluation programs. The International Baccalaureate Organization has set the following standard and practices for achieving the program goal (International Baccalaureate Organization, 2017).

Secondly, is the environment which emphasizes on the people, nature, structure and virtual resources, or any other factors encountered in the school environment while learning (International Baccalaureate Organization, 2017).

Thirdly culture, every society is known based on the behaviour that is commonly displayed. Equally, every place has its own behaviour that is expected. The school setting is not an exception; it has its norms that can also be referred to as culture (International Baccalaureate Organization, 2017).

Fourthly is learning, according to the International Baccalaureate Organization, the IB society embraces various ways in which people collaborate to deliver knowledge and interpret the world. The main goal of this section is to ensure the efficiency and quality of the IB learning system (International Baccalaureate Organization, 2017). Refer to figure 2.

Figure 2.

International Baccalaureate philosophy



2.3. Physical Education

Physical Education, also referred to as P.E, is a subject taught in most schools everywhere around the world. It is commonly delivered in elementary, middle, and high school to promote health and physical fitness by fostering psychomotor training through play and motion exploration (Anderson, 1989).

Physical Education teaches different activities, games, and sports such as football, basketball, cricket, volleyball, etc. it's also emphasized nutrition, healthy behaviour, and lifestyle (Mitchell, Stephen 2016).

According to Kun (2003), the primary purposes of teaching modern Physical Education are: to expose children and adolescents to a variety of Physical and healthy activities, since PE is accessible to most kids it's considered an opportunity to ensure positive and healthy activity in kids and teens, to educate children about the importance of being fit and healthy, to encourage youngsters to monitor themselves in order to evaluate how active they are and establish their own goals, to individualize duration, intensity or level, and type of activity, to encourage them to be active and do their best more than win and to be an active role model.

These goals could be attained in several ways. Usually, by specifying which physical education program should be followed, that includes how to teach sports education, or exercises; fitness education, which affects health and wellness; in addition to the movement skills, that engage with movement in a non-sport setting. (NCBI, 2013).

Physical Education programs and curriculums are founded on pioneers in physical education, such as Francois Delsarte, Liselott Diem, and

Rudolf von Laban, who focused on harnessing children's capacity to utilize their bodies for self-expression in the 1800s. (Abels et al., 2010).

2.3.1. Importance of Physical Education

Physical Education is a major and important program to the school's curriculum, the quality of the Physical Education program influences the student's participation in PE classes in school along with outside the school (Kjønniksen et al., 2009).

Research has found that children who participate in physical activities every day can reap a slew of health benefits if they are educated properly and constructively. This could result in lowering the metabolic disease risk, increased cardiovascular fitness, and improved mental wellness. (Hollis, et al, 2017).

According to the International Council of Sport Science and Physical Education, Physical education promotes the collaboration of mind and body, fosters knowledge of the importance of anaerobic and aerobic physical activity in health, boosts self-confidence and self-esteem, and promotes social, cognitive, and academic accomplishment (ICSSPE 2001).

Many researchers demonstrated the importance of physical activities on the psychological and physical well-being of children and adults (Gray & Leyland, 2008). Therefore promoting active and healthy lifestyles has become a primary goal for many countries (World Health Organization, 2011).

With that being said, miss formulation, along with implementation, of Physical Education programs has its own negative impacts. According to Shannon the lack of physical education is defined as the “insufficient provision and effectiveness of exercise and physical activity in modern education” (Shannon, 2005).

Physical education might lead kids to live sedentary lifestyles when it doesn't accomplish its objectives of giving pupils the knowledge, lifestyle, and mind-set needed to stay physically active throughout their lifetime (Sallis & James, 2012).

Physical inactivity is a global problem that is linked to an obesity pandemic and has detrimental effects on children's physical, psychological, and intellectual development, even though it is more common in high-income nations (Hallal, et al., 2012)

According to the National Academic Press US (2013), the quality of physical education referred to some attributes such as the certified physical education teacher, Physical Education classes must last at least 150 minutes per week in elementary school and 225 minutes per week in high school for students, and set realistic standers for children to be achieved.

The reasons for lack of physical education differ from one country to another, a lack of space and equipment, a lack of physical education teachers, class sizes, and budget limitations represent some of the reasons for this issue (International Council of Sport Science and Physical Education, 2016).

Some African countries like Malawi and Botswana, use the Physical Education assigned budget in other subjects like language and mathematics, due to the limited time that the kids spend in school (International Council of Sport Science and Physical Education, 2016).

In some places in Central America (like the Bahamas) and Asia (like Pakistan), exercise is viewed as a kind of leisure and should not be included in an academic curriculum, which contributes to a lack of physical education (International Council of Sport Science and Physical Education, 2016).

Children are forced to spend the majority of the school day inside and inactive due to the decline in physical education in schools and the unavailability of playgrounds and other facilities, which might have negative long-term consequences (Weiler & Richard 2014).

Childhood inactivity has been linked to fatty streaks and high cholesterol in the aorta in the very first decade of life, which then spread to the heart, brain, and other organs in the second and third decades, leading to health problems (Weiler & Richard 2014).

2.3.2. Physical Education programs in local schools

The present Physical Education curriculum model in Sudan for public schools is unwritten, vague, and has no limitations. The PE content does not meet the teacher and students' aspirations as there is clear inadequacy in regulating the Physical Education content in addition to the insufficient budget allocated to the PE in schools, which leads to the lack of facilities and equipment (Radwan, et al., 2021).

The major issue facing the Physical Education subject in high schools in Sudan is the absence of a well-designed Physical Education model and the lack of Physical Education teachers at high schools (Mohamed, et al., 2015).

Research done by Hussnia (1981) also emphasized the same issues such as the lack of abilities that help to attain progress in the subject, the shortage of facilities and lack of equipment, the neglect of the sports leaders, and the scarcity of PE planning, in addition to the official's ignorance regarding PE.

UNESCO has researched to assess the Physical Education curriculum model situation in Sudan Lilian (1979), and the findings were: not all students are taking part in the physical education lesson, the PE classes are not structured to deliver a progressive program to enhance the student's skills, the school spaces are not fully utilized as a result of the PE teacher's absence, there is no qualified or assigned person in charge of inspecting, maintaining, and repairing equipment and ensuring a safe environment and there is no grading or marking scheme system to evaluate the student's performance.

