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PERCEIVED CHALLENGES CONFRONTING PRIMARY SCHOOL TEACHERS IN TEACHING AND LEARNING OF PHYSICAL EDUCATION IN THE VOLTA REGION OF GHANA

BY

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Thesis submitted to the Department of Health, Physical Education and Recreation, Faculty of Science and Technology Education of the College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Doctor of Philosophy in Physical Education

JULY 2017

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DECLARATION

Candidate's Declaration

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

Candidate's Signature ..... Date 23-07-2018

Name: Samuel Kofi Donkor

Supervisors' Declaration

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

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ABSTRACT

The purpose of the study was to investigate perceived challenges confronting primary school teachers in teaching and learning of physical education in the Volta Region of Ghana. The research design was cross-sectional descriptive survey. Multistage sampling technique yielded 636 participants out of estimated population of 9,165 teachers. Data collection instrument was self structured questionnaire. Findings revealed that funding/budgetary constraints, quality of facilities, supervision of PE programme, access to equipment, access to supplies and access to professional training in PE were institutional challenges that impeded teaching and learning of PE in the primary schools of Volta Region of Ghana. Findings also revealed that inability to provide safety for children during PE lessons, inability to plan for PE lessons, accountability for other subjects, inadequate training/knowledge in PE, negative attitude to PE and lack of expertise/qualification for teaching PE were teacher-related challenges that hindered effective teaching and learning of PE in the primary schools of Volta Region of Ghana. Findings suggested that high levels of institutional and teacher-related challenges were associated with low levels of frequency of PE lessons and that an increase in the level of pre-service education in PE was associated with a corresponding increase in the frequency at which PE lessons were taught. The study did not find significant effect of age and gender on teacher-related challenges confronting teaching and learning of PE. It was concluded that institutional and teacher-related challenges were barriers to quality PE in the primary schools of Volta Region, Ghana. It was recommended that GES and MoE should prioritise investments in PE teacher preparation, equipment and facilities to minimize the challenges.

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ACKNOWLEDGEMENTS

It took me a long time to complete this goal and without the following people it would not have been possible. First, I would like to extend special recognition to my Principal Supervisor, Dr Charles Domfeh and the Co-Supervisor, Dr Sylvanus Larbi Lamptey for guiding me in a very focused manner throughout the conduct of this study. Gratitude is greatly extended to Prof Francis K. Amedahe, Dr Godwin Aboagye and Mr Thomas Hormenu for their untiring effort that greatly contributed to the success of this work.

I thank the outstanding physical education professionals: Prof Joseph K. Mintah, Prof Joseph Ogah of blessed memory, Prof Emeritus Reginald Ocansey and Dr Patrick Ofori for their insightful observations and suggestions which helped me tremendously in completing this research. Special thanks are also extended to lecturers of HPERS department of UEW, especially, Dr Emmanuel Osei-Sarpong, Prof J.O. Ammah, Prof Augustine Pufaa, Dr Patrick Akuffo, Md Regina Darko, Mr Seibu Munkaila and Mr Henry Augustine Pufaa Jnr for their encouragement that helped me to accomplish this task.

I extend my heartfelt appreciation to the former Principal of E.P. College of Education, Amedzofe, Rev. Sylvanus Tettey for allowing me to embark on this programme. I thank Rev. Samuel Kofi Dzandzo for his prayers and support throughout the programme. I thank all friends and colleagues who helped me in diverse ways during the course of my study; especially, Mr Prosper Narteh Ogum, Md Salome Amissah-Essel, Md Christiana Asiedu, Mr Edward W. Ansah, Dr Alex Azuka Ilechie, Mr Kodwo Owusu, Mr Michael Agyei and Mrs Nancy Ebu. Lastly, I thank all my research assistants for good job done. Thank you all!

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DEDICATION

To my dear mum, Theresa Akosua Odzangba and my guardian, Rev Fr John Odzangba.

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CHAPTER ONE

INTRODUCTION

This work investigated the perceived challenges confronting primary school teachers in the implementation of Physical Education (PE) curriculum in the Volta Region of Ghana. The PE curriculum was one of the most crucial programmes that offered children the opportunity to participate in a variety of physical activities for health benefits. In related studies, Nhamo and Muswazi (2014) investigated critical factors that contributed to the trivialization and subsequent non-teaching of PE in Zimbabwean primary and secondary schools. Jenkinsen and Benson (2010) also investigated barriers to providing PE and physical activity (PA) in Victoria State Secondary Schools. In their attempt, Morgan and Hansen (2008) explored the relationship between personal school PE experiences and PE teaching practices of classroom teachers. Most of the studies on challenges confronting PE teachers were conducted outside Ghana. In part, the study was guided by social cognitive theory (Bandura, 1986). This theoretical framework highlights the relationship between cognitive, behaviour and environmental factors that influence choices made by individuals including those relating to physical education programmes. Additionally, the study was guided by social construction curriculum theory (Berger & Luckman, 1966). The social construction ideology for this study assumed that something could be done to curb numerous curricular challenges confronting basic school teachers in order to keep schools (social institutions) from being destroyed.

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Background to the Study

PE programme is the only major area within the school that helps students in developing their participating interest in a variety of physical activities (Wuest & Bucher, 2003). Teaching high quality PE programme provides learners with the appropriate knowledge, skills, behaviours and confidence to be physically active for life. The instruction of PE curriculum in schools serves as a critical step in ensuring that PE is effectively developing physically educated individuals who would choose PE as the entry-point for lifelong participation in a variety of PA.

Globally, the challenges confronting the provision of high quality of PE content to students ranged from policy to practice. Challenges such as inadequate trained teachers, inadequate teaching and learning resources (i.e. text books, facilities and equipment) held back the effective teaching of PE in many schools. It was reported that the implementation of the PE syllabus had been adversely affected by inadequate facilities, equipment, instructional materials and finance (Nhamo & Muswazi, 2014).

At the primary school level, the classroom teacher was the PE personnel and their quality depended on the training they received at the training college (Karbo, Ogah & Domfeh, 2011). The job description and duties of teachers at the primary schools involved employing a variety of instructional techniques that were consistent with the physical limitation needs and capabilities of children, meeting assigned classes at designated times, monitoring records of individuals students' achievement and evaluating pupils on a continuous basis, and working with other members to plan and execute PE. Basically, teachers at the primary school level had a responsibility of

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teaching and providing learning opportunities in PE to help children live active lifestyles. Teachers had a duty of developing motor skills in children. For this reason, teachers must be knowledgeable about PE curricular content areas that they were supposed to teach for the enjoyment of children. Through a comprehensive PE programme, pupils at the basic school level were introduced to individualized, developmentally appropriate instructional programme that allowed them to gain confidence and engage in curricular activities that promoted healthy active lifestyle. The PE programmes for basic schools was capable of developing cooperation, teamwork, sportsmanship and provided ample opportunities for students to engage in regular PA that promoted growth and development of the child.

Curriculum means different things to different people. According to Lund and Tannehill (2005) curriculum included "all knowledge, skills, and learning experiences that are provided to students within the school programme" (p.4). These encompassed even those activities that were typically offered beyond the school day such as intramurals and after school sports. Ultimately, the curriculum represented the plan that guided delivery of learning experiences and instruction. While curriculum encompassed a whole variety of potential educational and instructional practices, educators often had very precise, technical meaning when using the term "curriculum".

While learners are the primary benefactors of a curriculum, it is crucial we recognize that others like parents and friends could inform our decision and provide us with a broader, perhaps clearer perspective of life in a school community. Conducting a systematic analysis of the community and identifying factors such as economic and physical resources, the ethnic,

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religious and educational backgrounds of the residents, social and recreational opportunities available and potential political forces that impact schools would provide pertinent information to consider when designing a programme of study for the school (Wuest & Bucher, 2003). The content of PE curricular programme must be relevant to the needs of the individual learners and the society at large. The PE curriculum must provide for the total development of the child in the intellectual, physical, social and moral development. The nature of the society is of prime importance when it comes to the determination of the component of PE curriculum. In addition, individual learners could be considered in determining which content should be included in the PE curriculum. The content that is determined for teaching PE must be responsive to the changing needs of the society. The changing needs of the society therefore provide basis for overhauling curriculum objectives as and when the need arises.

Every country has its own policies and goals of education. These deal with the aims of education, the values that are to be transmitted and the type of product that will emerge out of the educational system. It should be noted that it is the nature of the curriculum that enhances the achievement of the desired goals embodied in a country's philosophy of education. For example, the syllabus of the basic education programme shows the policies and goals of education in Ghana. The PE curriculum must reflect the belief that man is made in a combination of body, mind and soul and part of nature which is timeless. Accordingly, the PE curriculum must cater for the development of nationalism, dignity of labour, development of scientific attributes and inculcation of sound moral values that produce a healthy citizen.

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The PE programmes in basic schools should involve competitive activities that reflect the aims and objectives of the PE curriculum so that children could choose to be physically active through a variety of physical activities provide for them in the school programme. For children to choose to be physically active required valuing PA, regularly participating in a variety of PA in a way that contributed to physical health, as well as social and mental wellbeing (Lund & Tannehil, 2005).

Most of the physical activities for children in the primary schools of Ghana are enjoyable, challenging and fun. Physical activity based curriculum at this basic level provides opportunities for self-expression and social interaction among children. These benefits develop self-confidence and promote positive self- image, thereby enticing children to continue participating in physical activities throughout their life span (NASPE, 2004). Participation in PE curricula activities at the basic school must look at the standards of participation and involvement of learners, recognizing the skills, knowledge and dispositions that students should demonstrate to meet these standards. Learners at the basic school level should be guided to select curricular activities that allow them to reach the outcomes stated in the standards of physical activity participation. Teachers should ensure that they carefully chose content and activities that would allow children achieve success in the chosen physical activities.

The content of the PE curriculum at the primary school level of Ghana is divided into three strands: Athletics, Games, Gymnastics and Dance. These strands are covered in the syllabus of the six year period of primary school (physical education syllabus for Primary schools, 2007). Schools are to

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provide opportunities within the physical education programme for children to participate in these activities. In addition, schools are to provide further opportunities within extr-acurricular programmes, including preparation for inter-school competitions. Extra-curricular activity organised and/or implemented by teachers or parents in a voluntary capacity, is to be linked where possible to the physical education programme. Such time, effort and expertise are extremely valuable contribution to the social and physical development of children. It could provide children with fun and enjoyment as well as opportunities to strengthen the relationship with teachers, parents and other children.

Statement of the Problem

Physical education curriculum presented varied and numerous challenges to primary school teachers. Little had been empirically found about these challenges confronting primary school teachers in the Volta Region of Ghana. Most of these perceived challenges confronting primary school teachers in teaching and learning of physical education were conducted outside Ghana and those which were conducted in Ghana, were done outside the Volta Region.

There had been concerns about primary school teachers not giving equal attention to the teaching and learning of PE as compared to other subject areas. Even though physical education was a compulsory subject at the primary school level, it was often not taught by teachers. Instead, teachers preferred to teach other subjects like mathematics, science and english more frequently than PE (Domfeh, Ladani, Adeyonju, & Kabido, 2012; Jenkinsen & Benson, 2010). Physical education was allocated four periods a week at the

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lower and upper primary school levels. Each period at the primary school level was to last for 35 minutes. This meant that non-teaching of physical education throughout the week at the primary school level denied children of learning opportunities that amounted to 140 minutes for that particular week. This situation also denied children of participating in movement activities that were to help them to live active lifestyles.

There were still problems with PE curricular resources such as the equipment, facilities and supplies in many educational institutions. It was reported that the implementation of the PE syllabus had been adversely affected by inadequate facilities, equipment, instructional materials and finance (Domfeh *et al.,* 2012; Nhamo & Muswazi, 2014).

Many basic schools did not have relevant teaching and learning resources, a situation that could make it difficult for teachers to teach the intended content areas of the subject. Inadequate curricular resources and the lack of these resources such as the facilities, equipment and supplies were not independent but were mutually dependent and influenced learning activity choices including lost of contact hours. Children by nature were greatly influenced within school environment by many elements including availability of these resources. Despite these varied and numerous challenges confronting primary school teachers, the fundamental right of access to physical education is enshrined in UNESCO's 1978 international charter of physical education and sport. According to the charter, every human being has a fundamental right of access to physical activity and every child of school going age should have access to physical education and Sport which are essential for the full development of one's personality. The freedom to develop physical,

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intellectual and moral powers through Physical Education and Sport should be guaranteed both within the educational system and in other aspect of social life. However, lack of attention and non-teaching of PE denied children of their rights to participate in a variety of physical activities that would inculcate physically active lifestyles in them (UNESCO, 1978).

Another problem relating to the teaching and learning of physical education was the quality of training teachers received from the training institutions before they were posted to the primary schools. Not all the teachers posted to the primary school level received training in physical education programme. However, whether newly trained teachers received training in physical education or not, they were all posted to basic schools that included primary schools where they had to teach all subjects including physical education. This situation could present numerous challenges to such teachers who tried to teach PE but did not receive any training or received little training in PE content areas (Domfeh *et al.*, 2012).

Low levels of physical activity programmes at basic school levels were a risk factor for ill health and mortality from all causes. People including children who did not participate in sufficient physical activity programmes stand the risk of cardiovascular disease, colon and breast cancers, type 2 diabetes and osteoporosis. It was reported that physical inactivity was associated with many diseases including stroke, heart disease, high blood pressure, various cancers, diabetes, depression, higher body weight features of the metabolic risk syndrome and cardiovascular risk factors, even independently of body weight and that a few major risk factors accounted for much of the morbidity and mortality from chronic NCDs (Siedentop, 2004).

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Several studies investigated the challenges confronting the teaching and learning of PE. However, not much research has been conducted into the curricular implementation challenges confronting primary school teachers in the Volta Region of Ghana; hence the decision to explore the perceived challenges confronting primary school teachers in teaching and learning of physical education in the Volta Region of Ghana.

Purpose of the Study

The purpose of this study was to investigate the perceived challenges confronting primary school teachers in teaching and learning of physical education in the Volta Region of Ghana. The study was also to examine the relationship between perceived curricular factors (institutional challenges, teacher-related challenges, adequacy of pre-service education in PE) and the frequency at which PE lessons were taught in the primary schools of Volta Region of Ghana. The study examined differences between male and female primary school teachers in engagement time for teaching PE curriculum in the Volta Region of Ghana. The study was also to find out if there were statistically significant differences in terms of quantity of equipment and quality of facilities for the teaching and learning of PE programme among primary school teachers in the northern, central and southern Volta Region of Ghana.

Research Questions

The following research questions guided the study:

1. What are the institutional challenges confronting primary school teachers in teaching and learning of PE in the Volta Region of Ghana?

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2. What are the teacher-related challenges confronting the teaching and learning of PE in the Primary Schools of Volta Region of Ghana?
3. What is the relationship between the frequency at which PE lessons are taught and curricular related factors (institutional challenges, teacher-related challenges, adequacy of pre-service education in PE)?
4. Is there a significant difference between male and female primary school teachers in engagement time for teaching PE curriculum in the primary schools of Volta Region of Ghana?
5. What is the effect of age and gender on teacher-related challenges confronting teaching and learning of PE in the Volta Region of Ghana?
6. Are there significant differences in the state of curricular resources (quantity of equipment and quality of facilities) for teaching and learning of PE in the primary schools of northern, central and southern Volta Region of Ghana?

Significance of the Study

This work would serve as advocacy for developing policies on PE programmes to promote good health and active lifestyles at the primary school levels in the Volta Region of Ghana. It was meant to provide a policy framework that would establish support for PE curriculum for children's regular participation in a variety of PA in a manner that would make them smart and wanting to move more. The work would play advocacy role for basic school network of health enhancing PE programmes. National policy on

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PA was necessary at all levels of education. Teachers at the primary school level would work through PE programmes to strengthen and support efforts to increase participation in PA and improve conditions for healthy lifestyles of children. This work was also to play an advocacy role for the government to introduce key strategies for increasing PA through PE curriculum in the primary schools. Even though many countries had developed national PE policies and action plans, Ghana was yet to officially have one. Local governments had a crucial role to play in creating environments and opportunities for PE programmes and active living. Leadership of various primary schools and PE professionals would be encouraged to provide enabling environment for developing and implementing policies that supported active living for all their children.

The work involved gathering information on teachers and trying to form judgment on the challenges confronting teaching, learning and participation in PE curricular programmes. By this, strengths and weaknesses of PE curricular programmes were exposed through assessment of the progress made by the teachers and the level reached in teaching and learning a variety of physical activities both inside and outside the classroom settings. The result of this study served as a feedback to meet curricular recommendations on PA participation. The evaluation and assessment result of this kind would foster accountability and enable teachers at the primary school level to show what was actually accomplished in the PE curricular programme goals despite the challenges confronting teaching and learning of PE. The evaluation process in physical education is necessary if the PE at primary school level is to grow and reach its destiny. It is through evaluation of PE curricular programmes

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that teachers render a unique and worthwhile service to the society in general and to the PE profession in particular. Evaluation is fostered when PE curricular programme goals are clearly stated and activities lead to the attainment of PA goals. It is through evaluation that there is enhancement of respectability of physical education in the academic world and among the public. Evaluation determines whether programme participants have achieved the stated PE curricular programme goals. By this, there will be recognition that teachers at the basic school level have the proper credentials since they can prove that the services they have rendered to the society can enhance people's quality of life. The study was also to provide adequate suggestions for teachers to assess students' performance outcomes along with criteria that defined the benchmark for the standards of participation in PA at primary school level.

Through this work, the physical education teacher would be provided with the basis for introducing remedial programmes to help overcome specific problems that confront teaching and learning of PE in the primary schools of Volta Region of Ghana. Teachers of PE curricular programmes would change their methods and approaches that geared toward increasing the effectiveness of PA programmes in the primary schools. This study provided adequate information which would enable basic school teachers to select appropriate physical activities that matched with the abilities of children. The work would influence how teachers planned toward the teaching of physical education in the primary schools. It would also enhance the teaching process to ensure that students attained standard level of physical activity performance for health benefits. A wide scope of physical activities would be selected by the teachers

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for teaching so that children could develop desirable behaviours for PA. It afforded the primary school teacher the opportunity to learn PE curricular content relevant or useful to the teaching and learning of PA lifestyles. Therefore, it was important for teachers in basic school to choose physical activities which were best suited to the age and experience of their children. This would encourage teachers in primary schools to help children to have the appropriate thinking toward lifelong participation in PE curricular programmes.

This investigation enriched the existing literature on PE curricular programmes. The dissemination of research findings through this study would support research efforts by promoting collaborative projects of other researchers. This work would contribute to keeping physical educators abreast of latest information on children's participation in PA. Physical educators at the basic school level who read literature on this work could take active role in advancing the field of physical education through conducting and sharing findings of the research, exploring new ideas to understand their roles and responsibilities toward helping children to reach physical activity goals. Through this study, primary school teachers would get reading opportunities to stay abreast with the times so that they could continuously be in a position of influence and serve as role models in the teaching and learning of PE curricular programmes in the basic schools.

Physical education curricular research, such as this one, would be beneficial to the general public as it encouraged individuals to adopt physically active lifestyle for health benefits. Through this work, readers could be acquainted with the PE curricular programmes requirements for physical

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activity that were necessary to generate social, mental and health benefits. This meant that if everyone adopted lifestyle of being physically active on a daily basis, the health of population would improve considerably and healthcare costs would drop drastically. Regular participation in PE curricular programmes had curative effects on a number of different diseases. Knowing this fact would encourage the general population to engage in physical activities that were enjoyable, challenging and self-motivating and were likely to be continued into the future.

This work provides rudimental understanding of how teachers handled PE curricular programmes in the basic schools and the nature of challenges confronting the teaching and learning of PE as a subject. The physical educator at the primary school level used instructional practices and deliberate practice tasks that supported PE curricular goals and objectives defined in the curriculum. The job description and duties of teachers at the primary schools also involved employing a variety of instructional techniques that were consistent with the physical limitation needs and capabilities of children, meeting assigned classes at designated times, monitoring records of individuals students' achievement and evaluating pupils on a continuous basis, and working with other members to plan and execute PE. Basically, teachers at the primary school level had a responsibility of teaching and providing learning opportunities in PE to help children live active lifestyles. They had a duty of developing motor skills in children. Rudimental understanding of these practices of the basic school teachers would help to shape the PE programmes which were structured around a variety of physical activities for the enjoyment of children at the basic schools levels.

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Delimitations

This study was delimited to public primary schools in the Volta Region of Ghana. It covered primary school teachers who attended CoE or Teacher Training Colleges. The work covered only PE as a subject of study in the primary schools of Volta Region. It was narrowed to curricular challenges confronting primary school teachers in teaching and learning of PE in the Volta Region of Ghana.