Students in primary and high schools receive around one to two classes of physical education per week, 40 to 49 minutes each session, while the average number of students per teacher is around 51 students and sometimes more than that (Lilian R, 1979).

2.4. Physical Education Models

There are different types of models that are used in the teaching and learning of Physical Education. The first was created in the mid-1990s and is now being re-launched in the twenty-first-century approach.

2.4.1. Multi-activity model

Many PE education programs adopt a multi-activity model of instruction. The mentioned model if conducted in a suitable way is a teacher-centered method of teaching games and sport activities in which students take part in a logical and progressive set of drills, other small games, and parent games, where direct techniques of instruction are largely used. (Curtner & Smith, 2001).

Regardless of the PE instructors' making sure that the traditional multi-activity model can be an integral mediator in encouraging youngsters' enthusiasm for physically active recreation in their leisure and even their whole life unfortunately the impact on them is scattered style (Mosston & Ashworth, 2002).

According to the suggestion of some researchers which stated that if the learners of PE wanted to overcome the barrier of this model its necessary

to conduct more research in order to ensure the program power and quality and constitute its continued popularity (Gerdin, et al., 2017). Despite that, little empirical research has examined this power issue (Tinning, 2012).

Some outcomes and evidence of some studies in the US countryside schools have considered that the multi-activity model has not always been implemented effectively. Due to the limitation of teaching, not many instruction games are offered by instructors, for the reason there is minimal relationship between physical education experiences and extracurricular opportunities (Ennis, 1999).

Hastie (2003) stated that the model has impacted negatively on Learners' psychological demands towards independence, ability, and connection could end up building autonomous motivation for physical education.

2.4.2. Sport Education Model

This model was developed by Siedentop in order “to provide more authentic, educationally rich sports experiences for girls and boys in the context of school physical education” (Siedentop, 1994). The model confirms the matter that ' even if the most Physical Education programs demonstrated

effectively they lack of enjoyment or challenging enough to inspire students' (Siedentop, 2002).

Siedentop (1994) has combined six main characteristics of institutionalized sport within the model in order accomplish this authenticity of experience and they are:' In youth sports, the idea of team affiliation is mirrored, where students stay on the same team throughout the entire season. The season is organized into different stages of formal competition, starting with preseason preparations that involve team management and practice sessions, and progressing towards actual gameplay. This structure allows for recordkeeping, fosters a sense of festivity, and leads up to culminating events.

There are many points which can be accompanied throughout the season such as embedding or annexing of recordkeeping plus the team game scores are recorded and valued, emphasizing fair play and effective team management. These points are maintained and encouraged to create a lively atmosphere and contribute to a culminating event. Next, there is a transition from a direct instructional approach to student-centered teaching methods, where students take on responsibilities such as being a coach, trainer, equipment manager, or referee. Siedentop's perspective highlights that sport education can educate students to become well-rounded players and aid in

their development as skilled, knowledgeable, and passionate sports enthusiasts.

According to (Hastie, et al., 2011) a prevailing theme that has arisen is the active involvement of students in the model by sport education literature and the mentioned level of behavioural engagement within sport education has also been clarified in positive affective outcomes, such as made the awareness and understanding of interest and enjoyment much more. (Hastie et al., 2006). Formalism features of athlete education facilitates the positive affective outcomes as proposed and suggested by modern theory that let students move along the self-permanent and motivated via support for relevance, competence, and autonomy (Perlman & Karp, 2010).

Psychological need for relatedness (Perlman, 2011) and competence (Spittle & Byrne, 2009) are satisfied effectively by athlete education as have been proposed by recent evidence. The establishing and creating of the design of the motivational studies shaped with limitation in both scope and longevity. From a scope perspective, previous motivational research using sport education has failed to pursue a transformative agenda (Penney, et al., 2002).

That is to, the estimating of the motivational outcomes of the candidates strongly restricted to the syllabus context and entirely lacking of

apparent link between students' motives for engaging in physical activity during leisure time is of significant importance. The findings suggest that the connection between motivation outlined in the curriculum and participation in physical activity outside of school remains highly relevant in contemporary discussions regarding the role of physical education in promoting physical activity among young people. Initial evidence indicates that educating athletes has the potential to positively influence the translation of self-motivation to involvement in physical activity within a school-based extracurricular setting (Wallhead et al., 2010).

However, further research is necessary to confirm this relationship, particularly among older adolescents who are approaching a critical life stage transition, such as entering the workforce or attending college, and often have more autonomy in deciding whether to engage in physical inactivity. (Wallhead, et al., 2014).

The athlete education motivation study has often been criticized for its limitations arising from the shortcomings of its study design, specifically in terms of its duration. Many arguments regarding the effectiveness of sport pedagogy rely on data reflecting students' experiences with only one or two seasons of sport education. As a result, there is a lack of understanding

regarding the potential changes that may arise in students' motivation for physical education and physical activity when they participate in a sport education curriculum for a more extended period. (Siedentop, 1994).

In his original goals for the model Siedentop explained that these longer-term participation outcomes is failed due one semester of athlete education experience is not enough to achieve the for the collective live and added that if the sport candidate who engaged sport education and got experience for many years at school without changing the ways which have an effect on the larger sport culture (Siedentop, 1994).

As it is argued by Perlman and Goc Karp related to mentioned above in terms of motivational lens and proposed that model novelty and ability of students should be tested or checked by longitudinal studies in order to strength and/or keep the internalization of the model” (Perlman & Karp, 2010).

2.5. Sport participation in Sudan

Sudan is the birthplace of many ancient civilizations, each with their own sports, however in contemporary days, football, and athletics, particularly track and field, are among the most popular sports in the country.

Now day's basketball, handball, and volleyball are starting to grow in popularity (Wood, 2022).

Sudan has a special history with football, as it was one of the founders of African football along with Egypt, Ethiopia, and South Africa. It hosted the African Cup of Nations in 1956 and won it in 1970.

The country is believed to have the oldest football league in Africa. There are many football teams across Sudan states. Al-Hilal and El-Merreikh are the most recognizable teams in the country (Wood, 2022).