Limitations

Although selected schools were considered representative and a random sample of the total population, teacher participation was conditioned upon consent and willingness to participate in the study. Sometimes, teachers were not available in some of the schools sampled for data collection. In few cases, teachers were present but did not accept to be part of the study. Some of these teachers who did not take part in the study thought that the study was meant to investigate teacher absenteeism. Even though the purpose of the study was vividly explained to the target population, few of them still did not participate in the study. It was believed that the views of these teachers who did not participate in the study could add more information to the study if they had accepted to be part of the study. However, teachers who participated in the data collection exercise were more than the few teachers who declined to take part, therefore their views to a large extent, represented the larger population for the study.

Not all the questionnaires were returned for the study. Out of 740 cases of the distributed questionnaire, 673 cases were retrieved. Screening of the questionnaire revealed that 636 respondents correctly filled the questionnaire

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and this represented 95% of the cases used for data analyses. There were 37 (5%) rejected questionnaire because they were not correctly filled. It was believed that if all the cases of the questionnaire were returned, the sample size would increase to give the study a broader view. That notwithstanding, the views of the 37 (5%) rejected questionnaire would not significantly affect the outcome of the findings.

The research design (cross sectional descriptive survey) that was used from the very beginning as well as the method of administering it could not be changed all throughout the process of data gathering. The questionnaire which was the main instrument for data collection in the study was not a suitable method for evaluating views of subjects in cases that demanded probing questions. Although this inflexibility could be viewed as a weakness of the survey method for this study, this also was a potential strength of the study considering the fact that preciseness and fairness were both exercised in the study.

Definition of Terms

Challenges: Barriers or problems that hinder the positive outcome of physical education.

Curriculum: Set of plans and experiences that are provided to the learners under the guidance of the school.

Equipment: Resources that can be carried from place to place for the teaching and learning of PE. E.g. footballs, football nets, volleyballs, mats

Facilities: Resources that cannot be carried from place to place for the teaching and learning of PE. E.g. football fields, volleyball courts.

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Frequency of teaching: How often a teacher teaches PE in the primary school of Volta Region of Ghana.

Physical activity: Movement of the body that is produced by skeletal muscle in a way that substantially increases energy expenditure.

Physical education: An educational process that uses physical activity to help individuals acquire skills, knowledge, attitudes and fitness that contribute to optimal development and wellbeing.

Public primary school: School that is supported by the public funds from the government of Ghana.

Sport: An activity that uses physical exertion or skills competitively under a set of rules.

Organization of the Study

The main body of this work consisted of five chapters. Chapter one is titled introduction. The major subheadings of chapter one are background to the study, statement of the problem, purpose of the study, research questions, significance of the study and concludes with the organisation of the rest of the study. The second chapter of this work is titled literature review. The literature review is organized under headings and sub-headings. The theoretical framework and the research questions that guide this work are also reviewed. Chapter three of this work has methodology as the title. Major subheadings of chapter three are research design, study area, population, sampling procedure, data collection instruments, data collection procedures, data processing and analysis and chapter summary. Results and discussion is the title for chapter four. This chapter presents results in form of tables and figures. Demographic information of respondents and results based on research questions are major

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subheadings of chapter four. The organization of the main body of this work concludes with chapter five. The title for chapter five is summary, conclusion and recommendations. Major topics in chapter five are conclusions, recommendations, and suggestions for further research.

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CHAPTER TWO

LITERATURE REVIEW

The purpose of this study was to investigate the perceived challenges confronting primary school teachers in teaching and learning of physical education in the Volta Region of Ghana. To accomplish this purpose, the review of related literature was organized under headings and subheadings. Specifically, the literature was reviewed under the topics:

1. The Primary school curriculum
2. Challenges confronting teachers in teaching and learning of PE
3. Time for learning PE
4. Instructional tasks of the PE teacher
5. Teacher preparation and training of PE personnel
6. Supervision of PE curricular activities of teachers
7. Gender differences in participation of PE programme
8. Standards for physical education curriculum
9. Importance of PE curriculum
10. Theoretical framework of PE curricular challenges
11. Summary of literature review

The Primary School Curriculum

The teaching and learning of physical education (PE) at the primary school level is based on principles from science, sociology and movement education. The PE content at the primary school level has developed from simple drills to varied patterns of activities aimed at improving the physical well-being of individuals and communities (Physical Education Syllabus for Primary School, 2007).

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There are many reasons for offering physical education in schools. For instance, physical education improves the general health of the individuals, improves the general health of a community leading to lower absenteeism from school and work, creates the love for sports and games, serves as the basis for the training of potential athletes for clubs and the nation, and imparts a healthy and positive attitude of mind that helps academic work in school. It is for these and other reasons that access to physical education and sports activities is enshrined in UNESCO's 1978 international charter of physical education and sport that every human being has a fundamental right of access to Physical Education sand Sports which are essential for the full development of one's personality. The freedom to develop physical, intellectual and moral powers through Physical Education and Sports must be guaranteed both within the educational system and often aspects of social life (UNESCO, 1978).

Physical education in the primary schools of Ghana provides a wide range of learning experiences through play and sport movement. The most important purpose of physical education at primary school of Ghana is the development of mechanical efficiency i.e. co-ordination, awareness, relationships and skills characteristics by the use of large muscles in vigorous activities featuring manipulative, locomotor and non-locomotor skills. The key features of the primary school curricular experiences of the pupils are "play and fun" (Physical Education Syllabus for Primary School, 2007).

The coverage or scope of the syllabus is that of "width" rather than of "depth" in which case few pupils are always selected and trained in sporting activities to represent the school. The content areas are designed to allow for

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inclusive education. No child is expected to be left out of physical education programme in Ghana (Physical Education Syllabus for Primary School, 2007).

Aims and scope

The general aims of teaching physical education at the primary school level are to: maintain personal health through physical fitness; develop mental, moral and social capabilities, become a confident person; appreciate healthy competition in sports; become an active participant in games and sports. The scope of the primary school curricular content for physical education embraces athletics, games, gymnastics and dance. Athletics at the primary school level is supposed to be taught throughout the 6-year period. From primary 1-3, the curricular activities to be taught should be informal and should include locomotor skills (walking, running, pawing, jumping, hoping, skipping, leaping, galloping, etc), and non-locomotor skills (bending, twisting, stretching, lifting, turning, balancing, pushing, etc). Basic rules are to be taught to control performance, e.g. walking like a soldier. The primary 4-6 curricular activities center mainly on basic skills leading to specific events in athletics. Games that are included in the syllabus provide excellent opportunities for pupils to learn because children enjoy play. There are 6 games that have been included in the syllabus. These are: football, volleyball, netball, tennis, table tennis and handball. Preliminary activities that prepare the pupils to participate fully in the games are to be introduced from p1-3. From p4-6, the activities have been formalized into mini-games and the actual games. Rules are to be taught alongside practical lessons. There is a variety of traditional games that can also be played by children. Schools are expected to teach as many games as possible. The type of gymnastics envisaged for p1-3 is

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informal in nature. The activities are expected to cover the learning of locomotor and non-locomor skills. Formal gymnastics activities are to be introduced from p4. The basic activities include forward roll, cartwheel, backward roll and other simple agility and vaulting activities. Participation in movement activities form the basis for dance and every pupil must be encouraged to practice traditional and social dances (Physical Education Syllabus for Primary School, 2007).

It is expected that teachers of physical education would capitalize on the pre-requisite skills of children for successful teaching of physical education. The pre-requisite skills for physical education is the natural love for running, jumping, throwing and playing the young people bring to the classroom. The schools should provide structures and material that will enable every pupil to take part in physical education and sports activities (Physical Education Syllabus for Primary School, 2007).

Time allocation and profile dimensions

Physical education at the lower primary school level is allocated four periods a week with each period lasting 35 minutes. This means that provision has been made for teachers of physical education at the basic school level to teach the syllabus for 140 minutes per week. The profile dimensions (underlying behaviours for teaching, learning and assessment) specified in the physical education syllabus for primary school are given a percentage weight that should be reflected in teaching , learning, and testing. These are:

Knowledge:	10%
Application:	10%
Practical skills:	80%

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The emphasis of teaching and learning physical education at the primary school level is on practical skills. Combining the three dimensions in teaching and learning process will ensure that physical education is taught and studied not only at the psychomotor level, but will also ensure cognitive and affective skills development on the part of pupils. Physical education at the primary school level is expected to be assessed on continuous assessment basis rather than on formal examination basis. Assessment should therefore include periodic performance, assignments and tasks, together with assessment of understanding and application of rules, principles etc. Grading assessment in physical education at the primary school levels in Ghana use simple descriptions of "Satisfactory" and "Unsatisfactory" (Physical Education Syllabus for Primary School, 2007).

Challenges Confronting Teachers in Teaching and Learning of PE

There are many challenges that can restrict teachers from teaching physical education in schools. These challenges have been classified as being either institutional or teacher-related (Morgan & Hansen, 2008). The institutional challenges are those that are outside the teachers' control, while teacher-related barriers are those that arise from the teachers' behaviour. The simplicity of this classification enables it to be applied to both primary and secondary school settings (Jenkinson & Benson, 2010).

Institutional challenges include budget constraints, scarce resources, reductions in time provisions in the curriculum, absence of professional development, crowded curriculum, lack of facilities and equipment (Hardman, 2008; Le Masurier & Corbin, 2006, Morgan & Hansen, 2008). Previous research reported that the lower priority given to physical education, the

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absence of performance measures for physical education and activity and insufficient infrastructure were the three major institutional barriers identified by generalist elementary teachers (Dwyer *et al.,* 2003).

Earlier studies have reported teacher-related challenges among primary school teachers (Barroso, McCullum-Gomez, Hoescher, Kelder & Murray, 2005; De Corby, Halas, Dixon, Wintrup & Janzen, 2005). The teacher related challenges reported by these authors included possessing low levels of confidence or interest in teaching physical education, being unable to provide safely planned and structured lessons, having had personal negative experiences in physical education, and lacking training, knowledge, expertise and qualifications to provide physical education (De Corby *et al.;* Morgan & Bourke; Xiang, Lowy & MicBride). The physical education curricular content should equip teachers with the skills to overcome barriers more easily and enable them to plan and implement programmes accordingly (Jerkinson & Benson, 2010).

Earlier research on children's and adolescents self-reported barriers to participating in physical education and physical activity revealed learner related challenges such as unwillingness of learners to participate in physical activity, a dislike of physical activity, a lack of understanding of the benefits of physical and a decline in learner interest (Boyle *et al.,* 2008; Commonwealth of Australia, 1992; Dagkas & Stathi, 2007; Sherar *et al.,* 2009; Trudeau & Shephard, 2005).

Evidence from a previously conducted research indicated that challenges to physical education were largely institutional and that some of these challenges that confront the teacher could be planned for and overcome

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(Jenkinsen & Benson, 2010). The report by Jenkinsen and Benson indicated that many challenges to providing quality physical education programme have not changed over time. These challenges evolved and became more complex in their own context in primary schools (Jenkinsen & Benson). The focus on addressing institutional barriers alone was no longer possible, particularly as teachers reported that learners were increasingly responsible for their own educational and physical activity choices and consequently their participation in physical education. It is important for teachers of physical education to aspire and develop creative, well planned engaging and responsibility focused lessons and the confidence and ability to do so is teachers is a teacher challenging barrier to their own teaching (Jenkinsen & Benson). The awareness of teaching challenges in physical education programme will support quality curricular content, effective teaching strategies to help overcome these challenges both now and into the future (Jenkinsen & Benson).

Wuest and Bucher (2003) report that "Physical education faces tremendous challenges to its integrity as a school subject and increased pressure to fight for its place in the school curriculum" (p.535). This assertion by Wuest and Bucher makes the study of physical education ironic at the time that there is increased awareness of the health benefits to be gained from participating in physical education programmes. There is an ongoing debate among professionals regarding the goals of physical education, desired outcomes and their priority, and the content of the physical education curriculum. Physical education is typically undervalued as a school subject, often being perceived as a frill and of little educational value (Wuest &

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Bucher). Admittedly, some of these challenges are similar to those experienced in other academic areas. Administrative and teacher support for physical education is often lacking. These many and diverse expectations associated with the roles of the teacher in the primary schools lead to difficulty in meeting physical education curricular targets. Some of these challenges and issues are presented below with the intention of creating an awareness of the challenges and stimulating further efforts to address them.

Physical education curricular resources

In physical education, curricular resources are often grouped under facilities, equipment, supplies and personnel (Karbo *et al.*, 2011). The process of teaching and learning the curricular content of physical education largely depends on the availability and quality of these resources. Teachers need a wide range of stimulating and exciting resources to teach curricular content to ensure that students are actively involved in the learning. Curricular resources should reflect what is familiar to the student as well as introducing new learning approaches to engage children in a variety of physical activities. It is established that one of the important considerations in the development and promotion of comprehensive PE programme in schools is the availability of facilities, equipment, supplies and personnel (Domfeh, Attah & Ayensu, 2006). Although facilities, equipment and supplies are different in meaning, all are physical things which are needed to make the teaching of physical education programme meaningful.

Facilities

In physical education, facilities are items that are more fixed and permanent (Bucher & Krotee, 2002; Domfeh *et al.*, 2006). Facilities are large,

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immovable properties meant for specific purposes. Examples of facilities are football fields, volleyball courts, basketball courts, hockey pitches, swimming pools and gymnasia. Buildings are facilities that can contain classrooms, exercise rooms, halls for games such as table tennis.

A well equipped physical education facility contributes to the potential of the curricular programme of the school. Yet, many of our school pupils do not have the benefit of instruction within a well equipped facility. It is reported that "nearly 80 percent of elementary physical education is taught outside on a school playground" (Ross et al. in Siedentop, 2004, p.287). Siedentop states that "The facilities for PE obviously affect what can be taught (choice of activities) and how it can be taught (teaching method)" (p.287). This assertion by Siedentop does not suggest that high quality physical education cannot occur in primary school levels of our educational system without real PE facility. The issue here is that providing appropriate facilities so that the teachers can help children to achieve the full range of benefits within a subject matter such as physical education. It is important to note that:

A facility does not have to be of standard size in order to be used for teaching PE. As much as possible, facilities should be designed for multiple purposes. Any space any space available can be used for practical PE activities, provided it is safe (Karbo *et al.*, 2011, p.255).

It is important to note that school facilities can have negative impact on the implementation of the curriculum if they are not available or if they are in deplorable state. Conversely, if school facilities are in good state and in correct supply, all the planned experiences to be offered to the learners can be adequately implemented and learning would take place effectively.

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Equipment

Teachers organize a variety of physical activities that allow practice opportunities for school children while also allowing them to learn various aspects of PE programme being taught. Equipment is necessary to allow active participation and practice for every pupil. A variety of equipment enhances confidence and skill levels of the children in different types of physical activities.

Equipment refers to those items or resources are movable, relatively permanent and can last for a few years even with repeated use (Karbo *et al.*, 2011). Examples of these equipment are parallel bars, strength training equipment, mats, videotape recorders, landing foam, ropes, stop watches, measuring tapes, rackets, bats, audio/audiovisual equipment, radio, tape recorder, nets for volleyball, volleyballs, football, basketballs and netballs. Explaining further about physical education equipment, Bucher and Krotee (2002) state that:

> In physical education instructional domain, all types of balls, apparatus, nets, standards implements (e.g., gloves, bats, racquets), and accompanying storage will be needed for the conduct of individual and team sports as well as for aquatics, dance, and other physical activities (p.358).

To have a good physical activity experience begins with buying equipment that is of good quality. The equipment learners use while participating in physical activity is key to preventing injuries. Teachers must ensure that equipment is kept up to date and routinely inspected for safety. Adult size equipment may inhibit skill development, injure or intimidate

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individual learners at the basic school level. In every case, it is essential to use the correct equipment and to make sure it is in good condition.

Without proper equipment for teaching and learning, the risk of injury is high even though equipment can also cause injuries if care is not taken. However, participants have to be aware of the risks and make decisions as to whether they wish to take part in high risk activities. Correct footwear is important even for people who do not participate in much physical activities. Shoes or boots for physical activities need to fit well and provide some cushioning. Teachers must guide learners to choose carefully the equipment that are appropriate for physical activity. Equipment such as rackets and cricket bats need to be carefully given proper care. Identifying the appropriate equipment for each physical activity is important but making sure that each participant is utilizing the required equipment is even more important. However, "it is better to buy several rubber balls for all children to play with than to buy one expensive soccer or volleyball for only a few children" (Karbo *et al.*, 2011, p.255).

Supplies

In physical education, supplies are materials that become usable after one or two uses. Such materials include cards, papers, writing, materials etc. when possible, good quality supplies should be obtained (Karbo *et al.*, 2011). Supplies influence and promote learning and provide important opportunities for students to explore ideas and develop knowledge and skills about a variety of physical activities. The successful implementation of the physical education curriculum requires the use of a variety of supplies to enable the teacher to

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teach effectively and for the student to learn through a rich and varied selection of instructional supplies.

Personnel

It is stated that, "Physical education must be available in good quantity and quality. At the primary school level, the classroom teacher is the PE person and their quality depends on the training they received" (Karbo *et al.*, 2011, p.254). At the JHS level, it is not clear whose duty it is to teach PE and that "all teachers are supposed to be able to teach PE. Very few are able and willing to teach the subject because of inadequate training received at the training college and also because the subject is not examinable by WAEC" (Karbo *et al.*). Teachers of physical education need considerable encouragement and support to help them teach the physical education curriculum at the basic schools. After initial training, physical education personnel have to be motivated, supervised and retrained to enhance their effectiveness.

Physical education personnel are also available at the district and national levels. Many of these personnel have received advanced training in physical education and it is their duty to assist these teachers in the basic schools to teach the subject (Karbo *et al.*, 2011). Physical education personnel in all settings must be prepared to teach individuals with a diversity of needs and to modify activities and instructional strategies to be appropriate to the abilities of the individuals with whom they are working (Wuest & Bucher, 2003). Physical education personnel should be able to plan activities that emphasize self-improvement, participation, fair play and cooperation. Physical educators should be aware of the nature of cooperation appropriate levels and

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kinds of physical activities for children. The PE personnel should be able to teach participants how to compete positively and constructively at each level of basic education. It is the duty of the physical education personnel to facilitate opportunities to work toward common standards at individual rates of development for success (Wuest & Bucher).

Time for Learning PE

Time is not something to get through. It is a valuable resource that should be used to maximize teaching and learning. Time waits for no body and it is crucial that teachers manage the time resource efficiently so as to promote learning. Time for learning can be categorized as allocated time, engaged time and active performing time (Siedentop, 2004).

Allocated time refers to the time table period designated for the physical education lesson. In most schools, the time allocated for the physical education is 35 minutes. The allocated time is therefore the amount of time set aside for learning the subject matter in PE. For learning to occur, teachers need to make maximum use of the allocated time attempting to increase students time spent in performing the lesson objectives within the allocated time for PE. The time students spend in performing the lesson objectives denote engaged time. It is the part of the allocated time organized by the teacher to teach students with the goal to perform the lesson objectives. Active performing time refers to the actual amount of time students spent in making responses pertinent to the lesson objectives.

In their view, Karbo *et al.* (2011) argued that children have to be given time to do various curricular activities of the PE programme. Many teachers fail to provide time for children to take part in physical education

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programmes. "In some schools mandated Physical Education periods are reduced or used for other things. Some parents do not allow their children to take part in PE and Sports" (Karbo *et al.,* p.55). A situation like this is unacceptable and does not depict good education. So long as school curricular programmes are concerned, time is to be regarded as a precious commodity. In schools where accountability exists, teachers are under pressure to keep to time allocation for physical education programme.

If physical educators are to keep the physical education programmes and make them viable, then time must be made as part of accountability process in the teaching and learning of physical education. In schools where time for teaching physical education is not part of accountability formula, heads and teachers cut time available for physical education for other works. If physical education is going to continue to be part of the school curriculum, teachers must find a way to connect with the educational goals of a school to meeting these goals. Generally, schools are being held accountable for student learning time and physical education is not exempt from this accountability (Lund & Tanneihill, 2005).

Education in Ghana emphasizes subjects like mathematics, science and english. Under pressure to find more time for these subjects, teachers of physical education and heads of basic schools seem pressured to find more time by reducing or eliminating physical education programme. Research indicates that time spent in physical education does not decrease learning in other school subjects. Indeed, literature reports that many people thought regular physical education programme during school day activity enhances student performance (Siedentop, 2004).

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There is a growing awareness that the physical education needs of children and their development as physically educated people cannot be met without devoting more time to physical education. Evidently, if physical education is to find time outside the regular school schedules, it must do so by linking with community physical activity and sport programs for children" (Siedentop, 2004).

Instructional Tasks of the PE Teacher

According to Karbo *et al.* (2011), "Classroom instruction is a major means of creating learning opportunities for students" (p.226). This means that most of the content areas in the syllabus is to be covered in classroom instruction. It is therefore the duty of every teacher to ensure that classroom instruction is provided according to the provisions made in the curriculum. At the preschool level, there are no distinct subjects taught and most of the activities of preschool children involve physical activity (Karbo *et al.*).

The role of physical education in the school curriculum is to help students develop competencies and beliefs necessary for incorporating regular physical activity into their lives. Through involvement in well-taught physical education programme, children can achieve physical and personal benefits. An important part of a comprehensive physical education programme is instruction in fundamental motor skills. Children who receive effective physical education instruction have been found to successfully participate in a range of movement activities and maintain involvement during childhood.

The teaching of motor skills and fitness must be in the earliest years of primary school. During these years, children are physically active and intellectually capable of benefiting from instruction in physical education and

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are highly motivated and enthusiastic about learning. The minimum number of times that physical activity can be done to be effective is three times a week. This is why at least three lessons are required and the lessons are spread over the week. Karbo *et al.* (2011) indicate that "It is scientifically wrong to have all PE lessons taught in one day. It is like eating all the meals of a week in one day, or bathing for three hours in one day in order not to bath again for a week" (pp.226-227). However, throughout a student's school life age-appropriate instruction must be provided during physical education. During the early primary school years (p1-3), pupils must be given the opportunity to learn the essential motor skills upon which later learning is dependent. These fundamental motor skills are often displayed by pupils at play. They include the overhand throw, catch, kick, ball balance, run, dodge and vertical jumps. Mastery of these skills by children is necessary if optimum development of higher-level skills is to occur. Children who do not master these skills are less able and often less willing to persist with the difficult task of learning more complex factors such as ability, capability, learning style, learning pace.

Teachers at the basic school level have a duty to provide success-probable learning materials and experiences; create and manage effective learning environment; customize the curriculum as culturally and socio-economically appropriate; and assess incremental achievement of physical education content standards to determine mastery (ICHPERSD, 2001).

It is also incumbent upon the institution to provide properly certified instructors in accordance with global standards for professional preparation of physical education; provide and support for teaching and learning (e.g. age, grade level, developmental level, special needs); and evaluate teacher

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performance, student learning and programme effectiveness equal to that of all other disciplines.

It is to be understood that quality of physical education instruction and programmes is dependent upon existence of several components that operate simultaneously. These standards provide a foundation defining essential content to be learned by students, but must be organized in a curricular content within the school structure. Thus, it is necessary for each school entity to write a curriculum for its particular needs (ICHPERSD, 2001).

During the later primary school years (p4-6), children should be taught a broad range of transitional, or leap-up, motor skills and activities. Examples of skills and activities in this group include basketball, dribble and modified netball. The skills and activities at this level may be combined or modified in various ways, practiced with or without equipment and taught through individual practice or by incorporating them into game structures. The essential fundamental motor skills must be mastered by children. Teachers should aim to teach for the mastery of fundamental motor skills rather than awareness. An attempt at a fundamental motor skill by a child is to be applauded. However, teachers should not accept an attempt at a fundamental motor skill as evidence of mastery of the skill. Children are expected to achieve mastery of fundamental motor skills. It is also essential that teachers understand fundamental motor skills as criteria for children to learn during the preliminary school years. Many people underestimate the amount of time it takes to master fundamental motor skills and try to teach too much or too quickly. When the underestimation occurs, teachers end up teaching for awareness or participation rather than teaching for mastery.

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Generally, there are two kinds of PE lessons: theory and practical. The theory lesson covers topics in games and competitive rules, basic anatomy and physiology, health and safety, history, the importance of physical activity and sportsmanship. Practical lessons from preschool through primary devoted to the teaching of skills and the performance of exercise (Karbo *et al.,* 2011). It is crucial to note that teaching PE at the basic level is made up of only practical lessons from preschool through primary school. Even at the Junior High School (JHS) level, most PE lessons are practical. This suggests the teaching of knowledge and understanding to be done during practical lessons (Karbo *et al.*). This means that children may not be required to sit in a classroom for PE lessons even though they still have to be taught game rules, sportsmanship, safety rules etc.

Teacher Preparation and Training of PE Personnel

Bucher and Krotee (2002) argue that professionals or individuals who seek to teach physical education in schools and institutions need to "possess those qualifications listed for physical educators and coaches and, in addition, the special training and qualifications needed to work in the activity …" (p.234). Teachers who teach physical education must have qualities that include thorough knowledge of subject matter, ability to take personal interest in each learner, good communication skills and knowledge of clear boundaries between teacher and student. In support of these qualities of a physical educator, Bucher and Krotee stated that:

> Physical educators and coaches should have a sincere interest in and enjoy teaching, participating in activities, and helping others realize the encouragement of participation and of becoming physically fit and

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> physically educated. Unless the individual has a firm belief in the value of physical activity and a desire to help extend the benefits of such an endeavor to others, he or she will not be an asset to the profession (p.223).

It is incumbent upon physical educators to possess an acceptable standard of motor ability and skill level. To teach various curricular activities, it is helpful to possess the skills and considerable knowledge of subject matter in physical education curricular content. Physical education is strenuous and therefore demands that members of the professional be in good physical and mental condition in order to carry out their duties efficiently and effectively. Physical educators need to build healthy bodies and minds and are often expected by students, community, and management to be role models (Bucher & Krotee). This means that physical educators should be in good physical condition themselves.

Admittedly, classroom teachers can do a good job teaching but they have to have preparation to do so (Siedentop, 2004). Literature reports a 2-year programme to help classroom teachers to teach physical education programme was successful and that "Teachers were willing to teach PE 3 days a week and felt more confident when they did so" (Siedentop, p.285). Siedentop again reports that:

> Most classroom teachers have had only one course in physical education methods as part of their teacher preparation. They are not well prepared to teach physical education. The demands as their curricular time increase year by year. They cannot possibly do all the

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things expected of them and physical education is too often the subject that gets left out (p.286).

The PE specialist has extensive training to do the job and has that job as his or her sole teaching interest. When this condition prevails, school children clearly would benefit from specialist teaching than from physical education instruction given by the classroom teacher. In some school districts, physical education specialist travel from school to school, often serving three or four schools each week and teaching one lesson per week while the classroom teacher follows up with a second and perhaps a third lesson that week (Siedentop, 2004).

The teacher professional preparation programme is for students interested in pursuing a teaching career and includes basic skill courses, physical education major activity and pedagogy courses, and various physical education content courses such as applied physiology, biomechanics, history and philosophy, school, motor behaviour, organization and management, sport psychology, and sport sociology. The experience usually culminates in a student teaching and practicum setting. Also associated and often integrated with the professional preparation programme are certification and licensure programmes (e.g. adapted developmental education or coaching). These programmes remain integral parts of most college programmes. Preferably, "The physical educator should be a graduate of an accredited institution that prepares physical education professionals for a career in physical education" (Bucher & Krotee, 2002, p.233).

It is important to note that in-service training and staff development programmes are vital to building the instructional capacity of teacher. This is

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supported by literature that reveals that "Because of the rapid changes occurring within the profession, staff members should attend regular in-service and staff development training programs" (Bucher & Krotee, 2002, p.237). This is particularly important because new methods of teaching, programmes, assessment and evaluation have implications for all professionals. Teacher training and development activities build esprit de corps and promote communication, enthusiasm, creativity and sharing. Often, the training of teachers in physical education "pays huge dividends in success and in high quality programs" (Bucher & Krotee, p.237). As a result of this professional enhancement opportunities play a significant role in assuring personal, psychological success leading to quality performance and should be in an integral part in all management structures (Krant & Korman in Bucher and Krotee).

It is ideal to have full-time specialist PE educators in school districts so that all children will participate in PE curricular activities for lifetime outcome. In school communities where there are specialist PE personnel, it is the responsibility of the specialist physical education teacher at the school to provide lesson plans for the classroom teachers so that they can build on what was taught during the specialist lesson with the children.

Supervision of PE Curricular Activities of Teachers

Bucher and Krotee (2002) indicated that "Supervision is the function concernerd with overseeing, assisting, and assessing the empowerment potential of the situation within each human resource function" (p.237). Indeed, supervisors serve as links to management and transmit policy, procedures, and decisions to personnel and ensure that feedback is relayed in

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the other direction. Supervisors serve as coaches (impart knowledge, motivate), as counselors (encourage, resolve conflict), and as quality control guarantors (assessment and evaluation). The supervisor should act to improve the ability of PE teachers, or other personnel to complete their assigned duties in the school. Supervisors must recognize every PE personnel and the contribution he or she makes to the school. It is incumbent upon the supervisor to see to it that the PE teachers are assigned to tasks that are in line with their abilities. Supervisors should be able to demonstrate willingness to delegate responsibility, establish high yet attainable standards, provide a complete analysis of each position in the school, establish accountability for teachers and help each teacher to feel a sense of accomplishment and affection. "Supervision will be effective if sound leadership is provided with the supervisor's focus of attention not on his or her own interests or power, but on the needs, interests and development of the employee (Bucher & Krotee, 2002, p.238). Supervision requires the ability to coach staff members in envisaging their own strengths and weaknesses provide assistance in helping the teachers to resolve personal conflicts, improve morale, objectively judge and assess personal performance, and make recommendations for promotions, retention and other rewards.

Gender Differences in Participation of PE Programme

Generally women and men cannot do the same physiological tasks. Because of the undesirable difference between the sexes contrary to the difference between the races, this cannot apply to other discriminations that occur and the equality that is sought. In terms of physical activity participation, Wuest and Bucher (2003) report that "Inactivity is greatest

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among women …" (p.7). This categorical statement by the authors indicates that physical activity levels vary by gender. There is a general consensus that participation in physical activities can offer a great deal to individuals, communities and nations. Evidence suggests that from an early age, differences in gender-based attitudes towards opportunities for physical activities can have a significant influence on children's participation (WHO, 2010).

Physiological differences cannot be denied. Women are physiologically different from men, in more ways than having biologically distinct organs (e.g. muscle mass, fatty tissue, aerobic capacity). Gender differences prior to puberty in health related physical fitness such as physical activity are due to the different treatment and expectations our society has for girls and women. The differences are generally small, increase gradually, and are adjusted downwards to even smaller levels by variables that are influenced by environmental circumstances (e.g. degree of fatness, intensity of physical activity). For example, having different norms-standards for health related physical fitness tests results in different expectations for boys and girls. Norms-standards are based on performances, not actual capabilities. Thus children, teachers, and parents all accept differential norms-standards for girls as reflecting acceptable performance, and girls meet these expectations. Level of physical activity may have some basis in heredity. After puberty, a biological environmental interaction appears to be the best hypothesis for the increasingly large effects noted in tasks wherein differential hormonal effects may influence physical activity performance (e.g., tasks involving strength, power, muscular endurance, and cardiovascular endurance). Boys are larger

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because of more muscle mass and a longer period of growth. Girls add essential fat at puberty. Thus, for tasks in which strength, power, and size are important, boys will typically perform better. However, the differences reported across the many motor performance and health related physical fitness tasks are considerably larger than would be expected from only biological factors (WHO, 2010).

Many parents, teachers, coaches, and peers continue to behave as if girls should not exercise or participate in strenuous physical activity to the same degree and level that boys should. This attitude and expectation results in a situation where girls participate, perform, practice, compete, and behave exactly as society expects (WHO, 2010). The result is reduced levels of physical activity and practice, in turn resulting in lower levels of health related physical fitness and sport skills.

Gender differences in performance have been reported for many types of physical activity tasks. However, just identifying gender differences is of little value unless it leads to understanding why gender differences exist (Wuest & Bucher, 2003). Are these differences based on heredity, environment, or their interaction? Can inferences be made about the sources of the gender differences based on their developmental patterns? Patterns of small differences in early childhood that increase during the elementary school years are often thought to begin with differential treatment of boys and girls of preschool age, followed by teachers, coaches, and peers acting as if these differences were biological and continuing to treat boys and girls differently. For example, it is common to see primary grade teachers handing out jump ropes to girls and balls and bats to boys at recess time (Wuest & Bucher).

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Differences increase across childhood because teachers, coaches, and peers accept these initial differences as if they are biological and thus continue to treat boys and girls in very different ways as well as having different expectations and providing different practice opportunities (Wuest & Bucher, 2003). Around puberty, biology plays an important role in the development of gender differences since hormonal changes result in increased muscle mass in boys and increased essential fat in girls. Thus boys have an advantage in activities involving strength, size, and power. However, differences are still influenced by environmental experiences since girls are less likely to participate in activities that promote the development of motor skills associated with physical activity (Wuest & Bucher).

The gender differences in measures of cardiovascular endurance is supported by observations of the amount of moderate to vigorous physical activity boys and girls engage in studies report a clear trend of decreasing levels of activity as girls get older, and a widening disparity between girls' and boys' physical activity behaviours (Wuest & Bucher, 2003). There is a genetic predisposition towards being more or less physically active. However, any such predisposition is mediated by a host of factors. Personal factors environmental factors biological psychological social environmental hereditary motivation peer group access age perceived barriers family type of activity obesity perceived competence culture school fitness level attitudes role models influencing girls' participation (Wuest & Bucher).

Standards for Physical Education Curriculum

Many organizations have established content standards for physical education. Notable among these organizations are International Council for

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Health, Physical Education, Recreation, Sport, and Dance (ICHPERSD), United Nations Educational, Scientific, and Cultural Organization (UNESCO) and the National Association for Sports and Physical Education (NASPE).

Establishing content standards for physical education was to enable quality physical education curricular content in schools; thus, helping insure that every person is physically educated. A physically educated person is someone who has learned skills necessary to perform a variety of physical activities, is physically fit does participate regularly in physical activity, knows implications of and benefits from involvement in physical activities, values physical activity and its contribution to a healthful lifestyle (NASPE, 2004).

Standards for PE represent what individuals ought to know and be able to do as a result of the instructional programme. Currently, there are global standards for physical education representing what every learner should know and be able to do. It cannot be assumed that every individual in every community will be able to meet all of the content standards at any point in time. Nevertheless, in the spirit of the right of every individual to be physically educated, it is incumbent upon the profession within the respective country to contribute continuously toward fulfilling of the standards (ICHPERSD, 2001).

There are also benchmarks that identify what the student will be able to do, knowledge, skills, and behaviours resulting from the instructional programme received. There are indicators of progress toward achievement of the standard. The content standards for physical education enable individual nation to customize its curriculum by such factors as including appropriate

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culture-related standards developing performance expectations for various levels of ability and disability, expanding content standards and using various activities. Children are generally those enrolled in formal schooling from age 5-18. All individuals should have access to the essential content of physical education, which is intended to be within the group of all children regardless of the country in which they live (ICHPERSD, 2001). It is incumbent upon the physical education profession to provide: professionally prepared and appropriately credentialed physical educators, for sequential learning and development, for individualized learning in the context. "The needs of youth are varied in physical education programme, Curriculum that align with the standards will identify these topics, and provide the youth with a way to stay physically active throughout lifespan" (Lund & Tannehill, 2005, p.10).

According to Wuest and Bucher (2003), physical education is the only major area within the school that helps students in developing their participation interest in a variety of physical activities Physical activity based curriculum provides students with opportunities to learn how to modify movements to meet changing situational demands and unique needs. The physical activity-based curriculum also provides students with opportunities to explore movements as a vehicle for creativity, and as a means to understand others in their pursuit of active-living goals (Wuest & Bucher, 2003). It is reported that:

Through many current physical education curriculums are emphasizing fitness promotion, the development of motor skills should not be neglected. This is essential for lifespan participation. The likelihood of individuals engaging in physical activity regularly increases if they have the skills to

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participate successfully in activities that are enjoyable and personally satisfying. (Wuest & Bucher, 2003, p.65).

This means that school physical education programmes should offer a balanced variety of activities that allow young people to develop competency in lifetime activities that are personally meaningful and enjoyable.

The National Association for Sport and Physical Education (NASPE) in 2004 provided general descriptions of standards and appropriate practices for physical education curriculum. In this document, the association describes many characteristics of a good physical education programme that should exemplify a good curriculum for all levels of education. According to NASPE each of the characteristics of a good programme represents a focus of a particular need of the students. Appropriate content for physical education curriculum is best in terms of the standards. The major emphases of the physical activity based curriculum programme as presented by NASPE for each of the standards are illustrated as follows:

Standard 1: Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities

The intent of this standard is development of the physical skills needed to enjoy participation in physical activities. Mastering movement fundamentals establishes a foundation to facilitate continued motor skill acquisition and gives students the capacity for successful and advanced levels of performance to further the likelihood of participation on a daily basis. In the primary years, students develop maturity and versatility in the use of fundamental skills (e.g., running, skipping, throwing, striking) that are further refined, combined and varied during the middle school years (NASPE, 2004).

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These motor skills, now having evolved into specialized skills (e.g., a specific dance step, chest pass, catching with a glove, or the use of a specific tactic), are used in increasingly more complex movement environments, including use of tactics, through the middle school years. On the basis of interest and ability, high school students select a few activities for regular participation within which more advanced skills are mastered. In preparation for adulthood, students acquire the basic skills to participate in a wide variety of leisure and work- related physical activities (NASPE).

Standard 2: Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities

The intent of this standard is facilitation of the learners' ability to use cognitive information to understand and enhance motor skill acquisition and performance. It enhances the ability to use the mind to control or direct one's performance. This includes the application of concepts from disciplines such as motor learning and developrnent, sport psychology and sociology, and biomechanics and exercise physiology (NASPE, 2004). It includes, for example, increasing force production through the summation of forces, knowing the effects of anxiety on performance, and understanding the principle of specificity of training. Knowledge of these concepts and principles and of how to apply them enhances the likelihood of independent learning and therefore more regular and effective participation in physical activity. In the lower elementary grades, emphasis is placed on establishing a movement vocabulary and applying introductory concepts. Through the upper elementary and middle school years, an emphasis is placed on applying and generalizing these concepts to real-life physical activity situations. In high

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school, emphasis is placed on students' independently and routinely using a wide variety of increasingly complex concepts. By graduation, the student has developed sufficient knowledge and ability to independently use his/her knowledge to acquire new skills while continuing to refine existing ones (NASPE).

Standard 3: Participates regularly in physical activity

The intent of this standard is establishment of patterns of regular participation in meaningful physical activity. This standard connects what is done in the physical education class with the lives of students outside of the classroom (NASPE, 2004). Although participation within the physical education class is important, what the student does outside the physical education class is critical to developing an active, healthy lifestyle that has the potential to help prevent a variety of health problems among future generations of adults. Students make use of the skills and knowledge learned in physical education class as they engage in regular physical activity outside of the physical education class. They demonstrate effective self-management skills that enable them to participate in physical activity on a regular basis. Voluntary participation often develops from the initial enjoyment that is derived from the activity coupled with the requisite skills needed for participation. As students develop an awareness of the relationships between activity and its immediate and identifiable effects on the body, regular participation in physical activity enhances the physical and psychological health of the body, social opportunities and relationships, and quality of life. Students are more likely to participate if they have opportunities to develop interests that are personally meaningful to them (NASPE). Young children

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learn to enjoy physical activity, yet also learn that a certain level of personal commitment and earnest work is required to reap the benefits from their participation. They partake in developmentally appropriate activities that help them develop movement competence and should be encouraged to participate in moderate to vigorous physical activity and unstructured play. As students get older, the structure of activity tends to increase and the opportunities for participation in different types of activity increase outside of the physical education class. Attainment of this standard encourages participation commensurate with contemporary recommendations regarding the type of activity as well as the frequency, duration, and intensity of participation believed to promote a healthy lifestyle (NASPE).

Standard 4: Achieves and maintains a health-enhancing level of physical fitness

The intent of this standard is the development of students' knowledge, skills, and willingness to accept responsibility for personal fitness, leading to an active, healthy lifestyle (NASPE, 2004). Students develop higher levels of basic fitness and physical competence as needed for many work situations and active leisure participation. Health-related fitness components include cardiorespiratory endurance, muscular strength and endurance, flexibility, and body composition (Siedentop, 2004). Expectations for improvement of students' fitness levels should be established on a personal basis, taking into account variation in entry levels, and the long-term goal of achieving health-related fitness. Moreover, students become more skilled in their ability to plan, perform, and monitor physical activities that address each component of health-related fitness (NASPE). Moreover, students become more skilled in

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their ability to plan, perform, and monitor physical activities appropriate for developing physical fitness. For elementary children, the emphasis is on an awareness of fitness components and having fun while participating in health-enhancing activities that promote physical fitness. Middle school students gradually acquire a greater understanding of the fitness components, the ways each is developed and maintained, and the importance of each in overall fitness. Secondary students are able to design and develop an appropriate personal fitness program that enables them to achieve health- related levels of fitness (NASPE).