According to Wood (2022), the most significant success of Sudan in sporting events and competitions are the silver Olympic medal obtained by the track and field athlete Ismail Ahmed in the 2008 Olympic Games, along with the winning of the men's African Cup of Nation 1970.

One of the nation's strongest bets in the Olympics failed to secure a medal as two-time world indoor champ Abubaker Kaki limped home at seventh place in the athletics 800-meter run event in the 2012 London Summer Olympic Games (Wood, 2022).

In the recently-concluded 2016 Rio de Janeiro Summer Olympics, Sudan participated by six athletes to compete in three sports.

However, the country's Olympic hopefuls all failed to advance to the next round in their respective events. However, the country's Olympic aspirants all bombed out in their respective events and failed to advance into the next round (Wood, 2022).

Sport in Sudan is mainly men dominated, according to Yagoub (2011) Since the Islamists took power in Sudan; they have worked on reducing the role of women in the sports field by imposing tight restrictions on female players in the different sports activities.

The lack of sport participation in Sudan is due to several reasons including the shortage of government funding for this sector, and the reliance on the individuals who love sport to finance the clubs, which wouldn't be enough for the country's sport revival (Abdallah, 2022).

In addition to the poor Physical Education programs that are being taught in schools from primary to the high school level. According to Abdallah (2022), Physical Education is one of the main factors that affect the sport situation in Sudan.

2.6. Physical Education and motivation

An essential objective of physical education (PE) is to encourage lifelong physical activity among students (Corbin, 2002). This objective suggests that PE should not only enhance students' physical activity behavior within the classroom but also foster their engagement in physical activity beyond school hours.

Haerens et al. (2010) claim that PE teachers need to increase their efforts to enhance students' self-determined motivation. He found that the motivational profiles of high school learners did correlate with their Physical Activity levels in early adulthood.

One perspective that has been found to be useful in this area posits that behaviour can be intrinsically motivated or extrinsically motivated (Deci, 1985).

Intrinsic motivation is the motivation that comes from the person's own desire without any other external influences, for example when a child plays volleyball because he/she enjoys it. While extrinsic motivation is the desire of doing something because of external influences such as social image, bragging, getting attention, etc. For example when a child practice volleyball to get better and impress his/her classmates. As Ryan and Deci

(1985) stated, in self-determination theory, extrinsic incentives negatively affect intrinsic interest. Assuming that a child who loves to play volleyball for their own sake is offered money for winning. Based on the self-determination theory, the extrinsic incentives (e.g., money, victory) harm the child's intrinsic enjoyment of volleyball. After some time, the child is likely to play volleyball less in the absence of an extrinsic incentive.

Many studies investigated the two types of motivation, the majority agreed that intrinsic motivation indicates long-term activities involvement than extrinsic motivation (Frederick & Ryan, 1995).

2.7. Students Satisfaction

Satisfaction is the sensation of delight a person experiences when their demands and desires are met (Saif, 2014). It is the feeling a person receives when he or she has encountered a performance or result that met their expectations (Ilyas et al., 2013).

Therefore, satisfaction might be defined as the pleasure of attaining the anticipated outcome (Hon, 2002). people might be satisfied when

their expectations are fulfilled; thus, it is a deliberate accomplishment that leads in contentment (rad et al., 2006).

Clients will be happy when services meet their anticipations. Petruzzellis., et al (2006) Consequently, it is a function of relative anticipation level in relation to people's perception. When a person perceives that he or she has received good service, he or she will be satisfied. On the other hand, a person will be dissatisfied when his or her perception does not match his or her service expectations. Therefore, satisfaction is the perception of a service's fulfilment with pleasure (Oliver, R., 1997).

Students' contentment as a short-term attitude based on an evaluation of their educational experiences. The pair Elliott and Healy (2001), It is the effect and outcome of an educational system and a positive antecedent of student loyalty. Student satisfaction is defined by Elliot and Shin (2002) as the subjective appraisal of educational achievements and experience. Therefore, student satisfaction can be described as a function of relative level of experiences and perceived educational service performance during the study time. Carey, et al (2002).

Students' satisfaction can be defined as a short-term attitude that results from an appraisal of the educational experience, services, and facilities provided to students.

Enhancing the physical education class could let students to be more interested and to let them experience the enjoyment of movement so that they continue to participate in physical activity and are satisfied with the lessons, whether it's outdoor games or various other sports, all of which provide an excellent opportunity to socialise and form new and lasting friendships (Moore et al., 2017)

The educational benefit of physical exercise is mostly dependent on how interested students are in their school's physical education class and the quality of the lesson presented. To educate students that physical education, in addition to other daily demands, is a personal necessity, the teacher will pursue didactic tactics geared to improve the effectiveness of physical education (Mocanu & Nanu, 2011).

For a long time, Physical Education was only thought of as a way to help young people's bodies grow in a healthy way, give them motor skills, abilities, and habits, and prepare them for life. But after Physical Education

grew in size and scope, it became a permanent programme for all kinds of people (Moore et al., 2017).

Recent research indicates that enjoyment/satisfaction with physical education (PE) positively predicts enjoyment/satisfaction with school. This school happiness leads to the reduction of both school dropout rates and disruptive behaviours and may even have a favourable impact on students' overall life satisfaction (Extremera & Gallegos, 2015).

Chapter 3. Methods

3.1. Research method

In order to explore the impact of the high school Physical Education model and the student's satisfaction on the motivation toward the Physical Education in Sudan the researcher has used a quantitative research method. This method was more ideal to analyse the research questions.

Quantitative research is “explaining phenomena by collecting numerical data that is analysed using mathematically based methods” (Aliaga & Gunderson, 2000). According to Muijs (2011), quantitative methods focus on objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys.

Quantitative research emphasizes putting together numerical data and generalizing it across groups of people in an effort to explain the phenomenon.

Survey research is used to understand a large population by taking a sample to explain more about what is contained in the large population. The researcher has used a descriptive and normative survey that involves asking

a number of questions to respondents and then summarizing their responses in percentage and frequency distribution.

The researcher used commonly used methods in surveys that include using questionnaires, telephone, and face-to-face interviews.

3.2. Participants

The researcher used a random system to come up with a list of respondents who are students in private and international high schools in Sudan. The sample size was 150 students from four schools. According to Brady and Cronin 2001 survey is used to measure a large number of variables from a large number of people within a short time.