Standard 5: Exhibits responsible personal and social behavior that respects self and others in physical activity settings

The intent of this standard is achievement of self-initiated behaviors that promote personal and group success in activity settings. These include safe practices, adherence to rules and procedures, etiquette, cooperation and teamwork, ethical behavior, and positive social interaction (NASPE, 2004). Key to this standard is developing respect for individual similarities and differences through positive interaction among participants in physical activity. Similarities and differences include characteristics of culture, ethnicity, motor performance, disabilities, physical characteristics (e.g., strength, size, shape), gender, age, race, and socioeconomic status. Achievement of this standard in the lower elementary grades begins with recognition of classroom rules, procedures, and safety. In the upper elementary levels, children learn to work independently, with a partner, and in small groups. Throughout elementary school, students begin to recognize individual similarities and differences and participate cooperatively in physical

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activity (NASPE). In the middle school, adolescents identify the purpose for rules and procedures and become involved in decision-making processes to establish the rules and procedures to guide specific activity situations. They participate cooperatively in physical activity with persons of diverse characteristics and backgrounds. High school students initiate responsible behavior, function independently and responsibly, and positively influence the behavior of others in physical activity settings. They participate with all people, avoid and resolve conflicts, recognize the value of diversity in physical activity, and develop strategies for inclusion of others. High school students begin to understand how adult work and family roles and responsibilities affect their decisions about physical activity and how physical activity, preferences, and opportunities change over time (NASPE).

Standard 6: Values physical activity for health, enjoyment, challenge, self- expression and/or social interaction

The intent of this standard is to develop an awareness of the intrinsic values and benefits of participation in physical activity that provides personal meaning (NASPE, 2004). Physical activity provides opportunities for self-expression and social interaction and can be enjoyable, challenging, and fun. These benefits develop self-confidence and promote positive self- image, thereby enticing people to continue participation in activity throughout the life span (NASPE). Elementary children derive pleasure from movement sensations and experience challenge and joy as they sense a growing competence in movement ability. At the middle school level, participation in physical activity provides important opportunities for challenge, social interaction, and group membership, as well as opportunities for continued

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personal growth in physical skills and their applied settings. Participation at the high school level continues to provide enjoyment and challenge as well as opportunities for self-expression and social interaction. As a result of these intrinsic benefits of participation, students will begin to actively pursue life-long physical activities that meet their own needs (NASPE).

Importance of PE Curriculum

Participation in physical activity is important to the physical and mental health of almost everyone, including older adults. Being physically active can help you continue to do the things you enjoy and stay independent as you age (WHO, 2010). Regular physical activity over long periods of time can produce long-term health benefits (WHO). Regular exercise and physical activity can reduce the risk of developing some diseases and disabilities that develop as people grow older. In some cases, exercise is an effective treatment for many chronic conditions. For example, studies show that people with arthritis, heart disease, or diabetes benefit from regular exercise. Exercise also helps people with high blood pressure, balance problems, or difficulty walking (Siedentop, 2004; Wuest & Bucher, 2003).

One of the great things about physical activity is that there are so many ways to be active. For example, you can be active in short spurts throughout the day, or you can set aside specific times of the day on specific days of the week to participate in physical activity. Many physical activities such as brisk walking, raking leaves, or taking the stairs whenever you can are free or low cost and do not require special equipment. The benefits of regular participation in physical activity are well-established (Siedentop, 2004; WHO, 2010; Wuest & Bucher, 2003). Regular participation in physical activities is associated with

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a longer and better quality of life, reduced risks of a variety of diseases and many psychological and emotional benefits (WHO). There is also a large body of literature showing that inactivity is one of the most significant causes of death, disability and reduced quality of life in the developed world (Wuest & Bucher, 2010).

Theoretical Framework of Physical Education Curricular Challenges

In part, the study was guided by social cognitive theory (Bandura, 1986). This theoretical framework highlights the relationship between cognitive, behaviour and environmental factors that influence learning and activity choices made by individuals including those relating to physical education programmes. Teachers are influenced greatly within the school environment by many factors including resources available for engaging in curricular and extracurricular activities. The interaction and influence of all the three factors on preferred behaviours of teachers is certainly evident in teaching and learning environment of PE in the primary schools of Volta Region of Ghana. Social cognitive theory suggests that the environment contributes to behaviour and mindset of individuals. By extension, institutional and teacher-related challenges greatly influence the behaviour and mindset of PE teachers in teaching and learning environment.

This study was also guided by social construction curriculum theory (Berger & Luckmann, 1966). Physical education curricular challenges such as inadequate supply of teaching and learning materials, lack of facilities and equipment for physical education programmes threaten the needs of the society (Hardman, 2008; Le Masurier & Corbin, 2006; Morgan & Hansen, 2008). Based on social construction theory, the society is assumed to be

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unhealthy and its survival is threatened by numerous challenges. Social construction curricular theory assumes that something can be done (construction) about these threats to curriculum implementation and to keep schools that are social units effectively functioning. If education is meant to solve societal problems then the masses of society must analyze themselves in relation to societal needs. Admittedly, education is not an autonomous entity. It is rather shaped and controlled by societal forces. Therefore, it is important for schools which are social institutions to play a role in bringing about positive changes by providing learning experiences that can help the products of the school to become educable so that they can learn and adapt efficiently throughout their lives to an environment that is changing continuously.

Summary of Literature Review

In summary, this chapter reviewed related literature that included the physical education curriculum in the primary schools of Ghana, challenges confronting teachers in teaching and learning of PE, supervision of PE curricular activities of teachers, instructional challenges of primary school teachers, teacher preparation and training of PE personnel, curricular standards for physical education, importance of physical education curriculum and theoretical framework of physical education curricular challenges.

The scope of the primary school curricular content for physical education embraces athletics, games, gymnastics and dance. Athletics at the primary school level is supposed to be taught throughout the 6-year period. From primary 1-3, the curricular activities to be taught should be informal and should include locomotor skills (walking, running, pawing, jumping, hoping, skipping, leaping, galloping, etc), and non-locomotor skills (bending, twisting,

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stretching, lifting, turning, balancing, pushing, etc). Basic rules are to be taught to control performance, e.g. walking like a soldier. The primary 4-6 curricular activities center mainly on basic skills leading to specific events in athletics. Games that are included in the syllabus provide excellent opportunities for pupils to learn because children enjoy play. There are 6 games that have been included in the syllabus. These are: football, volleyball, netball, tennis, table tennis and handball. Preliminary activities that prepare the pupils to participate fully in the games are to be introduced from p1-3. From p4-6, the activities have been formalized into mini-games and the actual games. Rules are to be taught alongside practical lessons. There is a variety of traditional games that can also be played by children. Schools are expected to teach as many games as possible. The type of gymnastics envisaged for p1-3 is informal in nature. The activities are expected to cover the learning of locomotor and non-locomor skills. Formal gymnastics activities are to be introduced from p4. The basic activities include forward roll, cartwheel, backward roll and other simple agility and vaulting activities. Participation in movement activities form the basis for dance and every pupil must be encouraged to practice traditional and social dances (Physical Education Syllabus for Primary School, 2007).

The implementation of the PE syllabus has been adversely affected by many challenges that include inadequate facilities, equipment, instructional materials and finance (Nhamo & Muswazi, 2014). These challenges or barriers have been classified as being either institutional or teacher-related (Morgan & Hansen, 2008). The institutional challenges are those that are outside the teachers' control, while teacher-related barriers are those that arise from the

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teachers' behaviour. The simplicity of this classification enables it to be applied to both primary and secondary school settings (Jenkinson & Benson, 2010). The reality is that physical education faces tremendous challenges to its integrity as a school subject; therefore, the need for the study: challenges of primary school teachers in implementation of physical education curriculum.

Based on social construction theory, the society is assumed to be unhealthy and its survival is threatened by numerous problems. Physical education curricular challenges such as inadequate supply of teaching and learning materials, lack of facilities and equipment for physical education programmes threaten the curricular needs of the society (Hardman, 2008; Le Masurier & Corbin, 2006; Morgan & Hansen, 2008).

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CHAPTER THREE

RESEARCH METHODS

This work investigated the perceived challenges confronting primary school teachers in teaching and learning of physical education in the Volta Region of Ghana. This chapter deals with the methods and procedures that were used for data collection and analyses. Detailed explanation of this chapter is organized under the following headings:

1. Research Design
2. Study Area
3. Population
4. Sampling Procedure
5. Data Collection Instruments
6. Data Collection Procedures
7. Data Processing and Analysis
8. Chapter Summary

Research Design

The research design for the study was cross-sectional descriptive survey. The design was chosen because the study involved studying a group of people by collecting and analyzing data considered to be representative of the entire study population. In a study involving cross sectional descriptive survey, data collection is done at just one point in time which may take anywhere from a day to a few weeks or more (Cohen, Manion & Morrison, 2000; Cresswell, 2003; Fraenken & Wallen, 2000; Ogah, 2013; Nworgu, 2006).

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The use of survey research design for this investigation had a number of advantages. The survey research design was versatile and could be used to answer research questions at all four levels - describe, explain, and determine cause-effect relationships (Ogah, 2013). This allowed a description of the population from which the sample was drawn. The design also allowed comparison of attitudes and exploration of differences among study population over a period of time. This design provided a description of trends, attitudes and opinions of primary school teachers in the Volta Region of Ghana by studying a representative sample of the population. The survey research design allowed generalization of the results from the representative sample and made claims about the population of the study (Gay, Mills & Airasian 2009). The design also provided data relatively quickly. I did not have to wait for many years as often the case in longitudinal studies.

To be able to generalize sample survey data to an entire population, "the sample responding to the survey should accurately represent all the subgroups within the population (Gay *et al.*, 2009: p.176). Therefore, the survey research design for this study provided a high level of general capability in representing a larger population due to the huge number of people who participated in the study. The data that were gathered possessed a better description of the relative characteristics of the general population that was involved in the study. As compared to other methods of data gathering, descriptive survey design for the study could be able to extract data that were near to the exact attributes of the larger population (Sincero, 2012).

The design offered a conducive situation for effective analyses of multiple variables using survey procedures. Surveys were generally reported

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to be ideal for many research studies because they provided all the participants with a standardized stimulus so that with a high reliability obtained, the researcher's own biases were eliminated (Gay *et al.,* 2009). This situation offered a greater precision in terms of measuring the data gathered. Essentially, the use of cross-sectional description survey for this study was appropriate because it dealt with gathering of data in a sample that was drawn from a pre-determined population.

However, Sincero (2012) reported few disadvantages of the survey method for data gathering and analyses. First, the survey that was used by the researcher from the very beginning as well as the method of administering it could not be changed all throughout the process of data gathering. Although this inflexibility could be viewed as a weakness of the survey method, this could also be a strength considering the fact that preciseness and fairness could both be exercised in the study. Secondly, the questions that respondents regarded as controversial could probably not be answered precisely. This could be attributed to difficulty of recalling the information related to the respondents. The truth behind these controversies might not be relieved as accurately as when using alternative data gathering methods such as face-to-face interviews and focus groups.

Study Area

Volta Region of Ghana was the area for this study. Geographically, Volta Region of Ghana was the longest region that covered a land area that extended from the northern to the southern part of the country. The region was one of the 10 administrative regions of Ghana with Ho as its regional capital. The Volta Region of Ghana lied to the east of the Volta Lake. I was convinced

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that the characteristics of my study participants (teachers) were representative of the population of primary school teachers in the Volta Region of Ghana.

Population

To obtain data for the study, experts who were knowledgeable on the topic under study were used. The target population for the study was therefore trained teachers teaching in the public primary schools in the Volta Region of Ghana. These teachers had different ages that ranged from 21 to 59 years. The population for the study was characterized by high level of literacy. All subjects for the study were teachers who could read, write and speak english language. All subjects (teachers) were employees of Ghana Education Service (GES). The total population of my subjects (primary school teachers) in the study area was about 9,165. Table 1 presents estimated population of the study.

Table 1 – Estimated Population of the Study

Teachers	Total
Male Teachers	5, 625
Female Teachers	3, 540
Total	9, 165

Source: *Basic Regional Profile – 2016/2017 Academic Year, Volta Region, Ho.*

Demographic Characteristics of Subjects

Subjects possessed different background characteristics. Descriptive analyses of data suggested that males who participated in the study were less than females. Out of 636 subjects, there were 408 females (64.2%) and 228 males (35.8%). In terms of age distribution, subjects who were below 30 years

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formed 39.2 percent while 31-38 years subjects were 27.8 and 33.0 percent for subjects of 39 years and above. The number of subjects drawn from lower and upper primary school were 290 (54.4%) and 346 (45.6%) respectively. Geographically, the number of subjects drawn from Northern, Central and Southern Volta were 212 each. Respondents were also requested to indicate their designations in the school. Data related to these designations showed that 75 respondents (11.8%) were head teachers while 561 of the respondents (88.2%) were class teachers.

Table 2 presents the demographic data relating to gender, age, level of teaching and geographical location of study participants.

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Table 2 - Demographic Data Relating to Gender, Age, Level of Teaching and Geographical Location of Study Participants

Variables		Frequency	Percentages (%)
Gender	Male	228	35.8
	Female	408	64.2
	Total	636	100
Age Distribution	≤30 years	243	39.2
	31-38 years	195	27.8
	≥39 years	198	33.0
	Total	636	100
Level of Teaching	Lower Primary	290	54.4
	Upper Primary	346	45.6
	Total	636	100
Geographical Location	Northern Volta	212	33.3
	Central Volta	212	33.3
	Southern Volta	212	33.3
	Total	636	100
Designation of Teachers	Head Teachers	75	11.8
	Class Teachers	561	88.2
	Total	636	100

As part of demographic data, respondents were asked to indicate their classes of teaching. Out of a total of 636 respondents, 98 (15.4%), 103 (16.2%) and 98 (15.4%) taught in class one, class two and class three respectively; while 97 (15.3%), 112 (17.6) and 126 (20.1%) of them taught in

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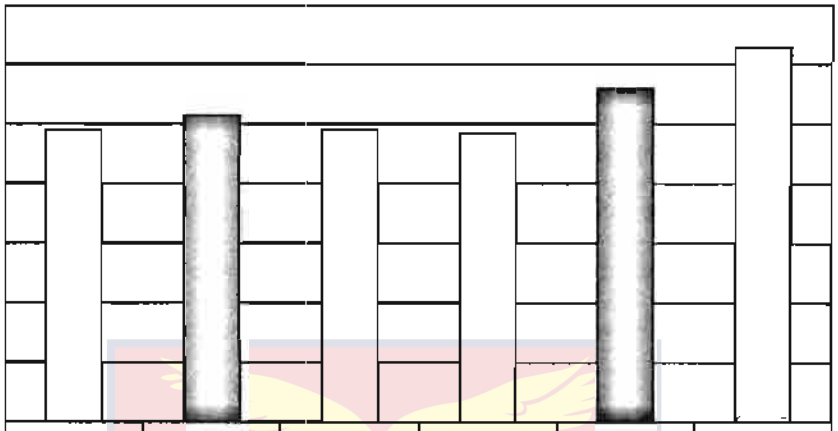
class four, class five and class six respectively. Figure 1 presents analyses based on the classes taught by study participants (teachers).



Class One	Class Two	Class Three	Class Four	Class Five	Class Six
98	103	98	97	112	126

Figure 1- Classes taught by study participants

Figure 2 presents results of some of the instructional practices of teachers in the primary schools of Volta Region. Demographic data related to teachers' instructional practices suggested that 565 subjects (88.8%) had PE on their time tables. It was also found out that most teachers (77.4%) had never attended any PE workshop since they started teaching in the primary schools of Volta Region of Ghana. Additionally, most of the teachers (92.6%) said that physical education as a subject was important to them. Among the 636 respondents, 61.2% of them reported that there was frequent cancellation of PE lessons as compared to other subjects. Physical education continued to suffer setbacks as most of the teachers (63.5%) used PE allocated time for teaching other subjects.

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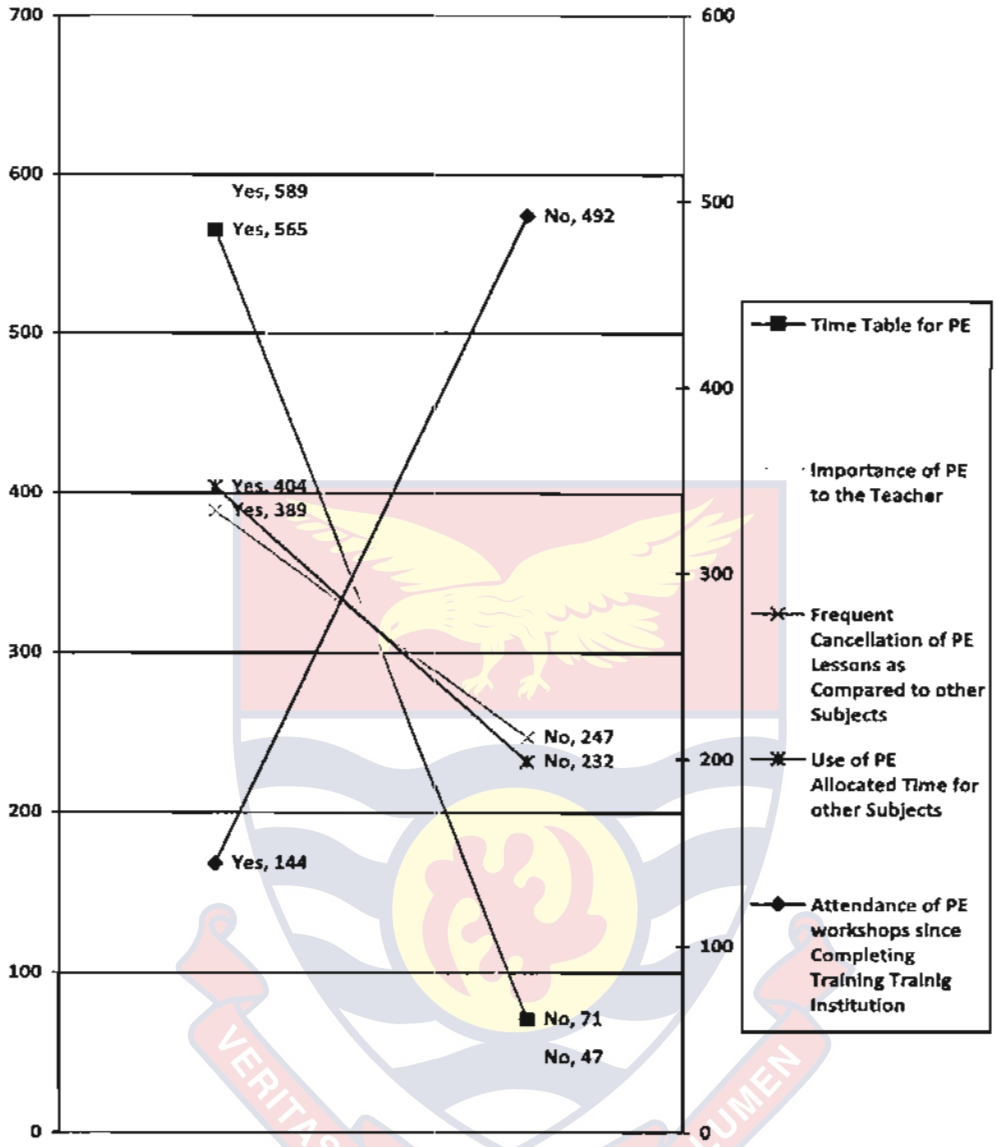

Figure 2 – Demographic data on instructional practices of teachers

Critical to this study was the frequency at which PE lessons were taught in the primary schools of Volta Region. A study of the background information of subjects indicated that only 30 teachers (4.7%) taught PE always as indicated on the school timetable. Evidently, 197 teachers (31.0%) reported that they did not teach PE frequently while 57 teachers (9.0%) and 166 teachers (26.1%) taught PE often and occasionally respectively. The background information also revealed that 186 subjects (29.2%) taught PE

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sometimes. Figure 3 presents the results of subjects on frequency of PE lessons in the primary schools of Volta Region of Ghana.

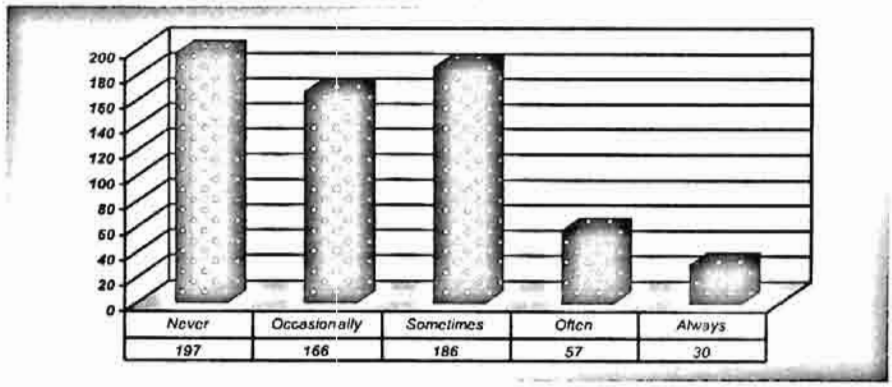

Figure 3 – Frequency of PE lessons

Sampling Procedure

Sample size determination table (Ogah, 2013) guided the number of subjects estimated for the study. According to Ogah, for a population of 9000, a sample of 369 subjects was ideal. However, the sample size for this study was increased to 636 subjects because "the larger the sample, the more likely it can be representative, and therefore generalizable" (O'leary, 2004, p.104). Therefore, the use of 636 subjects for this study was considered very representative of the estimated population of 9,165 teachers.

Specifically, the sampling was carried out in three stages; from construction of strata to choosing subjects that formed a representative sample of the target population for the study. The procedure involved putting the population into levels and sampling within each level till I got to the sampling unit. I combined different sampling techniques such as stratified sampling, simple random sampling and convenience sampling. In carrying out the multistage sampling technique, the elements were regarded as made up of a number of first stage units each of which was made up of second stage unit

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and so on. In this case, instead of using all the elements contained in the selected stratum, I randomly selected elements from each stratum. Constructing the strata was the first stage. Random selection of the districts/municipalities within the strata was the second stage. Any of the sampling procedures, according to Ogah (2013) "can be used at each of the stages, depending on circumstances" (p.127).

Precisely, in the first stage of the sampling process, I constructed strata based on the geographical areas for the study. The strata were based on northern, central and southern geographical areas in the Volta Region of Ghana. All the strata were made up of districts/municipalities. Specifically, the northern geographical stratum was composed of one municipality (Hohoe) and nine districts (Krachi West, Krachi East, Krachi Nchumuru, Nkwanta North, Nkwanta South, Kadjebi, Jasikan, Biakoye, and Afadjato South). The central geographical stratum was composed of two municipalities (Kpando and Ho) and five districts (North Dayi, South Dayi, Ho West, Kpetoe-Ziope and Adaklu). The Southern geographical strata was composed of one municipality (Ketu South) and seven districts (Akatsi North, Akatsi South, Ketu North, North Tongu, Central Tongu, South Tongu and Keta). Over the years, the northern, central and southern geographical areas of the Volta Region were used for physical education and sports activities by the Colleges of Education in the Volta Region of Ghana. Stratified sampling was particularly useful as it allowed data collection to be spread over many geographical areas of the study.

In the second phase of the multistage sampling technique, simple random sampling of balloting was used to select two districts/municipalities

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from each of the three strata. From the northern stratum, Jasikan district and Hohoe municipality were randomly sampled. Kpando and Ho municipalities were also randomly sampled from the central stratum. In the southern stratum, South Tongu district and Ketu South municipality were randomly sampled. This sampling technique yielded a total of six districts/municipalities as data collection sites for the study. Random sampling by balloting ensured that districts and municipalities within the study area were given a fair and equal opportunity to be part of the study.

The third stage of multistage sampling technique for the study involved convenience sampling of schools and teachers. Convenience sampling "involves the use of members of the population who are most easily contacted and readily available to take part in a study" (Ogah, 2013, p.128). A total of 71 schools served as data collection sites for the study in the six randomly sampled districts/municipalities. Each primary school was estimated to have six teachers but some of the schools had more or less than the estimated number. Due to this variation in teacher population from school to school, convenient sampling technique showed that 228 teachers from 22 schools participated in data collection exercise in the northern stratum, while 223 teachers from 23 schools participated in the data collection exercise from the central stratum. In the southern stratum, the number of subjects who participated in the data collection exercise was 222 from 26 schools. In total, the multistage sampling technique generated responses from 673 subjects from the three strata. After screening the responses, a sample size of 636 subjects was achieved from the correctly filled questionnaire that was distributed to study participants in the three geographical strata of the Volta Region of

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Ghana. The process of convenience sampling continued until the desired sample size was obtained. Therefore, the use of convenience sampling technique enabled achievement of sample size that was representative of the study population in a relatively inexpensive way.

The use of multistage sampling in this study was particularly useful as it allowed me to employ a combination of sampling procedures that included stratified sampling, simple random sampling and convenience sampling to draw objectively desired sample size. This ensured that data were gathered from a representative sample of groups and subgroups.

Data Collection Instrument

The instrument for data collection was researcher's designed questionnaire. The questionnaire was self structured to comprise of six sections with a total of 52 items that elicited responses for answering research questions of the study. It was estimated that subjects used about 15 to 30 minutes to complete the questionnaire. The items of the questionnaire were developed based on research questions and guided by the information gathered from the literature in relation to the challenges confronting primary school teachers in teaching and learning of physical education curriculum in the Volta Region of Ghana.

Precisely, the items of the questionnaire for the study consisted of both closed and open ended types and were constructed to be direct, specific, and precise for easy eliciting of responses from the respondents. The closed-ended items had options to choose from; while in the open-ended ones, respondents were required to supply specific responses to the items. Specifically, the sections of the data collection instrument were:

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Part I: Demographic Data

Part I collected demographic data of respondents. The items in this part were made up of both closed-ended and open-ended questions. Item 1, 3, 4, 5, 6, 10, 11, 12, 13, 14, 15, 16, and 17 were closed-ended questions while item 2, 7, 8 and 9 were open-ended questions that required that respondents supplied accurate answers. In all, there were a total of 17 items in part I of the data collection instrument.

Part II

Section A: Instructional Tasks/Supervision of PE Programme

Section A of part I collected data pertaining to instructional tasks and supervision of PE curricular programmes in the primary schools of Volta Region of Ghana. On a rating scale of 1 (never) to 5 (always), respondents were asked to indicate how frequently they taught PE lessons, how frequently they wrote PE lesson notes and how frequently they were supervised in PE programme. In all, there were 3 items that formed section A of the data collection instrument. All items were closed ended.

Section B: State of Curricular Resources

Section B of part II was constructed to gather data on the state of PE facilities, equipment and supplies for the implementation of PE programme in the primary schools of Volta Region of Ghana. In the first part of section B, subjects were expected to rate the quality of facilities, equipment and supplies that were available for the teaching and learning of PE programmes in the region. The quality of these curricular resources was based on a 6-point rating scale with specific options. These options were: 1 (very poor), 2 (poor), 3 (fair), 4 (good), 5 (very good), and 6 (excellent). In the second part of this

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section, respondents were expected to rate the quantity of equipment, facilities and supplies that were available for the implementation of PE programme in the primary schools of Volta Region of Ghana. The quantity of these curricular resources was rated as: 1 (insufficient), 2 (Limited), 3 (sufficient), 4 (above average) and 5 (extensive). In all, six items (item 21, 22, 23, 24, 25, and 26) were constructed under section B. All items in this section were closed ended.

Section C: Institutional Challenges

Section C sought to elicit responses from the subjects on the institutional factors that threatened PE instruction in the primary schools of Volta Region of Ghana. The section was made up of a 4-point Likert's scale items. The options were: 1 (strongly disagreed), 2 (disagreed), 3 (agreed) and 4 (strongly agreed). The respondents were to indicate the extent to which they disagreed or agreed on the perceived institutional challenges confronting primary school teachers in teaching and learning of PE in the Volta Region of Ghana. In all, there were 10 items (item 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36) in this section. All items in this section were closed ended.

Section D: Teacher-Related Challenges

Section D sought to elicit responses from the subjects on teacher-related factors that threatened the teaching and learning of PE in the primary schools of Volta Region of Ghana. The section was made up of a 4-point Likert's scale items. The options were: 1 (strongly disagreed), 2 (disagreed), 3 (agreed) and 4 (strongly agreed). The respondents were to indicate the extent to which they disagreed or agreed on the perceived teacher-related challenges confronting the teaching and learning of PE in the Volta Region of Ghana. In

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all, there were 10 items (item 37, 38, 39, 40, 41, 42, 43, 44, 45, 46) in this section. All items in this section were closed ended.

Section E: The Level of Physical Educated of the Teacher

Section E elicited responses from subjects with regard to their level of physical education. The section sought to find out the extent to which teachers in the primary schools of Volta Region of Ghana were educated in PE for the teaching of PE programme. All the items in this section were made up of a 4-point Likert's scale items. The 4-point Likert's scale options were: 1 (very low extent), 2 (low extent), 3 (great extent) and 4 (very great extent). In all, there were 6 items (item 47, 48, 49, 50, 51 and 52) that formed section E of the data collection instrument. All items in this section were closed ended.

The use of questionnaire for this study was very appropriate because all subjects were characterized by high level of literacy and could read, understand and provide responses to the questions. The self-designed data collection instrument was very effective in gathering factual data about practices, opinions, feelings, behaviours and attitudes of subjects. It had been widely used for data gathering in social and educational research. Questionnaire for this study was less expensive than other methods and had high tendency of producing quick result that was stable, consistent and uniform measure without variation. As an additional strength, questionnaire provided "relative ease in responding to them and dealing with the data which are often collected from relatively large samples" (Ogah, 2013, p.140). The questionnaire permitted respondents time to consider their responses carefully without interference from the researcher. The instrument covered issues that pertained to curricular challenges of the respondents in a relatively efficient

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way with possibility of a high response rate. As compared to other methods of collecting data, questionnaire as data collection instrument was more effective, economical because it made it possible for many subjects to be studied at the same time (Ogah, 2013).

Despite the numerous advantages of the questionnaire for this study, the instrument was not a type that could permit follow-up on answers. The instrument was therefore not a suitable method of evaluating views of subjects if probing questions were required. However, this weakness did not affect the results of the study since probing questions were not required to answer any of the research questions that guided the research.

The self-structured questionnaire was subjected to a pilot study. According to Polit, Beck and Hungler (2001), pilot study is "a small scale version or trial run in preparation for major study" (p.464). Baker (1994) asserted that "a pilot study is often used to pre-test or try out a research instrument" (pp.182-183). Baker suggests that a sample size of 10-20% of the sample size for the actual study was reasonable number of participants to consider enrolling in a pilot study.

The essence of the pilot study was to find out how the respondents would react to the items of the questionnaire, whether the items were clear enough and that study participants could easily understand them. It was also meant to investigate whether there was the need to construct more items in some sections of the questionnaire. Items that were found unanswered or yielded low reliability coefficient were restructured, replaced or deleted, depending on the prevailing situation. Most of the items were given accurate and satisfactory responses. The pilot test of the instrument enhanced content

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constructs and implored the quality of the questions since those with ambiguity were corrected before the actual administration of the final instrument. The comments that were passed based on the administration of the items enabled me to do away with ambiguous questions or to restructure them to ensure clarity, suitability, validity and reliability of the instrument. Kuranchie (2014) reports that pilot study "helps researchers to obtain feedback on the research instruments, administration procedures, analysis etc that could be used to improve the main study" (p.72).

The pilot study was conducted personally with two trained research assistants. I visited the three geographical areas (Northern, Central and Southern Volta) with my research assistants to present a letter of introduction to the District/Municipal Director of Education and to collect data from the sampled schools. In the first phase of the pilot study, I visited the northern geographical zone with two research assistants to administer the questionnaire. The administration of questionnaire was carried out on Tuesdays, Wednesdays and Thursdays in the weeks of data collection exercise in the districts/municipalities sampled for the study. This period was appropriate because teachers who wished to travel during weekends were able to participate in the data collection exercise before leaving schools and those teachers who probably reported to school late after weekends were able to meet the data collection period and participated in the study.

The pilot study found that institutional challenges (lack/inadequate equipment, inadequate facilities, inadequate supplies, lack of funding/budgetary constraints, lack of access to professional development/training in PE and teaching priority for other curricular subjects)

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and teacher-related challenges (inadequate knowledge in PE, negative perception about PE, lack of expertise, lack of interest and priority for other subjects) impeded teaching and learning of PE in the primary schools of Volta Region of Ghana. Negative correlation was found between teacher-related challenges and frequency of PE lessons. Negative correlation was also found between institutional challenges and frequency of PE lessons. There was positive relationship between adequacy of pre-service education in PE and frequency of PE lessons. In terms of engagement time for teaching PE, the pilot study did not find statistically significant difference between male and female primary school teachers of Volta Region of Ghana. The study revealed that age and gender had a significant effect on institutional and teacher-related challenges. The results suggested that there were no statistically significant differences among teachers of northern, central and southern Volta Region of Ghana in terms of quantity of equipment and quality of facilities for teaching PE programme.

For the actual study, questionnaire was largely administered throughout the week. Respondents were given one week to complete and submit the questionnaire to school heads or designated teachers. This arrangement promoted high return rate of the completed questionnaire. Respondents were advised to complete the questionnaire during first and second break periods to avoid interference with instructional hours or complete the items in the house and submit them to school heads or designated teachers within one week of administration.

It was scheduled that Teachers from the districts/municipalities where the data collection instrument was piloted were not part of the actual study.

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Subjects chosen for the pilot study were those that possessed the same characteristics as the subjects in the districts/municipality where actual study was conducted. Study participants for the actual study were drawn from the same geographical areas just like the areas for the pilot study. For consistency and accuracy in data gathering, similar procedures for both the pilot test and the actual study were followed in each of the three geographical areas (northern, central and southern Volta Region).

Validity of the self-structured questionnaire was given required attention before using it for the actual studies. In this study, validity referred to "the extent to which the content of a measuring instrument sufficiently represent all items under study" (Kuranchie, 2014, p.71). Making sure that data collection instrument had adequate items to cover the research questions led to content validity of the self-structured questionnaire that was used for the study. In his assertion, Ogah (2013) identified two forms of validity; internal validity and external validity. For internal validity "we need to show that the observation and representation of a phenomenon are accurate" (Ogah, p.28). It is also noted that external validity "has to do with whether we plan to say that what we observed from a small group (sample) is applicable to the large group (population) from which the sample is picked" (Ogah, p.28). This meant that internal validity of the instruments used to collect data for the study should be properly constructed, pre-tested in a way that achieved acceptable validity. In their view, Cohen, Manion and Morrison (2007) argue that content validity of data instrument "must show that it fairly and comprehensively covers the domain or items that it purports to cover" (p.37). Cohen et al. further state that "it is unlikely that each issue will be addressed in its entirety simply because

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of the time available or respondents motivation to complete, for example a long questionnaire" (P.37).

For the purpose of dealing with validity issues, the self-structured instrument for data gathering was subjected to scrutiny by three university instructors who were experienced in educational and social research. These researchers inspected, analyzed and ascertained the capability of the instrument of collecting accurate and valid data for the study. Precisely, three university senior lecturers, all of whom were professors validated the data collection instrument. Their judgments and suggestions were used to construct the final instrument for the actual study. Additionally, the construction of questionnaire was supervised and vetted by the Principal Supervisors for this study. This additional validation measure of the data collection instrument further enhanced the accuracy and suitability of the instrument in collecting valid data. Comments and suggestions made by these experienced researchers were used to improve the general quality of the instruments for data gathering in the actual study.

Validity of the instruments was also ensured by giving the items to a representative sample of the actual study. This was done as part of the pilot study where some teachers with characteristics similar to the subjects for actual study were asked to complete a sample of the questionnaire. The responses and reactions of these teachers in completing the items helped me to ascertain the ambiguity and the difficulty level of the instruments. Allowing a representative sample of the study to complete the questionnaire ensured that items were clear and that the respondents easily understood all the items of the final instrument that were used for data collection in the actual study. Items

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that were found to be difficult and unanswered were restructured, replaced, or deleted depending on the situation to enhance construct validity of the instrument.

The reliability of the self-structured instrument was also given attention. According to Gay *et al.* (2009), reliability "is the degree to which a test consistently measures whatever it is measuring" (p.158). The more reliable a test or a score was, the more confidence I could have that the test or score obtained from the subjects were essentially the same scores that would be obtained if the test were re-administered to the same subjects. This meant that the scores of study participants should provide consistent information about performance. But Gay *et al.* indicate that "… items, scores will likely be quite different every time the test is administered" (p.158). These authors; Gay et al. suggest that:

> Reliability is expressed numerically, usually as reliability coefficient which is obtained by using correlation. A perfectly reliable test would have a reliability coefficient of 1.00, meaning that students' scores perfectly reflected their true status with respect to the variable being measured, but also, no test is perfectly reliable. High reliability (i.e., a coefficient close to 1.00) indicates minimum error- that is the effect of errors of measurement is small (p.154).

Precisely, Cronbach's alpha was used to determine the reliability of items of the data collection instrument. The Cronbach's alpha according to literature "is generally used as a measure of the reliability of a set of questions in a survey. It was reported that "A level of alpha that indicates an acceptable level of reliability has traditionally been 0.70 or higher. However,

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interpretation of alpha in specific contexts is generally more complicated than what has been presented here" (Gay *et al.*, 2009, p.154). It was expected that a reliability of 0.70 or higher was necessary in order to accept questionnaire items as reliable for gathering data in actual study (Gay *et al.*).

The reliability coefficient of all the items of various sections indicated that the self-structured questionnaire was reliable based on the report that data collection instrument with a reliability of 0.70 or higher was reasonable for data collection (Gay *et al.*, 2009). The reliability coefficient was calculated with the use of SPSS. Specifically, part I of the study collected demographic data of study participants on different aspects relating to the challenges confronting teaching and learning of PE. There were 17 items that requested demographic data from study participants.

Section A of part II items collected data on instructional tasks and supervision of PE programme among teachers in the Primary Schools of Volta Region of Ghana. Section A items of the data collection instrument yielded Cronbach's Alpha Reliability Coefficient of .73. This suggested that the items in this section were reliable. According to Gay *et al.* (2009) a reliability of 0.70 or higher indicated that items of the data collection instrument were reliable. Table 3 presents the results of Cronbach's Alpha Reliability Coefficient of Section A items.

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Table 3 - Cronbach's Alpha Reliability Coefficient of Section A Items (Data Related to Instructional Tasks/Supervision of PE Programme)

Cronbach's Alpha	Number of Items	Mean	SD
.73	3	6.12	2.90

Section B of the study collected data on the state of curricular resources for the teaching and learning of PE in the primary schools of Volta Region of Ghana. According to Gay *et al.* (2009) a reliability of 0.70 or higher was necessary in order to accept questionnaire items as reliable for gathering data in actual study. In the current study, the Cronbach's Alpha Reliability Coefficient was .71. This suggested that the items in this section were reliable. Table 4 presents the results of Cronbach's Alpha Reliability Coefficient of Section B items.

Table 4 - Cronbach's Alpha Reliability Coefficient of Section B Items (Data related to the State of Curricular Resources for the Teaching and Learning of PE in the Primary Schools of Volta Region of Ghana)

Cronbach's Alpha	Number of Items	Mean	SD
.71	6	11.67	4.07

Section C of the study collected data on institutional challenges confronting primary school teachers in teaching and learning of PE in the Volta Region of Ghana. For questionnaire items to be deemed reliable for gathering data, Gay *et al.* (2009) suggested a reliability of 0.70 or higher. In the current study, the Cronbach's Alpha Reliability Coefficient was .91. This

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suggested that the items in this section were reliable. Table 5 presents the results of Cronbach's Alpha Reliability Coefficient of Section C items.

Table 5 - Cronbach's Alpha Reliability Coefficient of Section C Items (Data Related to Institutional Challenges Confronting Primary School Teachers in Teaching and Learning of PE in the Volta Region of Ghana)

Cronbach's Alpha	Number of Items	Mean	SD
.91	10	27.97	7.47

Section D items collected data on teacher-related challenges confronting the teaching and learning of PE in the primary schools of Volta Region of Ghana. It is suggested that a reliability of 0.70 or higher was necessary in order to accept questionnaire items as reliable for gathering data (Gay *et al.*, 2009). In the current study, the Cronbach's Alpha Reliability Coefficient was .88. This suggested that the items in this section were reliable. Table 6 presents the results of Cronbach's Alpha Reliability Coefficient of Section D items

Table 6 - Cronbach's Alpha Reliability Coefficient of Section D Items (Data Related to Teacher-Related Challenges Confronting Primary School Teachers in Teaching and Learning of PE in the Volta Region of Ghana)

Cronbach's Alpha	Number of Items	Mean	SD
.88	10	25.84	6.52

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Section E of the data collection instrument elicited responses of subjects on their level of physical education for teaching in the primary schools of Volta Region of Ghana. According to Gay *et al.* (2009) a reliability of 0.70 or higher was necessary in order to accept questionnaire items as reliable for gathering data in actual study. In the current study, the Cronbach's Alpha Reliability Coefficient was .86. This suggested that the items in this section were reliable. Therefore, all the 6 items of this section were retained. Table 7 presents the results of Cronbach's Alpha Reliability Coefficient of Section E items.