Four schools have been chosen to represent the capital city Khartoum, that makes the targeted population 560 students. According to Mugenda & Mugenda (2003) In descriptive research, a sample size of at least 10% of the target population is appropriate. In the case of this research 150 students represent around 26% of the targeted population which is more than the required percentage, as the participants were boys and girls aged between 13 and 17 in grades 9 to 12. The sample size was 150 students from four schools.

3.3. Data collection

The study used simple random sampling, where the researcher selected respondents from the population (high school students). The selection was done in a way that all individuals had an equal opportunity to take part in the survey.

Firstly, the researcher randomly chose four schools and has sent an email to those schools authorities explaining the importance of the study and the significance of it. Emphasis was made to ensure that all information obtained is confidential and used for the intended purpose.

A questionnaire was made on google form and sent to school authorities to administer the questions to the students and then automatically the responses were returned to the researcher for analysis. The school leadership were of paramount importance during the process as they were guiding the students.

3.4. Instrument

The survey was mainly formed of four parts, in the first part, the participants were asked to provide their socio-demographic information based on the Institute of Sport and Physical Education (ISPE) survey such as status which includes gender, grade, and household income. (Chuan, 2012).

The second part was to examine the content of the PE syllabus from the student's perspective the survey in this part was based on the Krickpartik model that is specialized to evaluate education, learning, and training programs (Kirkpatrick, 1993).

The Third part were investigating the student's motivation to take part in PE and sport participation, this part was done by using the Sport Motivation Scale-6 (SMS-6) (Mallett, 2007).

The fourth part was to measure the students' sport participation after school or at the weekends, the scale of this part was developed by using the children's leisure activities study survey (Telford, 2004).

3.5. Data analysis

Data analysis was made to determine the relationships between variables. Data was gathered to address the research questions, the research data analysis was done through Statistical Analysis Software (SAS).

Multivariable regression model was conducted to predict the relationship among the Physical Education models and students' satisfaction of Physical Education on the motivation toward the subject with the control of gender and grade.

Multivariable regression models are employed to ascertain the correlation between a dependent variable and multiple independent variables or more.

3.6. Ethical consideration

The researcher got the approval from Seoul National University before conducting the research, while in the schools the authorities needed to provide the permission before the data collection. The respondents were asked to decide whether to take part or not without necessarily forcing them. A consent form circulated and all those who took part was requested to sign.

Chapter 4. Results

4.1 Descriptive analysis

This part demonstrates the participants of the study, the types of Physical Education models (multi-activity model and sport education model) and the student's grades.

The study targeted 180 participants, however, the researcher received 170 responses, among them 150 participants responded correctly while the rest were uncompleted, and some were with serious errors and could not be used.

The responses of this research were collected from four schools. The schools were picked randomly from the three regions of the capital city Khartoum (Bahri, Khartoum and Omdurman) the targeted schools were three international and two private schools.

Table1 shows the characteristics of male and female participants. The male participants in this survey were 61 students, 17 of them were from grade 9, 13 students were from grade 10, 14 students were from grade 11 and 17 from grade 12. As for the female students the total number were 92 students,

21 were students in grade 9, 37 were in grade 10, 20 were from grades 11 and 17 were from grade 12.

The selected international schools were following the sport education model, which was filled out by 71 students, 23 were male and 48 were female. While the private schools were following the multi-activity model which were filled by 82 students, 38 were male and 44 were female.

Table 1.

Descriptive results

Independent variable	Male		Female	
	N=	(%)	N	(%)
Grade				
Grade 9	17	(27.87)	21	(22.83)
Grade 10	13	(21.31)	37	(40.22)
Grade 11	14	(22.95)	20	(21.74)
Grade 12	17	(27.87)	14	(15.22)
Model type				
Multi-activity model	38	(62.30)	44	(47.83)
Sport Education model	23	(37.70)	48	(52.17)
PE Satisfaction (M,SD)	4.14	(1.74)	3.86	(1.48)
PE motivation (M,SD)	4.1	(1.44)	3.7	(1.19)

4.2. Modelling

This thesis used Statistical Analysis Software (SAS) to analyse the data collected for the students who were sampled for the purpose of this research. In Model 1 a mean comparison was run for the multi- activity model and sport education model to analyse the student's satisfaction and motivation of each model toward the Physical Education subject as shown in table 2.

And a multivariable regression was performed for the various independent variables with Model 2 analysing the impact of gender, grade and the Physical Education model type which were Sport Education model and multi-activity model on the students' motivation to participate in physical Education as shown in *table 3*.

To see if there was any change in the motivation behaviour of the students, the satisfaction motives of the Physical Education lessons of the students was added as a fourth variable in model 3 as shown in *table 4*.

Aiming to determine the combined effect of all the variables above on the motivation of the students to participate in Physical Education, an interaction variable was added in model 4 as shown in *table 5*. A P-Value of

0.05 was taken as the basis to determine the levels of significance with p-value of 0.05 being the perfect desirable level of significance.

Table 2.

Model 1

Variable	Sport education		Multi-activity	
	Number	M (SD)	Number	M (SD)
Satisfaction	71	4.0187(1.5232)	82	3.6260(1.6500)
Motivation	71	4.0785(1.5313)	82	3.7256(1.0808)

Table 3.

Model 2

Independent variable	Model 2	
	Parameter Estimate	Standard Error
Intercept	4.55***	1.04
Gender	-0.55*	0.21
Grade	-0.05*	0.09

Model type	0.45*	0.21
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R-Square 0.0625	Adj R-Sq 0.0436
------------------------	------------------------

P<0.10 **P*<0.05 ***P*<0.01 ****P*<0.001

Table 4.

Model 3

Independent variable	Model 3	
	Parameter	Standard
	Estimate	Error
Intercept	3.30***	0.73
Gender	-0.37*	0.15
Grade	-0.15*	0.06
PE Satisfaction	0.59***	0.04
Model type	0.15	0.29

R-Square 0.5537	Adj R-Sq 0.05417
------------------------	-------------------------

P<0.10 **P*<0.05 ***P*<0.01 ****P*<0.001

Table 5.