Table 7 - Cronbach's Alpha Reliability Coefficient of Section E Items (Data Related to Physical Education Levels of Primary School Teachers in the Volta Region of Ghana)

Cronbach's Alpha	Number of Items	Mean	SD
.86	6	15.98	3.98

There are three different approaches to measure internal consistency reliability. These are Kuder-Richardson, Split-half or Cronbach alpha (Gay *et al.*, 2009). The study adopted Cronbach's alpha because in most cases, numbers were used to represent the responses of the subjects. The use of Cronbach's alpha as a measure of reliability for the data gathering in the study is most appropriate and consistent with the literature that suggests that "If numbers are used to represent the response choices, analysis for internal consistency can be accomplished using Cronbach's alpha (Gay *et al.*, 2009, p.161).

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Data Collection Procedures

Administration of data collection instrument for both the pilot study and the actually study was carried out in January and May-July, 2017 respectively. Week days were mainly used for administration and collection of questionnaire within the districts/municipalities sampled for the study. There were research assistants who acted as data collection coordinators in each of the schools that served as data collection site. This arrangement promoted high return rate of the completed questionnaire. Respondents were advised to complete the questionnaire during break periods (first and second breaks) to avoid interference with instructional hours. Alternatively, respondents could complete the items in the house and submit them to data collection coordinators (school heads or designated teachers) within one week of administration. Precisely, out of 740 cases of questionnaire, 673 (91%) cases were retrieved. Screening of the questionnaire revealed that 636 respondents (95%) out of 673 subjects correctly filled the questionnaire, while 37 (5%) of the cases were rejected because they were not correctly filled. Precisely, the procedures that were followed in data collection process were:

1. Acquisition of ethical clearance from the Institutional Review Board (IRB), University of Cape Coast (UCC).
2. Acquisition of introduction letter from the Head of Health, Physical Education and Recreation (HPER) department.
3. Training of research assistants
4. Visit to data collection sites/submission of introduction letters to District/Municipal Directors of Education.

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5. Collection of pilot data, analyses, presentation and discussion of results.
6. Construction of final data collection instrument for actual study.
7. Data collection, analyses, presentation and discussion of results of the main study.

To begin the research, approval was sought from the Institutional Review Board of the University of Cape Coast for the implementation of the research topic. The study topic was granted ethical clearance with ID number UCCIRB/CES/2016/14.

For easy access to data collection sites, permission was sought by obtaining a letter of introduction from the Head of HPER department of the University of Cape Coast to carry out the study in the selected districts/municipalities in the Volta Region of Ghana. Copies of the introduction letter were dispatched to concerned District/Municipal Directors of Education where data were gathered. The introductory letter helped me to get needed assistance and cooperation from the District/Municipal Directors of Education and study participants. A copy of the letter of introduction is attached as Appendix AE.

As part of data collection process, research assistants were given one day training to prepare them for accurate data gathering for the study. One day training exercise for research assistants was adequate because the specific tasks of research assistants in the data gathering process were not very much involving. Basically, the role of research assistants in the data collection exercise was to help with the administration of questionnaire such as giving out the questionnaire and collecting them back after the respondents had

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responded to them. In all, four research assistants were trained to help with data management for the study. During the training session, research assistants were briefed on the procedures and modalities for administering the questionnaires and how to carry out data entry using Statistical Package for Social Sciences (SPSS).

Letters of introduction and permission letters were submitted to the District/Municipal Directors of Education of schools that were selected for data collection. Specifically, District/Municipal directors were given two weeks advance notice and were reminded again in a week prior to the data collection exercise.

On each day of the administration of data collection instrument, study participants were briefed on the exercise which aimed at collecting accurate, valid and reliable data through honest responses. Subjects were encouraged to do honest and independent work as there were no wrong answers to questions that were answered honestly. During the briefing session, I explained the purpose of the data collection to the study participants. The idea behind the explanations of the purpose of data collection was to encourage honesty in completing the questionnaire so that subjects would be able to provide honest and reliable information. Only the teachers who attended Colleges of Education (CoE)/Training Colleges in the selected schools were permitted to take part in the data collection exercise. Each respondent completed the questionnaire and handed them over to the school head or designated teacher within the school. Study participants were to submit completed questionnaire within one week. This maximized return rate of the questionnaire because one week period did not allow subjects to misplace the questionnaire. For each

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data gathering district/municipality, distribution and collection of questionnaire were carried out within two weeks. It was estimated that subjects spent about 15-30 minutes completing each questionnaire.

Data Processing and Analysis

Pre-data analyses were conducted to screen and clean data from errors and mistakes that probably happened during data entering. Minimum and maximum values for both categorical and continuous variables were checked to ensure that all variables were within the range of possible scores. For instance, for the variable geographical location, the minimum value was 1 and the maximum value was 3. For state of facilities and equipment, the scores ranged from 1 to 6. These variables were checked against code book to ensure that the values were accurate and appropriate for analyses. Cases with outlying values were transformed so that data set achieved graphical normal curve to fulfill parametric assumption of normal distribution of variables. This was particularly necessary for data analyses involving parametric tests such as the t-test, analysis of variance, multivariate analysis of variance, linear regression and Pearson's product-moment correlation coefficient. Identified errors were traced back to the codebook and corrected in line with the actual record of the questionnaire. Missing cases were also identified in the data set and correct values assigned as indicated in the codebook.

Statistical Package for Social Sciences (SPSS) statistics was used to check both the Kurtosis and skewness of scores on continuous variables. The skewness value provided an indication of the symmetry of the distribution of scores on continuous variables while kurtosis provided information on the peakness of the distribution. Kurtosis values below 0 indicated a distribution

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that was relatively flat (too many cases in the extremes). Using histogram, the normality of the distribution of scores was assessed for each variable that was used for parametric statistical tests. As additional measure, the results of the Kolmogorov-Smirnov statistics were used to assess the normality of distributions of scores. In line with the literature, "A non significant result (sig value of more than .05) indicated normality" (Pallant, 2005, p.57). Pallant suggested that the scores of distribution should be reasonably normal. For this reason, assessing normality of the scores was supported by the inspection of the normal probability plots (normal Q-Q plots). According to literature "A reasonably straight line suggests a normal distribution" (Pallant, p.58).

To deal with outliers, there was visual inspection of data to examine frequency distribution of each variable used for parametric tests. Histograms were obtained to look for unusual values. Boxplots were produced to locate cases that were near the median values. In this case, extreme values that were located far from the box were deemed to be outliers and were either eliminated or transformed before analyzing data that involved parametric statistical techniques. By the use of boxplot, identification of outliers became easy because scores that SPSS considered outliers appeared as little circles with ID number attached to each case.

After pre-data analyses, all questionnaire items were analyzed with the aid of Statistical Package for Social Science (SPSS for Windows 2007, Version 21). Analyses of data for research questions involved both parametric and non-parametric statistics. Specifically, descriptive statistics, Independent t-test, Pearson correlation coefficient, Analysis of Variance (ANOVA), Multivariate Analysis of Variance (MANOVA) and Multiple Regression were

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the statistical tools involved in analyzing the research questions of the study. Since data analysis aimed at answering research questions that guided the study, analyses of the data was organized according to the research questions as follow:

Research Question One

What are the institutional challenges confronting primary school teachers in teaching and learning of PE in the Volta Region of Ghana?

Statistical tool for data analysis: Descriptive Statistics (Mean, Standard Deviation).

The essence of this question was to find out about the institutional challenges that served as barriers to providing quality physical education in the primary schools of Volta Region of Ghana. On a 4-point Likert's scale, respondents indicated the extent to which they agreed or disagreed on the perceived institutional challenges confronting the teaching and learning of PE in the primary schools of Volta Region of Ghana.

Descriptive statistics involving mean and standard deviation were used in the analysis of data on this research question. To confirm an issue as institutional challenge, most of the respondents had to agree that the issue really hindered effective teaching and learning of PE. This is based on agreement theory of truth. "Survey as a research design is a process of finding knowledge through the application of agreement theory of truth. The agreement theory posits that when many people agree on an issue, it is probably true" (Ogah, 2013, p.56). Based on this theory, a cluster mean was calculated by summation of item means and divided by the number of items that made up the scale of perceived institutional challenges. Each item was

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compared with the cluster mean to examine whether most of the respondents actually agreed that the issue truly hindered effective teaching and learning of PE in the primary schools of Volta Region of Ghana. If the mean of an item was equal or higher than the cluster mean, a decision was indicated to confirm the case as an institutional challenge that confronted primary school teachers in teaching and learning of PE in the Volta Region of Ghana. On the contrary, if the mean of an item was less than the cluster mean, the case was regarded as unconfirmed institutional challenge in teaching and learning of PE in the Volta Region of Ghana. In related studies, Onyekwere, Samuel, Atuluku and Okeke (2014); Odo and Samuel (2014) used cluster mean to make similar decisions.

Research Question Two

What are the teacher-related challenges confronting the teaching and learning of PE in the Primary Schools of Volta Region of Ghana?

Statistical tool for data analysis: Descriptive Statistics (Mean, Standard Deviation).

The essence of this question was to find out about the teacher-related challenges that hindered the teaching and learning of physical education in the primary schools of Volta Region of Ghana. On a 4-point Likert's scale, respondents indicated the extent to which they agreed or disagreed on the perceived teacher-related challenges that were barriers to teaching and learning of PE in the primary schools of Volta Region of Ghana.

The essence of this question was to find out about the institutional challenges that served as barriers to providing quality physical education in the primary schools of Volta Region of Ghana. On a 4-point Likert's scale, respondents indicated the extent to which they agreed or disagreed on the

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perceived institutional challenges confronting the teaching and learning of PE in the primary schools of Volta Region of Ghana.

Descriptive statistics involving mean and standard deviation were used in the analysis of data on this research question. To confirm an issue as institutional challenge, most of the respondents had to agree that the issue really hindered effective teaching and learning of PE. This is based on agreement theory of truth. "Survey as a research design is a process of finding knowledge through the application of agreement theory of truth. The agreement theory posits that when many people agree on an issue, it is probably true" (Ogah, 2013, p.56). Based on this theory, a cluster mean was calculated by summation of item means and divided by the number of items that made up the scale of perceived institutional challenges. Each item was compared with the cluster mean to examine whether most of the respondents actually agreed that the issue truly hindered effective teaching and learning of PE in the primary schools of Volta Region of Ghana. If the mean of an item was equal or higher than the cluster mean, a decision was indicated to confirm the case as an institutional challenge that confronted primary school teachers in teaching and learning of PE in the Volta Region of Ghana. On the contrary, if the mean of an item was less than the cluster mean, the case was regarded as unconfirmed institutional challenge in teaching and learning of PE in the Volta Region of Ghana. In related studies, Onyekwere *et al.* (2014); Odo and Samuel (2014) used cluster mean to make similar decisions.

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Research Question Three

What is the relationship between the frequency at which PE lessons are taught and curricular related-factors (institutional challenges, teacher-related challenges and adequacy of pre-service education in PE)?

Statistical tool for data analysis: Pearson Correlation Coefficient

The essence of this research question was to find out whether there was strong, weak or no relationship between the frequency at which PE lessons were taught and the institutional challenges, teacher-related challenges and adequacy of pre-service education in PE.

To analyze data on this research question, Pearson correlation coefficient was the preferred choice. Specifically, institutional challenges, teacher-related challenges and adequacy of pre-service education in PE were continuous independent variables; while frequency of PE lessons was continuous dependent variable. Pallant (2005) indicates that "Pearson product-moment coefficient is designed for interval level (continuous) variables" (p.121).

Preliminary analyses were performed to ensure that there was no violation of the parametric assumptions relating to Pearson product-moment correlation. These assumptions of Pearson product-moment correlation related to continuous measurement of variables, approximately normally distributed scores, relationship between variables and absence of significant outliers. On outliers, Pallant (2005) suggests that histograms and boxplots could be inspected to identify potential outliers or out of range scores. "But if the scores drop away in a reasonably even slope then there is probably not too much to worry about" (Pallant, 2005, p.61). Extreme outliers were supposed to be

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indicated with an asterisk. However, in the determination of outliers in this analysis, there were no such extreme cases. Therefore, the assumption of no significant outliers was fulfilled. Appendices F, G, H and J indicate that there were no potential outliers before analyses were run.

Assumption of normally distributed scores was assessed by the inspection of Histogram. Pallant, (2005) suggests that in running Pearson's correlation, variables should be approximately normally distributed. Pallant added that achieving a perfect distribution is rather an uncommon occurrence in research. Exploration of the normality of variables was carried out by the inspection of the Histogram. The inspection of the variables (institutional/teacher-related challenges, adequacy of pre-service education in PE and frequency of PE lessons) indicated that the scores were approximately normally distributed. The actual shapes of the distribution for each variable are provided in Appendices K, L, M and N.

Assessment of normal distribution of scores on teacher-related variable was also supported by the inspection of normal probability plots (labelled Normal Q-Q Plots). According to literature "A reasonably straight line suggests a normal distribution" (Pallant, 2005, p.58). Based on Pallant's assertion, exploration of the dependent variable using normal Q-Q plot achieved normal distribution. Therefore, the assumption of normal distribution of scores was fulfilled. Appendix P graphically presents normal distribution of the scores using normal Q-Q plots.

For graphical exploration of the relationship between the frequency at which PE lessons were taught and curricular related factors (institutional challenges/teacher-related challenges/adequacy of pre-service education in

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PE), scatterplot was created, inspected and represented. An inspection of the scatterplot suggested that there was no evidence of curvilinear relationship between the pairs of variables (institutional challenges and frequency of PE lessons, teacher related challenges and frequency of PE lessons, adequacy of pre-service education in PE and frequency of PE lessons). Pallant 2005 suggested that "If a curved line is evident (suggesting a curvilinear relationship), then Pearson correlation should not be used" (p.124). However, graphical exploration and observation of the scatterplot suggested that there was no such undesirable curvilinear relationship between variables before analyzing data on the research question. Therefore, using Pearson product-moment correlation for analysing these data supports the assertion that when there is no indication of a curvilinear relationship, "it would be appropriate to calculate a Pearson product-moment correlation for these two variables" (Pallant, p.69). Appendices Q, R and S present scatterplot exploration of the observed relationship between frequency at which PE lessons were taught and curricular related factors (institutional/teacher-related challenges/adequacy of pre-service education in PE).

Research Question Four

Is there a significant difference between male and female primary school teachers in engagement time for teaching PE curriculum in the primary schools of Volta Region of Ghana?

Statistical tool for data analysis: Independent t-test

This research question sought to investigate differences male and female primary school teachers with regard to time spent teaching PE curricular content in the primary schools of Volta Region of Ghana. The

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independent t-test was used to test for significance of group differences between male and female primary school teachers. The choice for independent t-test was appropriate because there were two independent groups (male and female primary school teachers) whose mean scores on continuous dependent variable were compared. "An independent samples t-test is used when you want to compare the mean score, on some continuous variable, for two different groups of subjects" (Pallant, 2005, p.205).

Before analyses were ran, variables were graphically explored to ensure that all cases entered into SPSS were correct and that there were no significant outliers. Pallant (2005) suggests that histograms and boxplots could be inspected to identify potential outliers or out of range scores. Observation based on Appendix T revealed that there were no significant outliers that could distort the analyses.

As parametric statistical tool, the use of independent t-test for data analyses assumes that "the scores are reasonably normally distributed, with most of the scores occurring in the centre, tapering out toward the extremes" (Pallant, 2005, p.65). Pallant indicated that achieving a perfect distribution is rather an uncommon occurrence in research.

After data transformation to delete outliers, the dependent variable (time spent in teaching PE) achieved normal distribution of scores. For this research question, data points seemed to sit on their own, suggesting outlying cases. But inspection of boxplot in Appendix Y revealed that there were no potential outliers. Therefore, data points sitting on their own only displayed the underlying characteristics of study participants in relation to the time spent in teaching PE. Checking back to the questionnaire, and the codebook, record

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indicated that most of the subjects did not spend any amount of time teaching PE, while some of the subjects reported that they used as much as 140 minutes or less in teaching PE content per week. These underlying characteristics of participants were responsible for data points sitting on their own as portrayed in Appendix Y. However, this situation did not suggest any problem because 'if the scores drop away in a reasonably even slope then there is probably not too much to worry about" (Pallant, 2005, p.61).The actual shape of the distribution of scores on the dependent variable is presented in Appendix U.

Research Question Five

What is the effect of age and gender on teacher-related challenges confronting teaching and learning of PE in the Volta Region of Ghana?

Statistical tool for data analysis: 2-Way ANOVA

Data were analysed using a two-way analysis of variance (2-way ANOVA) for this research question. The choice of a 2-way ANOVA was based on the fact that there were two categorical independent variables (e.g. Age group: ≤30, 31-38, ≥39; Gender: males/females); and one continuous dependent variable (teacher-related challenges). The dependent variable (DV) in this research question was measured at continuous scale. The 2-way ANOVA allowed testing of significant age and gender differences in terms of teacher-related challenges confronting subjects. The presence of two categorical independent variables at two or more levels and one continuous dependent variable made the use of 2-way ANOVA appropriate in the analysis of the research question. Using a 2-way ANOVA design enabled testing of the main effect for the dependent variable and also explored the possibility of an interaction effect.

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Before running the analyses, data were screened to meet the assumptions of the design. Scores on dependent variable were inspected to ensure that there were no significant outliers that could distort the analyses. Graphical exploration of boxplot in Appendix G suggested that there were no significant outliers.

An inspection of Histogram also revealed that there were no extreme outliers that could distort the analyses. Appendix V presents a Histogram that indicates absence of extreme variables.

To determine the normality of the distribution of the variables, Histogram was created and inspected. Appendix L indicated that most of the scores were in the centre. This supports the assertion that normality of the variables demonstrates that "the scores are reasonably normally distributed, with most of the scores occurring in the centre, tapering out toward the extremes" (Pallant, 2005, p.65).

Assessment of normal distribution of scores on the dependent variable was also supported by the inspection of normal probability plots (labelled Normal Q-Q Plots). According to literature "A reasonably straight line suggests a normal distribution" (Pallant, 2005, p.58). Based on Pallant's assertion, exploration of the dependent variable using normal Q-Q plot achieved normal distribution. Therefore, the assumption on normal distribution of scores was fulfilled. Appendix L graphically presents normal distribution of the scores using normal Q-Q plot.

Levene's test of equality of error variances was conducted to ensure that there was no violation of the assumption of homogeneity. It is suggested that:

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> A significant result (Sig. value less than .05) suggests that the variance of your dependent variable across the groups is not equal. If you find this to be the case in your study it is recommended that you set a more stringent significance level (e.g. .01) for evaluating the results of your two-way ANOVA. That is, you will consider the main effects and interaction effects significant only if Sig value is greater than .01. (Pallant, 2005, p.234).

Using Levene's test of equality of error variances, the Sig. value of .096 indicated that there was no violation of the assumption of homogeneity. This supported the view that "if the Sig value is larger than .05, we can conclude that we have not violated the homogeneity of variances assumption" Pallant (2005, p.234).

Research Question Six

Are there significant differences in the state of curricular resources (quantity of equipment and quality of facilities) for teaching and learning of PE in the primary schools of northern, central and southern Volta Region of Ghana?

Statistical tool for data analysis: 1-Way MANOVA

This research question sought to find out if PE resources were more or short in supply or equitably distributed among the three geographical areas in the Volta Region of Ghana (Northern, Central and Southern Volta). The question was also to assess if there were significant differences in terms of quantity of equipment and quality of facilities for teaching and learning of PE in the primary schools of Northern, Central and Southern Volta Region of Ghana. This would enable appropriate recommendations to be made to

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educational authorities to concentrate more on areas that were challenged in terms of curricular resources (equipment and facilities).