Model 4

Independent variable	Model 3	
	Parameter Estimate	Standard Error
Intercept	3.91***	0.72
Gender	-0.35*	0.14
Grade	-0.15*	0.06
PE Satisfaction	0.43***	0.06
Model type	-1.16**	0.38
Interaction	0.32***	0.08
R-Square 0.05924	Adj R-Sq 0.05786	

P<0.10 **P*<0.05 ***P*<0.01 ****P*<0.001

4.3. RESULTS

Mean comparisons

In Model 1, the sport education model has a total observation of 71 and the multi-activity model has an observation of 82. sport education model had the highest mean of student satisfaction and motivation toward PE, with a mean of 4.0187(SD=1.5232) and 4.0785(SD=1.533), respectively, when compared to the multi-activity model, which had a mean of 3.6260(SD=1.65) and 3.7256(s=1.0808).

In Model 1, the students' satisfaction and motivation toward Physical Education showed a mean of 4.0187 (SD=1.5232) and 4.0785(SD=1.5313) in the sport education model, while the multi-activity model demonstrated a mean of 3.6260(SD=1.65) and 3.7256(s=1.0808) for the students' satisfaction and motivation toward the Physical Education. Which makes the students who follow the sport education model have relatively higher motivation and satisfaction toward the Physical Education compared to the students who follow the muti-activity model.

Coefficient of determination check

(Fit diagnostic for Motivation to participate in PE)

The ADJ R-squared of 0.0436 in model 2 shows that about 4.36% changes in motivation to participate in physical activities is explained by the predictor variables of gender, grade levels and the type of Physical Education model used in the schools. This means that 95.64% is explained by the error term effectively rendering model 1 unfit.

However, after adding the satisfaction variable in model 3 the adjusted R-squared was to be 0.05417 which shows that about 54% changes in motivation to participate in physical activities is explained by the predictor variables of gender, grade levels, satisfaction of the subject and the type of Physical Education model used in the schools.

In other words, this result was showing that the motivation in Physical Education was high among students who were following the Sport Education model and they were also found to be more satisfied with the subject. On the contrary the motivation was low among the students who were following the multi-activity model and therefore they were less satisfied. The figure below shows the difference in the slopes between the two models.

After examining the effect of each variable on the motivation and in order to explore the influence of all the variables together, Physical Education model and student satisfaction in Physical Education after controlling of gender and grade on the motivation, an interaction term was run.

The results show that there is a statistically significant interaction among Physical Education models, students' satisfaction, grade and the gender of the students in Physical Education.

The adjusted R-squared increased from 54.17% to 57.86% indicating that the model with interaction helped around 4% variance in the result. This demonstrates that the model which involve the interaction is preferable.

The 57.86% change in the levels of motivation is explained by the changes in all the 6 variables. A 42.14% is captured by the error term. This resultant effect coupled with a significant level of less than 0.0001 makes model 3 relatively good fit as shown in *table 5*.

When left alone, the gender of the students (t-value -2.47), the grade in which the students are in (t-value -2.43) and the model type (t-value -3.06) does not seem to be likely to influence the students' motivation to participate.

The need and the level of satisfaction seems to have a very high likelihood to positively influence the motivation of the students with a t-value

of +7.23. However, when these independent variables are interacted, they cumulatively cause a positive relationship between the combined factor and the motivation to participate.

Together, these variables when interacted therefore produces a strong likelihood to affect the way in which the motivation to participate in Physical Education will be, with a combined t-value of 3.7. The model confirms that there is overall strong evidence that when put together, gender, grade satisfaction and the model type have a strong positive significance (p-value 0.0003) in the motivational state of the students to participate in Physical Education activities as shown in figure3.

In Figure 3 below, the X-axis labelled "sat" represents the student's satisfaction, while the Y-axis labelled "motpe" represents the student's motivation. The red line labelled "sctyp 0" corresponds to the sport education model, and the black line labelled "sctyp 1" corresponds to the multi-activity model.

Figure 3.

Motivation and satisfaction of Physical Education models

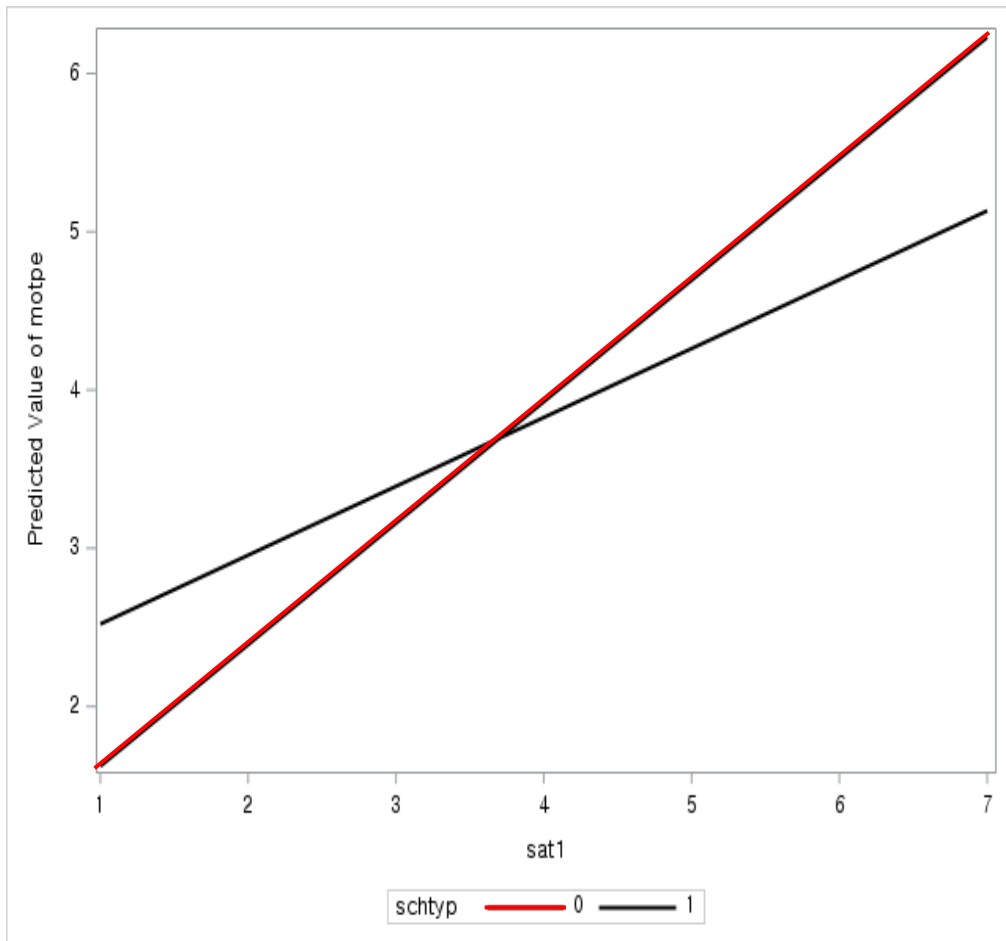


Table 6.*Coefficient of determination check*

Models	F value	Pr>F
Model 1	3.31*	0.0216
Model 2	45.91***	<.0001
Model 3	42.14***	<.0001

*P<0.10 *P<0.05 **P<0.01 ***P<0.001*

Chapter 5. Discussion

This study explored the effect of Physical Education models (multi-activity model and sports education model) on the motivation and satisfaction among high school students in Sudan and it also investigated the relationship that exists among the curricular models of Physical Education and the satisfaction levels among the high school students on their resultant motivation to participate in physical Education. The research centred on the different aspects that stirs the students to want to participate in Physical Education. Particularly, the research investigated the Physical Education models, the need for satisfaction and the resultant effect on motivation if the factors are combined to act as one-unit treatment on the students vis-à-vis their behaviour to participate in Physical Education. Other follow up factors considered in this research as possible factors to affect motivation are the students' levels of study and gender. The model of study was based on the type of the school, with local and private schools adopting the multi-activity education model while international schools adopt the sport education model in teaching Physical Education in the schools.

5.1. The effect of Physical Education models on the student's satisfaction and motivation

The findings revealed that students who followed the sport education model exhibited higher levels of motivation and satisfaction towards PE compared to those who followed the multi-activity model.

The results of this study align with previous research conducted by Wallhead et al. (2014), which reported that the sport education program led to greater increases in perceived effort and enjoyment of the program when compared to the multi-activity model. These findings are consistent with earlier studies such as Perlman (2010) and Wallhead and Ntoumanis (2004), who also found that students' enjoyment of PE increased after participating in sport education.

One possible explanation for the higher motivation and satisfaction levels among students following the sport education model is the nature of the approach itself. The sport education model focuses on providing students with opportunities for skill development, competition, and teamwork within a specific sport or activity, allowing them to have a more immersive and engaging experience. This model promotes a sense of ownership and responsibility among students, as they become active participants in planning, organizing, and reflecting on their own learning

experiences. These aspects of the sport education model are believed to contribute to the enhanced motivation and satisfaction reported by the students.

On the other hand, the multi-activity model, which involves students participating in a variety of different activities without focusing on a specific sport or skill development, may not provide the same level of engagement and personal investment. This model may not cater to the individual interests and preferences of students, potentially resulting in lower motivation and satisfaction levels.

5.2. The relationship between gender and the level of motivation to participate in Physical Education

The findings show that although gender is significant in determining the levels of motivation for the students to participate in Physical Education, it was found to have an inverse relationship with the motivation. This means the students would participate in Physical Education regardless of their gender.

According to Lee et al., (1991) boys shown grater level of pleasure than girls in Physical Education lessons, this is partially aligned with the

findings of this research as the results show a small but significant difference between the male and female students gender orientation and the motivation to participate in Physical Education. Overly, the male students showed a greater motivation than the female students and this could be explained by the African cultural orientation where the male child presumably has a freer time of his own than a female child. Additionally, low motivation, shyness, less opportunities to participate as well as competing home chores could be some of the hindrances that keep many girls away from participating in physical activities. Culp, (1998) contents that peer, family and cultural orientations unavailability or opportunities and exposure as some of the barriers that can make one not to participate in physical activities. Azzarito and Solman (2009) also pointed out that girls are more pressured to participate in “appropriate, feminine physical activities, especially if the practices in the Physical Education classroom are constructed as “male terrain”.

However, an interesting phenomenon is found in female students in international schools which follow the sport education model was to have a higher interest to participate in Physical Education. This finding was aligned with research done by Smith (1998) which stated that girls are innately more motivated than boys to participate in Physical Education when they perceive

that the activities bring them together with other students. Most international schools are known for equality, exposure and academic excellence. Many girls who find themselves in this kind of environment tend to be more confident and with a high sense of self efficacy. According to Bosscher & Smit, (1998) Self-efficacy is attributed to the belief that a person holds which enables the individual to have the ability to organize and perform specific behaviors geared towards attainment of certain achievements. that produce given attainments. Further, Contemporary studies show that when given equal opportunities, girls perform better than boys. This could be the reason why more girls than boys in international schools seem to participate in physical activities.

5.3. The Relationship between grade in which the students are in and the motivation to participate in Physical Education

Going through the literature, the researcher couldn't find scholarly work covering the level of motivation toward Physical Education among the grade 9 to 12. Therefore, the findings of this study in hand are found to fill the gap in the literature by covering the level of motivation of the high school students of motivation for each grade and hence, contributing to the academic

research conducted on the influence of Physical Education models and Physical Education satisfaction after controlling of gender and grades on the motivation of high school students. The result is grade of the students was found not likely to influence the motivational behavior of the students. However, there was some multi-variance characteristics within the grades with the students in grade 10 showing a great number of students motivated to participate followed by those in grade 9. This could be due academic requirements whereby students in grades 11 and 12 could be busy in academic work than extra-curricular activities.

5.4. The relationship between the model type and the motivation to participate in physical Education

The study sought to examine the impact of the models of Physical Education program on high school students' motivation to participate in physical Education.

Sport Education Model (SEM) is a contemporary model designed to elicit enthusiasms to participate in sports and physical activities. It is slowly crowding the multi-activity model which is viewed to be old school and teacher cantered and non-popular among the students. Lawson (2009) & Kirk

(2010) however contradict this view by arguing that the multi-activity model is credited to the survival of physical education and that it's the model that has saved the education from extinction.