To analyze this research question, data were evaluated to ensure that necessary assumptions for conducting 1-Way MANOVA were met. Specifically, there was only one categorical independent variable (Volta primary school teachers) with three main groups (Northern, Central and Southern Volta) plus two continuous dependent variables (quantity of equipment and quality of facility). On parametric assumptions of MANOVA, the dependent variable should be related in some way, or there should be some conceptual reason for considering them together. In this investigation, both quantity of equipment and quality of facilities are conceptually treated under state of curricular resources. MANOVA, according to Pallant, 2005, compares the variables and reveals mean differences between groups on the combination of dependent variables.

Data was evaluated to ensure that there was independence of observations with no participant being in more than one group. In addition, the sample size was large so that there were more cases in each group than the number of dependent variables. If the sample size is large "some of the tests are not strictly necessary" (Pallant, 2005, p.249).

In practice, MANOVA is reasonably robust to modest violations of normality except where the violations are due to outliers. However, MANOVA tolerates a few outliers, particularly if their scores are not extreme and have a reasonable size data file (Plallant, 2005). Based on these assertions, variables were tested to ensure that there were no significant outliers. Pallant (2005) suggests that histograms and boxplots could be inspected to identify

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potential outliers or out of range scores. "But if the scores drop away in a reasonably even slope then there is probably not too much to worry about" (Pallant, 2005, p.61). Extreme outliers were indicated with an asterisk. However, in the determination of outliers in this analysis, there were no such extreme cases. Therefore, the assumption of no significant outliers was fulfilled. Appendix X and Y indicate that there were no potential outliers before analyses were ran.

To determine the normality of the distribution of scores, Histogram was created and inspected. Pallant (2005) revealed that achieving a perfect distribution is rather an uncommon occurrence in research. However, Appendices Z and AB indicated that most of the scores were in the centre. This supports the assertion of normal distribution that "the scores are reasonably normally distributed, with most of the scores occurring in the centre, tapering out toward the extremes" (Pallant, 2005, p.65).

Pallant also suggests that if there are a number of dependent variables, a series of ANOVA can be performed separately for each dependent variable and that MANOVA works best when the dependent variables are only moderately correlated. "With low correlations, you should consider running separate univariate analysis of variance for your dependent variables. When dependent variables are highly correlated this is referred to as multicollinearity" (Pallant, 2005, pp.247-248).

Even though many assumptions of one-way MANOVA were met, Appendix AC showed evidence of non-linearity; therefore, the assumption of linearity was not satisfied. Precisely, this violated the assumption of linear relationship between dependent variables. Due to low correlation between

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these variables, separate univariate analyses of variance for each dependent variable were run.

Chapter Summary

In summary, this chapter presented methods that were used for data collection and analyses of research questions. The topics covered included research design, study area, population, sampling procedure, data collection instruments, data collection procedures, data processing and analysis and chapter summary. The research design for the study was cross-sectional descriptive survey. The design was chosen because the research involved studying a group of people by collecting and analyzing data considered to be representative of the entire study population. This design allowed generalization of the results from the representative sample and made claims about the population of the study.

Volta region was chosen as the study area. It was the longest and the only region that cut across Ghana from the northern to southern part. The characteristics of study participants (teachers) from the Volta Region of Ghana were more fairly representative of the study population of Ghanaian teachers than other regions. The target population for this study was teachers of the primary schools in the Volta Region of Ghana. These teachers had different ages that ranged from 21 to 60 years and were about 9,165 in the study area. All subjects (teachers) were employees of Ghana Education Service (GES). A sample size of 636 subjects was drawn from a multistage sampling technique. The instrument for data collection was researcher's designed questionnaire. This questionnaire was self structured to comprise of six sections with a total of 52 items that were capable of eliciting responses used to answer research

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questions of the study. It was estimated that subjects used about 15 to 30 minutes to complete the items. The self-structured questionnaire was subjected to a pilot study. Three senior lecturers of the University of Cape Coast validated the instrument. Their judgments and suggestions helped to reconstruct the final instrument for the actual study. The construction of questionnaire was also supervised by the principal supervisor of this study. This served as additional measure that enhanced accuracy and suitability of the instrument for collecting valid and accurate data. Cronbach's alpha reliability was used to determine how items of the questionnaire related as a group.

Data collection for pilot study and actual study took place in January and May-July, 2017 respectively. Week days were mainly used to administer questionnaire to respondents. Teachers were advised to complete the questionnaire in the house or use first and second breaks of school hours to complete the questionnaire. This was to avoid interference with instructional hours. Completed questionnaire were collected within one week of administration.

All items from the self-structured questionnaire were analyzed with the aid of Statistical Package for Social Science (SPSS) version 21 for widows 2007. Pre-data analyses were conducted to screen and clean data collected from the questionnaire. The SPSS analyzed the data using descriptive statistics such as the means, frequencies, standard deviations, degrees of freedom, percentages and graphs. Both parametric and non-parametric statistics were also obtained using SPSS. Precisely, presentation of results was organized according to the research questions of the study.

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As study limitations, it was observed that some of the teachers were not available in some of the schools where data were collected. In few cases, teachers were present but did not accept to be part of the study. In addition, not all the questionnaires were returned for the study. Out of 740 questionnaire cases, 673 (91%) cases were retrieved. Screening of the questionnaire revealed that 636 respondents (95%) out of 673 subjects correctly filled the questionnaire, while 37 (5%) of the cases were rejected because they were not correctly filled.

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CHAPTER FOUR

RESULTS AND DISCUSSION

The purpose of this study was to investigate the perceived challenges confronting primary school teachers in teaching and learning of physical education in the Volta Region of Ghana. The research design for the study was cross-sectional descriptive survey. The design was chosen because the research involved studying a group of people by collecting and analyzing data considered to be representative of the entire study population.

The target population for the study was teachers in the primary schools of Volta Region of Ghana. These teachers had different ages that ranged from 21 to 60 years and were about 9,165 in the study area. All subjects (teachers) were employees of Ghana Education Service (GES). A sample size of 636 subjects was drawn from a multistage sampling technique.

The instrument for data collection was researcher's designed questionnaire with a total of 52 items that elicited responses for answering research questions of the study. The self-structured questionnaire was subjected to a pilot study. Three university lecturers were consulted to validate the instrument. Their judgments and suggestions helped to reconstruct the final instrument for the actual study. The construction of questionnaire was also supervised by the principal supervisor of this study to enhance accuracy and suitability of the instrument for collecting valid and accurate data. Cronbach's alpha reliability was used to determine how items of the questionnaire related as a group.

All items from the self-structured questionnaire were analyzed with the aid of Statistical Package for Social Science (SPSS) version 21 for widows

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2007. Pre-data analyses were conducted to screen and clean data collected from the questionnaire. The data were analyzed using descriptive statistics such as the means, frequencies, standard deviations, degrees of freedom, percentages and graphs. Both parametric and non-parametric statistics were also obtained using SPSS. Precisely, presentation of results was organized according to the research questions of the study.

Research Question 1: What are the Institutional Challenges Confronting Primary School Teachers in Teaching and Learning of PE in the Volta Region of Ghana?

Table 8 presents results of the institutional challenges confronting primary school teachers in teaching and learning of PE in the Volta Region of Ghana. Descriptive statistics involving means and standard deviations were used to analyse data on the research question. To confirm an issue as institutional challenge, most of the respondents had to agree that the issue really hindered effective teaching and learning of PE. This is based on agreement theory of truth. "The agreement theory posits that when many people agree on an issue, it is probably true" (Ogah, 2013, p.56). Based on this theory, a cluster mean was calculated by summation of item means and divided by the number of items that made up the scale of perceived institutional challenges. Each item was compared with the cluster mean to examine whether most of the respondents actually agreed that the issue truly hindered effective teaching and learning of PE in the primary schools of Volta Region of Ghana. In related studies, Onyekwere *et al.* (2014); Odo and Samuel (2014) used cluster mean to make similar decisions.

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Analyses of the results suggested that out of 10 perceived institutional challenges investigated, six had their means equal or higher than the cluster mean of 2.80 and were confirmed as actual institutional challenges confronting primary school teachers in teaching and learning of PE in the Volta Region of Ghana. Precisely, the study revealed that actual institutional factors that hindered teaching and learning of PE included: access to equipment for teaching PE (2.84±1.033), quality of facilities for teaching PE programme (2.85±1.026), access to supplies for teaching PE (2.89±1.022), funding/budgetary constraints for PE programme (2.91±1.067), lack of access to training/professional development in PE (2.93±0.821.017) and supervision of PE programmes (2.90±1.018). However, the means of four items: large class for teaching PE (2.52±.978), crowded curriculum (2.55±.949) support from staff members (2.79±.973) were less than the cluster mean of 2.80; therefore, were not found to be institutional challenges that hindered teaching and learning of PE in the primary schools of Volta Region of Ghana. Evidently, the greatest institutional challenge as reported by subjects was lack of access to professional training in PE (2.93±1.067), with the least perceived challenge attributed to large class size (2.52±.978).

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Table 8 - Institutional Challenges Confronting Primary School Teachers in Teaching and Learning of PE in the Volta Region of Ghana

Statement	Mean	SD	Decision
Access to equipment	2.84	1.033	Confirmed Challenge
Quality of facilities	2.85	1.026	Confirmed Challenge
Access to supplies	2.89	1.022	Confirmed Challenge
Funding/budgetary constraints	2.91	.978	Confirmed Challenge
Large class	2.52	1.067	Unconfirmed Challenge
Crowded curriculum	2.55	.949	Unconfirmed Challenge
Support from other Staff members	2.79	.973	Unconfirmed Challenge
Professional training in PE	2.93	1.067	Confirmed Challenge
Priority for other subjects	2.79	.949	Unconfirmed Challenge
Supervision of PE programmes	2.90	1.018	Confirmed Challenge
Cluster mean	2.80		

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Research Question 2: What are the Teacher-Related Challenges Confronting the Teaching and Learning of PE in the Primary Schools of Volta Region of Ghana?

Table 9 presents results of the teacher-related challenges confronting primary school teachers in teaching and learning of PE in the Volta Region of Ghana. Descriptive statistics involving means and standard deviations were used to analyse data on the research question. To confirm an issue as teacher-related challenge, most of the respondents had to agree that the issue really hindered effective teaching and learning of PE. This is based on agreement theory of truth. "The agreement theory posits that when many people agree on an issue, it is probably true" (Ogah, 2013, p.56). Based on this theory, a cluster mean was calculated by summation of item means and divided by the number of items that made up the scale of perceived institutional challenges. Each item was compared with the cluster mean to examine whether most of the respondents actually agreed that the issue truly hindered effective teaching and learning of PE in the primary schools of Volta Region of Ghana. In related studies, Onyekwere *et al.* (2014); Odo and Samuel (2014) used cluster mean to make similar decisions.

According to the study, teacher-related challenges that impeded teaching and learning of PE in the Volta Region of Ghana included: planning for PE lessons (2.59±.974), training/knowledge in PE (2.62±.904), qualification for teaching PE (2.62±.941), provision of safety for children in PE Lessons (2.64±.915), Attitude toward PE (2.59±.929) and accountability for other subjects (2.80±.943). However, the study could not find four items whose means were less than the cluster mean of 2.58 as actual teacher-related challenges confronting teaching and learning of PE in the Volta Region of

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Ghana. These unconfirmed teacher-related challenges related to: confidence in teaching PE (2.53±.917), interest in teaching PE (2.55±.939), perception of the value of PE (2.48±.945) and gender stereotyping (2.40±.921. Evidently, the greatest teacher-related challenge as reported by subjects was accountability for other subjects (2.80±.943), with the least perceived challenge attributed to gender stereotyping (2.40±.921).

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Table 9 - Teacher-Related Challenges Confronting the Teaching and Learning of PE in the Primary Schools of Volta Region of Ghana

Statement	Mean	SD	Decision
Ability to plan for PE lessons	2.59	.974	Confirmed Challenge
Training/knowledge in PE	2.62	.904	Confirmed Challenge
Confidence in teaching PE	2.53	.917	Unconfirmed Challenge
Interest in PE	2.55	.939	Unconfirmed Challenge
Perception of the value of PE	2.48	.945	Unconfirmed Challenge
Expertise/qualification for teaching PE	2.62	.941	Confirmed Challenge
Gender stereotyping	2.45	.921	Unconfirmed Challenge
Providing safety for children in PE	2.64	.915	Confirmed Challenge
Attitude toward PE	2.59	.929	Confirmed Challenge
Accountability for other subjects	2.80	.943	Confirmed Challenge
Cluster mean	2.58		

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Research Question 3: What is the Relationship between the Frequency at which PE Lessons are Taught and Curricular Related-Factors (Institutional Challenges, Teacher-Related Challenges and Adequacy of Pre-Service Education in PE)?

The research question sought to find out whether there was strong, weak or no relationship between the frequency at which PE lessons were taught and curricular related factors (institutional challenges, teacher-related challenges and adequacy of pre-service education in PE). All variables were measured on continuous scale. Specifically; institutional challenges, teacher-related challenges and adequacy of pre-service education in PE were continuous independent variables; while frequency of PE lessons was continuous dependent variable.

Pre-data analyses were conducted to screen and clean data from errors and mistakes that probably occurred during data entering. Data were also explored to eliminate cases with unusual or extreme values (outliers). An inspection of the scatterplot suggested that there was no undesirable curvilinear relationship between variables.

The result for the relationship between frequency of PE lessons and institutional challenges is presented in Table 10. The results suggested that there was a small, negative and statistically significant correlation between frequency of PE lessons and perceived institutional challenges ($r=-.078$, $n=636$, $p=.048$). Negative correlation in this study meant that high level of scores in one variable was associated with low level of scores in the other variable or vice versa. Therefore, an increase in institutional challenges was associated with a decrease in the frequency at which PE lessons were taught in the primary schools of Volta Region of Ghana. Intercorrelation between

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components of institutional factors and frequency of PE lessons is attached as Appendix B.

Table 10 - Relationship between Perceived Institutional Challenges and the Frequency at which PE Lessons were Taught in the Primary Schools of Volta Region of Ghana

Variable		Frequency of PE Lessons
Institutional Challenges	Pearson's Correlation	-.078*
	Sig. (2-tailed)	.048
	N	636

* Significant at the 0.05 level (2-tailed)

The result for the relationship between frequency of PE lessons and teacher-related challenges is presented in Table 11. Pearson product-moment correlation coefficient revealed that there was a small, negative correlation between perceived teacher-related challenges and the frequency of PE lessons, which was statistically significant (r=-.087, n=636, p=.029). This meant that a decrease in teacher-related challenges was associated with an increase in the frequency at which PE lessons were taught in the primary schools of Volta Region of Ghana. Intercorrelation between components of teacher-related factors and frequency of PE lessons is attached as Appendix C.

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Table 11 - Relationship between Perceived Teacher-Related Challenges and the Frequency at which PE Lessons were Taught in the Primary Schools of Volta Region of Ghana

Variable		Frequency of PE Lessons
Teacher-Related Challenges	Pearson Correlation	-.087*
	Sig. (2-tailed)	.029
	N	636

* Significant at the 0.05 level (2-tailed)

Table 12 presents Pearson's product-moment correlation between adequacy of pre-service education in PE and the frequency at which PE lessons were taught in the primary schools of Volta Region of Ghana.

Using Pearson's product-moment correlation coefficient, the study revealed that there was a small, positive and statistically significant relationship between adequacy of pre-service education in PE and the frequency at which PE lessons were taught in the primary schools of Volta Region of Ghana ($r=.166$, $n=636$, $p=.000$). This result suggested that high level of adequacy of pre-service education in PE would result in high frequency at which PE lessons were taught in the primary schools of Volta Region of Ghana.

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Table 12 - Relationship between Adequacy of Pre-service Education in PE and the Frequency at which PE Lessons were Taught in the Primary Schools of Volta Region of Ghana

Variable		Adequacy of Pre-Service Education in PE
Frequency of PE Lessons	Pearson's Correlation	.166**
	Sig. (2-tailed)	.000
	N	636

**. Correlation is significant at the 0.01 level (2 tailed)

Figure 4 presents descriptive statistics on adequacy of pre-service education in PE. The study revealed variations in rating the quality of PE programmes in teacher training institutions. Precisely, 127 teachers (20.0%), 119 teachers (18.7%) and 113 teachers (17.8%) rated the adequacy of PE programme that prepared them as teachers of PE in the primary schools of Volta Region of Ghana as very poor, poor and fair respectively. Additionally, 194 teachers (30.5%), 70 teachers (11.0%) and 13 teachers (2.0%) rated the adequacy of PE programme as very good and excellent respectively.

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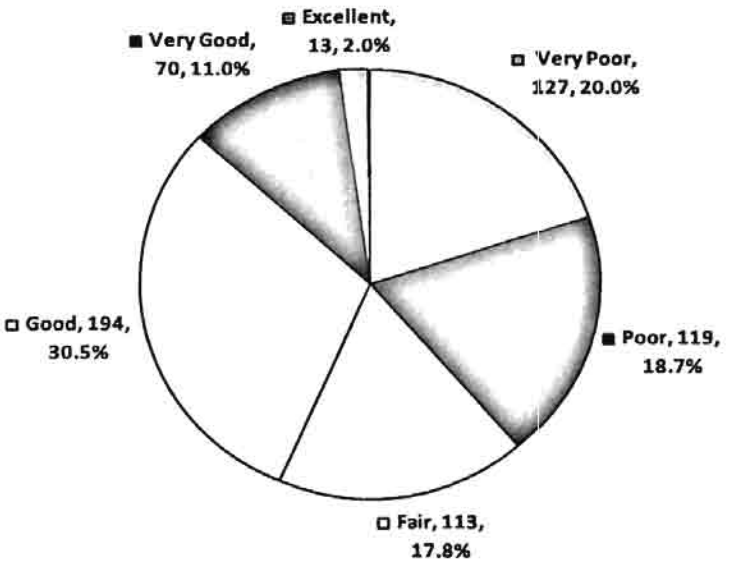

Figure 4 - Adequacy of pre-service education in PE

Research Question 4: Is there a Significant Difference between Male and Female Primary School Teachers in Engagement Time for Teaching PE Curriculum in the Primary Schools of Volta Region of Ghana?

Critical to teaching and learning of PE was the engagement time. Teachers were asked to indicate time spent engaging pupils in learning PE curriculum in a typical school week. Pre-data analyses were conducted to clean data from errors and mistakes that probably occurred during data entering. Data were also explored to eliminate cases with unusual or extreme values (outliers). There were no significant outliers in the data as assessed by the inspection of boxplot. Variables were checked to ensure that the dependent variable was measured on continuous scale with the independent variable consisting of two categorical independent groups. Scores on engagement time for both upper and lower primary school teachers were normally distributed as assessed by the Histogram. There was no violation of independence of observation as I ensured that different subjects were in each group with no subject being in more than one group.

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Table 13 presents difference between male and female primary school teachers in time spent teaching PE Curriculum. Using independent t-test statistics, the results of the difference between male and female primary school teachers in time spent teaching PE in the Volta Region of Ghana indicated that the difference in the mean score of male primary school teachers (M=37.67, SD=24.49) was not statistically significant (p=.088, df=634) from female primary school teachers (M=34.27, SD=23.73).

Table 13 - Difference between Male and Female Primary School Teachers in Time Spent Teaching PE Curriculum

	Gender	N	Mean	SD	t-value	Df	P-Value
Time Spent in Teaching PE Curriculum	Male	228	37.67	24.49	1.710	634	.088
	Female	408	34.27	23.73			

Significant at the 0.05 level

Research Question 5: What is the Effect of Age and Gender on Teacher-Related Challenges Confronting Teaching and Learning of PE in the Volta Region of Ghana?

Table 14 and 15 present the results of a two-way between groups analysis of variance that was conducted to explore the effect of age and gender on teacher-related challenges confronting teaching and learning of PE in the Volta Region of Ghana. Data were screened to ensure that values of all cases were correct and that there were no extreme outliers that could distort the analysis. Subjects were divided into three groups according to their age (Group 1: ≤30 years; Group 2: 31-38 years; Group 3: 39 years and above).

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The results showed that there was no significant main effect for age, F(2, 630)=2.022, p=.133 and Gender, F(1, 630)=3.080, p=.080. The interaction between factors was also not significant, F(2, 630)=.216, p=.806.

Table 14 - Two-Way ANOVA Results for the Effect of Age and Gender on Teacher-Related Challenges Confronting Teaching and Learning of PE in the Volta Region of Ghana

Source	Df	MS	F	P-value
Age	2	85.38	2.022	.133
Gender	1	130.034	3.080	.080
Age x Gender	2	9.105	.216	.806
Error	630	42.224		
Total	635			

Source: *Field Survey, 2017*

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Table 15 - Means and Standard Deviations of Scores on Teacher-Related Challenges for Age and Gender Variables

	Males		Females	
	M	SD	M	SD
Age				
≤ 30 years	24.39	6.81	25.77	6.94
31–38 years	25.49	6.51	26.03	6.56
≥ 39 years	25.93	6.71	26.86	5.57

Research Question 6: Are there Significant Differences in the State of Curricular Resources (Quantity of Equipment and Quality of Facilities) for Teaching and Learning of PE in the Primary Schools of Northern, Central and Southern Volta Region of Ghana?