The results reveal that the high students in schools that embrace the sport education program enjoy more in doing sports than their counterparts in schools that embrace multi-activity model. These findings are consistent with Perlman, (2010); Wallhead & Ntoumanis, (2004) that students taught under the sport education model enjoy more and are highly motivated. Additionally, from the interviews carried out, students from international schools indicated enthusiasm to play whenever they would have free time and in any particular place as the opportunity would present itself. This was an unlikely finding from the interviews from the students in local and private schools which embraces multi-activity model.

These findings are also aligned with the cognitive evaluation theory by Deci and Ryan's (1985) as it states that the teaching style will significantly affect the students' motivation, which explains why the students were more satisfied and motivated in one model than the other. This can be explained by the fact that sport education covers many activities and sports games throughout the season, and it focuses to give the students the chance to be

responsible in running the games by having roles distributed among each team members, which will make them to feel more engaged in the activities and therefore, they will be more satisfied and motivated.

5.5. The relationship between Physical Education satisfaction and motivation to participate in physical Education

In line with the process theory of satisfaction, people seem to be more satisfied when their expectations are fulfilled (Lynne, 2012). the study found that satisfaction was the only possible factor that had the highest likelihood of motivating students to participate in Physical Education. Both male and female students indicated that they would be motivated to do Physical Education for satisfaction. On the other hand, there was no significant difference in gender in terms of the desire to engage in physical Education with male showing slightly higher preference (SD 1.74) against the female (SD 1.48). When asked, majority of students scored high on their desire for satisfaction upon learning new training skills. This seems to relate with the previous literatures that many people get satisfaction upon attainment of a certain desire, (Saif, 2014).

Lee (2007) Physical Education is considered as a type of physical activity, a number of research examined the relationship between physical activity and satisfaction, as life satisfaction and happiness were considerably greater among people with high and moderate exercise levels. Therefore, when these students feel satisfied about Physical Education, they will likely to be more motivated about the subject.

5.6. The effect of the unidimensional factor of all the variables on the motivation to participate in sports

There was an interesting finding in all the variables in the manner in which they were affecting the motivation to participate. The normative assumption that the model of curriculum used would be the greatest motivating factor for the students to participate in physical Education did not hold. Instead, the desire for satisfaction seemed to be the highest reason for the motivation. Gender and grade do not seem to show a major shift in the motivational behavior of the students to participate in sports. While the other variables safe the level of satisfaction showed doubt as to whether there was any positive relationship that existed between the factors and the motivation factor, a unidimensional test yielded a positive summation score.

5.7. Conclusion

This research prime goal was to explore the relationship among multi-activity model, sport education model and the satisfaction toward Physical Education and how they influence the student's motivation to take part in the subject.

The study used a quantitative research method to analyse the research questions. A survey was sent to four schools in order to distributed to the high school students, the participants were 150 students in grade 9 to 12 from both private and international schools. The data were analysed using SAS (Statistical Analysis Software) through SEM to explore the theoretical relationship among the variables.

The researcher run four models, the first model was to compare the student's satisfaction and motivation of the sport education model and the multi-activity model, the findings indicate that the sport education model promotes higher motivation and satisfaction compared to the multi-activity model.

In order to emphasize more the researcher, run the second model to test the influence of the variables of gender, grade levels and the type of

Physical Education model used in the schools on the student's motivation however, the error was very high.

Therefore, the third model was to be run using the same variables but with the addition of the Physical Education satisfaction which showed 54.17% change in the level of the motivation explaining that the motivation in physical education was high among students who were following the Sport Education model and they were also found to be more satisfied with the subject. On the contrary the motivation was low among the students who were following the multi-activity model and therefore they were less satisfied.

Whereas the fourth model was done to identify the interaction relationship among all the variables which turns out to show 57.86% change in the level of the students' motivation.

Based on this study findings it could be concluded that the quality of physical education and the student's satisfaction highly affect the motivation of those students to participate in the Physical Education subject.

5.8. Limitations

It is important to acknowledge that the findings of this study are specific to the context of high school students in Sudan. The cultural, social, and contextual factors unique to Sudanese society may have influenced the

effectiveness of the Physical Education (PE) models examined in this research. Therefore, caution should be exercised when generalizing these findings to other settings with distinct characteristics.

Furthermore, the interaction between satisfaction with Physical Education and motivation to participate in PE may vary across different populations and educational contexts. Factors such as cultural norms, educational policies, and resources available to schools can significantly impact the outcomes observed in this study. Therefore, it is crucial to consider the specific circumstances and conditions of each educational system before drawing broad conclusions.

To obtain a comprehensive understanding of the relationships explored in this research, further investigation is needed to explore the generalizability of these findings across diverse populations and educational contexts. Comparative studies across different countries or regions would contribute to a more robust body of knowledge and provide valuable insights into the effectiveness of various PE models in promoting student motivation and participation.

5.9. Recommendations

The findings of this study have important implications for PE curriculum planning and implementation in high schools. Educators and policymakers should consider incorporating the sport education model as an effective approach to enhance motivation and satisfaction levels among students. By providing students with meaningful and enjoyable experiences in PE, it is more likely that they will develop a positive attitude towards physical activity and maintain an active lifestyle beyond their school years.

Furthermore, the researcher proposes that continuous evaluation should be carried out to assess students' satisfaction and motivation levels towards Physical Education. This evaluation process will provide valuable insights for educators and policymakers to make informed decisions and improvements in the curriculum. By understanding and addressing the factors that influence student motivation, authorities can create an environment that supports active and enthusiastic involvement in Physical Education.

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Physical Education.

APPENDIX

Appendix 1: Survey questionnaire

Section one

- Demographic information of students

1. Name of PE program – (1) Multi-activity Model
(2) Sport Education Model
2. Gender - (1) male
(2) female
3. Grade – (1) grade 9 (2) grade 10
(3) grade 11
4. Age – (1) 14 (2) 15 (3) 16
(4) 17
5. Which of the following describes your living status?
(1) Homeowner (2) Renter (3) Other

School Name:

School type

- (1) Private school (2) International school

Section two

INSTRUCTION

For the questions part, please mark the choice that you feel best describes the extent to which you agree for the following sentences.

1 = Strongly Disagree

2 = Disagree

3 = Slightly Disagree

4 = Neutral

5 = Slightly Agree

6 = Agree

7 = Strongly Agree

Please draw a circle to indicate your response to the following questions.

No.	The satisfaction of the Physical Education Program	Strongly Disagree	Strongly Agree
1	I'm satisfied with the PE classes overall.	1	2 3 4 5 6 7
2	Many activities are being taught in PE classes.	1	2 3 4 5 6 7
3	I'm satisfied with the lesson teaching method.	1	2 3 4 5 6 7
4	The facilities and equipment's are convenient	1	2 3 4 5 6 7

No.	Why Do you Practice PE	Strongly Disagree	Strongly Agree
1	For the excitement, I feel when I am really involved in the activities.	1	2 3 4 5 6 7
2	Because I feel a lot of personal satisfaction while mastering certain difficult training techniques.	1	2 3 4 5 6 7
3	To show my classmates how good I'm in sport.	1	2 3 4 5 6 7

4	Because people around me think it is important to be in shape.	1 2 3 4 5 6 7
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No.	Why would you practice sport after school	Strongly Disagree	Strongly Agree
1	For the excitement I feel when I am really involved in the sport of my chosen.	1 2 3 4 5 6 7	
2	Because I feel a lot of personal satisfaction while mastering certain difficult training techniques.	1 2 3 4 5 6 7	
3	To show others how good I'm in sport.	1 2 3 4 5 6 7	
4	Because people around me think it is important to be in shape.	1 2 3 4 5 6 7	

During a typical 7-Day period (a week) , how many times on the average do you do the following kinds of exercise for more than 15 minutes during your free time (write on each line the appropriate number)?

Section three

Sport participation:

1. How many times did you play sport last week?

- None 1-2 3-4 5-6 7+

3. How many times in the past week did you practice/play sports just for fun?

a) At a park:

- None 1-2 3-4 4+

b) In your backyard:

- None 1-2 3-4 4+

c) At school (recess/lunchtime):

- None 1-2 3-4 4+

d) Other location:

- None 1-2 3-4 4+

4. Which one of the sports do you play the most?

.....

5. How long have you been playing sport? If you play more than one sport, just think about the sport you play the most. (Please tick one box only)

- | | |
|---|--|
| <input type="checkbox"/> Less than a year | <input type="checkbox"/> 5 years |
| <input type="checkbox"/> 1 year | <input type="checkbox"/> 6 years |
| <input type="checkbox"/> 2 years | <input type="checkbox"/> 7 years |
| <input type="checkbox"/> 3 years | <input type="checkbox"/> 8 years |
| <input type="checkbox"/> 4 years | <input type="checkbox"/> More than 8 years |

6. How much do you like playing sports? Again think about the sport you play the most, if you play more than one. (Please tick one box only)

- I like it a lot
- I like it a little bit
- I don't know
- I don't like it that much
- I don't like it at all

Who helped you decide to start playing sport?

I wanted to start playing sport

My parents wanted me to start playing sport

My mum or dad played sport

My brother or sister played sport

My friends played sport

Other reasons. Explain: _____

국문초록

수단에서 고등학교를 다니는 학생들을 대상으로 체육교육모델이 학생들의 체육수업 만족도와 동기에 미치는 영향

Rana Moawia Mohamed Osman

글로벌스포츠매니지먼트 전공

체육교육학과

서울대학교 대학원

체육 교육의 목표는 학생들의 전반적인 건강을 향상시킬 긍정적인 평생 습관을 개발하도록 장려하는 것입니다. 체육수업에 대한 학생들의 태도는 학생들이 동기를 더 가지고 있고 높은 성취감이 있을 때 긍정적입니다. 그에 따라 학생들은 체육수업에 더 높은 우선순위를 두게 됩니다. (Ardoy 등, 2010).

본 연구의 목적은 수단의 고등학생들을 대상으로 체육 교육 모델들(다양한 활동 모델 및 스포츠 교육 모델)이 학생들의 동기와 만족도에 미치는 영향을 탐구하고, 체육 교육의 교육과정 모델과

학생들의 만족도 간의 관계를 조사하는 것이었습니다. 또한 이를 통해 학생들의 체육수업 참여 동기에 미치는 영향을 파악하고자 했습니다.

본 연구는 수량적 연구 방법을 사용하였으며, 150 명의 학생들을 대상으로 설문지 조사가 실시되었습니다. 조사 대상은 4 개의 고등학교로, 국제학교 2 개와 사립학교 2 개였습니다. 선택된 국제학교는 스포츠 교육 모델을 따르고 있었으며, 총 71 명의 학생들이 참여했으며 그 중 남학생이 23 명, 여학생이 48 명이었습니다. 사립학교는 다양한 활동 모델을 따르고 있었으며, 총 82 명의 학생들이 참여해 그 중 남학생이 38 명, 여학생이 44 명이었습니다.

본 연구에서는 통계 분석 소프트웨어(SAS)를 사용하여 데이터를 분석하였습니다. 학생들에게 더욱 동기를 부여하고 만족시키는 모델을 판단하기 위해 평균 비교를 실시하였으며, 성별, 학년 및 체육 교육 모델 유형의 독립 변수들의 영향을 분석하기 위해 다중 변수 회귀분석을 진행하였습니다.

결과는 스포츠 교육 모델이 체육수업에 대한 학생들의 만족도와 동기의 정도에서 가장 높은 평균을 보였습니다. 이 모델의 만족도 평균은 4.0187($s=1.5232$)이었고, 동기의 평균은 4.0785($s=1.5313$)였습니다. 이에 비해 다양한 활동 모델은 체육수업에

대한 만족도 평균이 3.6260($s=1.65$)이었고, 동기의 평균은 3.7256($s=1.0808$)이었습니다. 또한, 체육 교육 모델, 학생들의 만족도, 학년, 그리고 성별 사이에는 통계적으로 유의한 상호작용이 존재하며, 동기의 정도에 대한 57.86%의 변화는 모든 여섯 가지 변수의 변화로 설명됩니다. 다시 말해, 스포츠 교육 모델에 참여한 학생들은 체육수업에 대해 더 높은 수준의 동기를 가지고 있으며 높은 만족을 표현했습니다.

주요어: 체육 교육, 학생들의 동기와 만족, 스포츠 교육, 다중 활동
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