Table 16 presents the results of a study that examined differences in the state of curricular resources (quantity of equipment and quality of facilities) among primary school teachers in the northern, central and southern Volta Region of Ghana. Pre-data analyses were conducted to screen and clean data from errors and mistakes that probably occurred during data entering. Data were also explored to eliminate outliers. Data were evaluated to ensure that assumptions for conducting 1-Way MANOVA were met. Data satisfied the assumptions of normal distribution of scores on the dependent variables, independence of observations, absence of significant outliers and homogeneity of equal variances. An inspection of the scatterplot revealed that there was low correlation between the dependent variables. Due to this violation of linearity assumption, separate univariate analyses of variance for each dependent variable were run.

After data screening and cleaning, a one-way analysis of variance (ANOVA) was performed to determine differences in the quantity of

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equipment for teaching and learning of PE in the primary schools of northern, central and southern Volta Region of Ghana. The results showed that there was no statistically significant difference among the three groups: [F(2, 633)=2.065, p=.128].

Table 16 - One-Way ANOVA for Differences among Primary School Teachers in the Northern, Central and Southern Volta in Terms of Quantity of Equipment

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.701	2	.851	2.065	.128
Within Groups	260.726	633	.412		
Total	262.428	635			

Source: *Field survey, 2017*

Table 17 presents a One-way ANOVA that was used to determine differences in the quality of facilities for teaching and learning of PE in the primary schools of northern, central and southern Volta. The results suggested that there was no statistically significant difference among the three groups [F(2, 633)=.731, p=.482].

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Table 17 - One-Way ANOVA for Differences among Primary School Teachers in the Northern, Central and Southern Volta in Terms of Quality of Facilities for the Teaching of PE Programme

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.575	2	1.288	.731	.482
Within Groups	1115.731	633	1.763		
Total	1118.307	635			

Source: *Field Survey, 2017*

Descriptive statistics was used to assess adequacy of equipment for teaching PE programme. Figure 5 suggests that there were no sufficient equipment for teaching PE in the primary schools of Volta Region of Ghana. Out of 636 respondents, 443 (69.7%) indicated that equipment for teaching PE were insufficient; 162 respondents (25.5%) said there were limited; 21 respondents (3.3%) were of the view that equipment for PE programme were sufficient. Additionally, 8 respondents (1.3%) and 4 respondents (.3%) indicated above average and extensive respectively for equipment situation for teaching PE curriculum.

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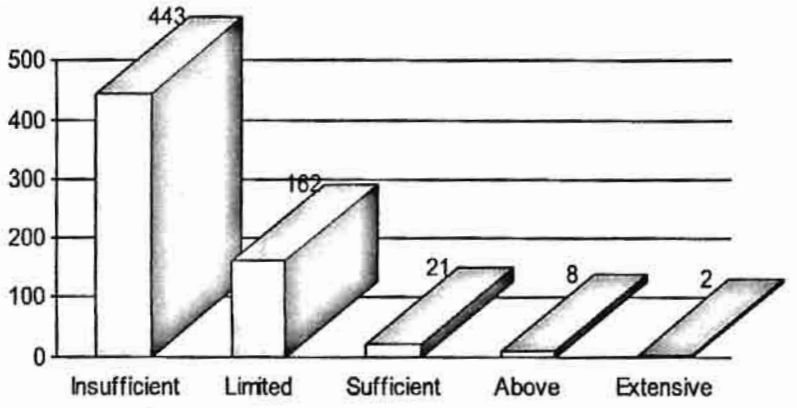

Figure 5 – Quantity of equipment for teaching PE programme

Figure 6 presents the result on the quantity of facilities for the teaching of PE programme in the primary schools of Volta Region of Ghana. A descriptive analysis of the data suggested that out of 636 study participants, 373 subjects (58.6%) indicated that the facilities were extensive for PE programme. Subjects numbering 206 (32.4%), 41 (6.4%), 13 (2.0%), and 3 (.5%) rated facilities for PE programme as insufficient, limited, sufficient and above average respectively.

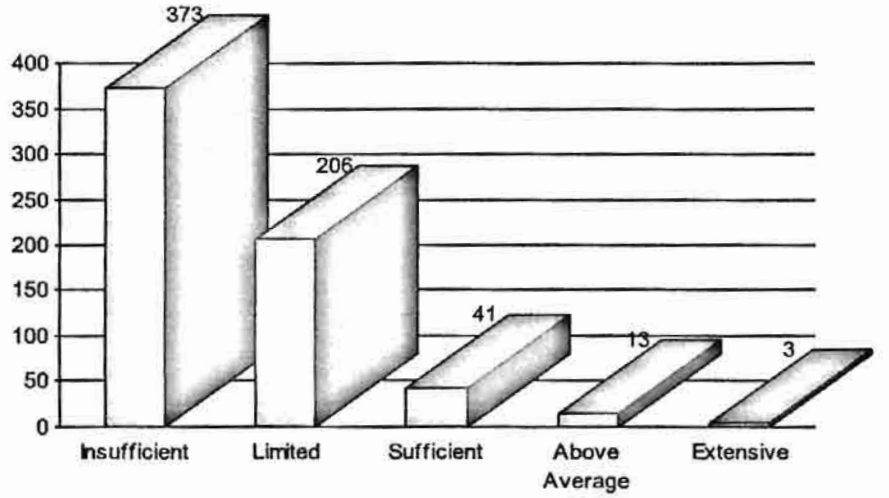

Figure 6 – Quantity of facilities for teaching PE programme

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Figure 7 presents quantity of supplies for teaching and learning of PE programme as rated by the respondents. According to the study, 389 subjects (61.2%) rated supplies situation as insufficient; 175 subjects (27.5%) were of the view that supplies for teaching PE were limited and 43 subjects (6.8%) indicated that supplies were sufficient. The number of subjects who rated supplies situation as above average and extensive were 26 (4.1%) and 3 (.5%) respectively.

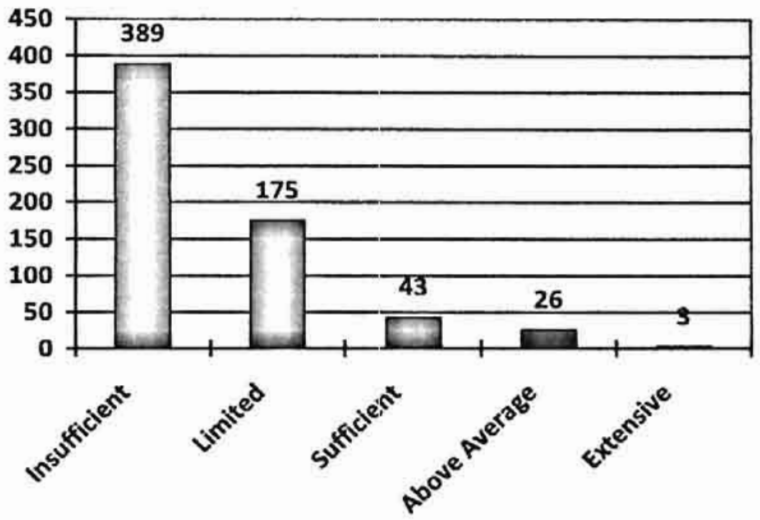

Figure 7 – Quantity of supplies for teaching PE programme

The rating of the quality of equipment for teaching and learning of PE curricular programme in the primary schools of Volta Region of Ghana is shown in figure 8. Subjects were asked to rate the quality of equipment from 1 (very poor) to 6 (excellent). Equipment situation was rated as very poor by 199 subjects (31.3%); poor by 139 subjects (21.9%), fair by 136 subjects (21.4%), good by 125 subjects (19.7%); very good by 30 subjects (4.7%) and excellent by 7 subjects (1.1%).

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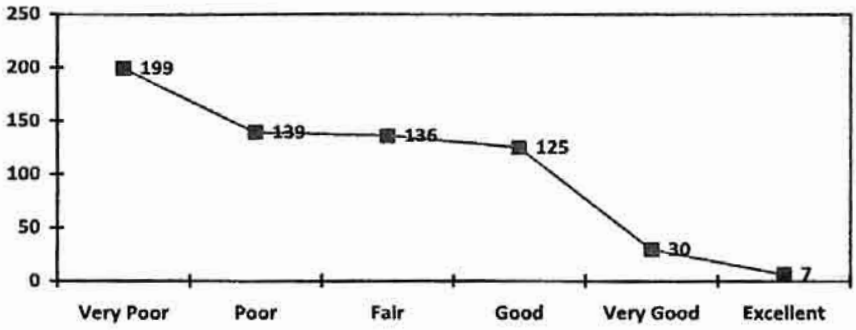

Figure 8 - Quality of equipment for teaching PE programme

Figure 9 presents the facilities for the implementation of PE programme. A total of 195 subjects (30.7%); 162 subjects (25.5%); 122 subjects (19.2%); 117 subjects (18.4%), 24 subjects (3.8%) and 16 subjects (2.5%) rated the quality as very poor, poor, fair, good, very good and excellent respectively.

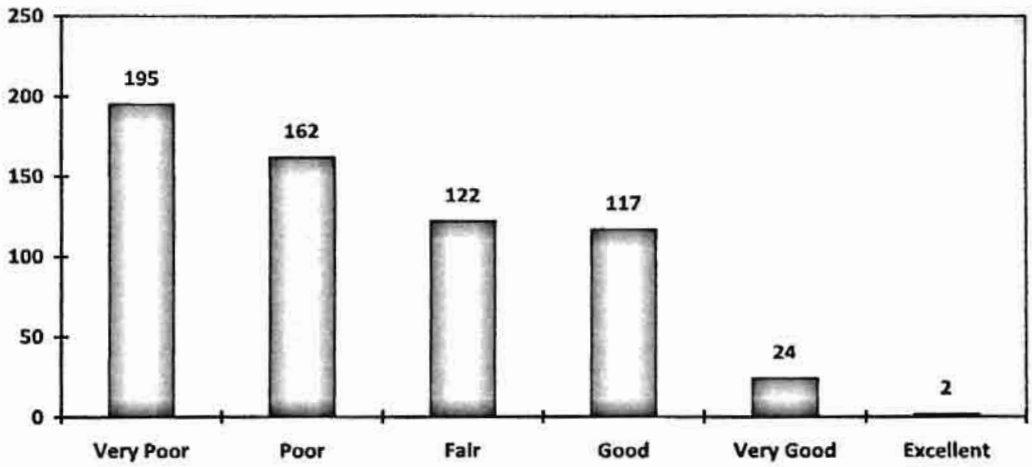

Figure 9 - Quality of facilities for teaching PE programme

Figure 10 presents results relating to the quality of supplies for the implementation of PE programme. It was found out that 243 subjects (38.2%) and 150 subjects (23.6%) rated the quality of supplies as very poor and poor respectively; while 109 subjects (17.1%) and 105 subjects (16.5%) rated the quality of supplies as fair, and good respectively. Additionally, 20 subjects

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(3.1%) and 9 subjects (1.4%) were of the view that the quality of supplies for the implementation of PE curriculum in the Volta Region of Ghana was very good and excellent respectively.

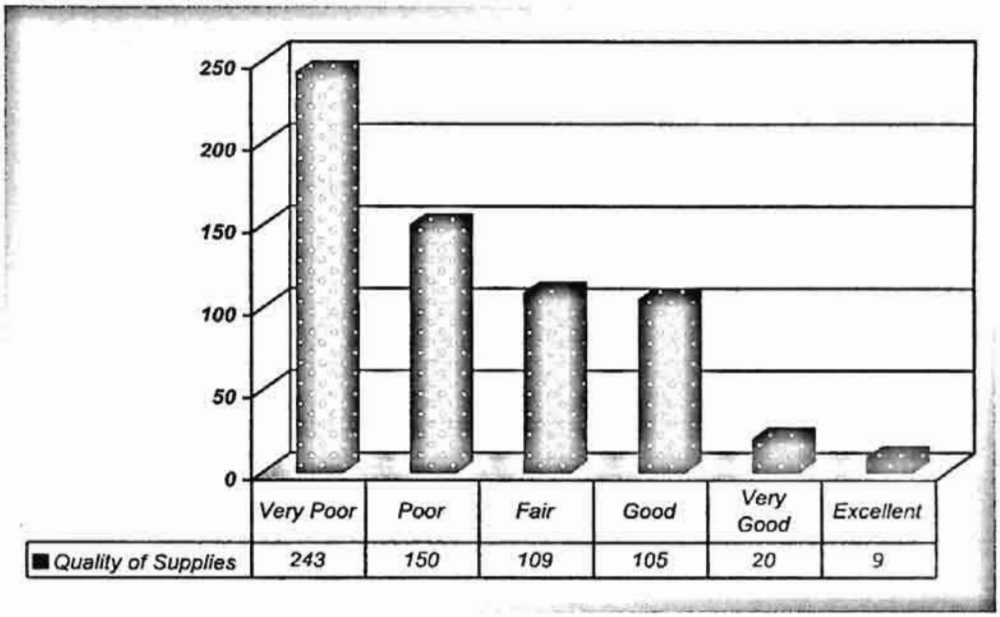

Figure 10 - Quality of supplies for teaching PE programme

Table 18 presents results based on the extent to which the curriculum of Colleges of Education (CoE) prepared teachers who were capable of teaching PE curriculum in the primary schools of Volta Region of Ghana. Descriptive statistics involving means and standard deviations were used to analyse data on the research question.

To confirm whether teachers met curriculum standards for teaching PE, most of the respondents were required to agree on the stated issue that spelt out the standard. This is based on agreement theory of truth. "The agreement theory posits that when many people agree on an issue, it is probably true" (Ogah, 2013, p.56). Based on this theory, a cluster mean was calculated by summation of item means and divided by the number of items

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that composed of the scale for the curriculum standards. The result yielded a cluster mean of 2.66 which was used to compare with each of the item mean to determine the extent to which teachers were adequately prepared for teaching PE in the primary schools of Volta Region of Ghana. In related studies, Onyekwere, Samuel, Atuluku and Okeke (2014); Odo and Samuel (2014) used cluster mean to make similar decisions.

The study indicated that subjects exhibited behaviours that respected self and others in PA setting (2.81±.849) and that they valued physical activity (PA) for health (3.22±.86. However, the study revealed low extent of teachers' skills sufficiency for performing a variety of physical activities (2.51±.865). The study also revealed that teachers possessed low understanding of movement concepts for performing PA (2.48±.857). According to the results, teachers did not participation in PA regularly (2.38±.906). Subjects also reported that they had achieved low health enhancing level of physical fitness (2.58±.895).

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Table 18 - Capabilities of Primary School Teachers in Teaching PE in the Volta Region Ghana of PE in the Primary Schools of Volta Region of Ghana

Statement	Mean	SD	Decision
Skill sufficiency for performing a variety of physical activities (PA)	2.51	.869	Low Extent
Understanding of movement concepts, principles, strategies as applied to PA setting	2.48	.857	Low Extent
Regular participation in PA	2.38	.906	Low Extent
Achievement of health enhancing level of physical fitness	2.58	.895	Low Extent
Ability to exhibit behaviours that respect self and others in PA setting	2.81	.849	Great Extent
Value PA for health, enjoyment and social interaction	3.22	.86	Great Extent
Cluster mean	2.66		

To predict the frequency of PE lessons using three variables, standard multiple regression analyses were performed. There were pre-data analyses to screen and clean data from errors and mistakes that probably occurred during data entering. Data were also explored to eliminate cases with unusual or extreme values (outliers). Tests were conducted to ensure that assumptions of linearity, no significant outliers and approximately normally distributed variables were met. Both the independent variables (predictor variables) and dependent variable (outcome variable) were measured on continuous scale. The independent variables were years of teaching, age of teachers and adequacy of pre-service education in PE; while the dependent variable was frequency of PE lessons.

Table 19 shows Regression analysis of three independent variables (years of teaching, age of teachers and adequacy of pre-service education in

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PE) in explaining the dependent variable (frequency of PE lessons). It was observed that years of teaching, age of teachers and adequacy of pre-service education in PE explained 4.6% of the variance in the frequency of PE lessons. Of these three independent variables, adequacy of pre-service education in PE made the largest unique contribution (beta=.160), indicating a unique contribution of 16% to explaining the dependent variable (frequency of PE lessons), when the contribution by all other variables in the model is controlled for. The unique contribution of age (beta=.022, p=.788) and years of teaching experience (beta=.116, p=.157) to the prediction of frequency at which PE lessons were taught did not reach statistical significant level.

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Table 19 – Multiple Regression Analysis between Frequency of PE Lessons and Years of Teaching, Age and Adequacy of Pre-service Education in PE

Variables	Unstandardized Coefficients		Standardized Coefficients	t-value	p-value
	B	Std. Error	Beta		
(Constant)	1.653	.240		6.899	.000
Years of teaching	.013	.009	.116	1.417	.157
Age	.013	.008	.022	.269	.788
Adequacy of Pre-Service Education in PE	.120	.029	.160	4.123	.00
Multiple R value	.214a		F value		10.142
	.046		P value		.000b
R Square value	.041		Durbin-Watson		1.511
Adjusted R Square					

a. Predictors: (Constant), Years of Teaching, Age, Adequacy of Pre-Service Education in PE

b. Dependent Variable: Frequency of PE Lessons

Significant at the 0.05 level

Included in the analyses was the extent to which teachers' years of teaching experience predicted the frequency at which PE lessons were taught in the primary schools of Volta Region. Pre-data analyses were conducted to screen and clean data from errors and mistakes that probably occurred during data entering. Data were also explored to eliminate cases with unusual or

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extreme values (outliers). Tests were conducted to ensure that assumptions of linearity, no significant outliers and approximately normally distributed variables were met. The linear regression provided an acceptable description of the data because both the independent variable (predictor variable) and dependent variable (outcome variable) were measured on continuous scale and that there were no violations of the assumptions. The independent variable was years of teaching; while the dependent variable was frequency of PE lessons.

Based on the results, teaching experience of study subjects explained only 2% of the variance in the frequency of PE lessons (R^2=.020). The overall contribution of years of teaching to the frequency at which PE lessons were taught was 14.2% (Beta=.142). This meant that other factors other than teachers' years of teaching experience account for 85.8% in explaining the frequency at which PE lessons were taught in the primary schools of Volta Region of Ghana. The study showed that the contribution of the independent variable (years of teaching) was statistically significant (Beta=.142, p=.000). The study revealed a significant regression equation: (f(1,634) = 13.005, p=.000), with an R^2 of .020. Table 20 presents the results.

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Table 20 - Linear Regression Analysis between Years of Teaching and Frequency of PE Lessons

Variables	Unstandardized Coefficients		Standardized Coefficients	t-value	p-value
	B	Std. Error	Beta		
(Constant)	2.064	.063		32.535	0.000
Years of Teaching	.016	.004	.142	3.606	.000
R value	.145a		F value		13.005
R Square value	.020		P value		.000b
Adjusted R Square	.019		Durbin-Watson		1.502

a. Predictor: (Constant), Years of Teaching

b. Dependent Variable: Frequency of PE Lessons

* Significant at p<.05

Standard multiple regression was calculated to predict the frequency of PE lessons based on the state of curricular (quantity of equipment, quantity of facilities, quantity of supplies, quality of equipment, quality of facilities, and quality of supplies) for teaching and learning of PE in the primary schools of Volt Region of Ghana. There were pre-data analyses to screen and clean data from errors and mistakes that probably occurred during data entering. Data were also explored to eliminate cases with unusual or extreme values (outliers). Tests were conducted to ensure that assumptions of linearity, absence of significant outliers and approximately normally distributed variables were met. Both the independent variables (predictor variables) and dependent variable (outcome variable) were measured at continuous scale level. The independent variables were quantity of equipment, quantity of

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facilities, quantity of supplies, quality of equipment, quality of facilities, and quality of supplies; while the dependent variable was frequency of PE lessons.

The predictors of the model (quantity of equipment, quantity of facilities, quantity of supplies, quality of equipment, quality of facilities, and quality of supplies), explained 0.7% of the variance in the frequency of PE lessons. Of these predictor variables, quality of equipment made the largest unique contribution (beta=.079), indicating a unique contribution of 7.9% to explaining the frequency of PE lessons, when the contribution by all other variables in the model is controlled for. However, the contribution of the quality of facility to the model was not significant (p=.605). Again, the unique contribution of quantity of equipment (beta=-.008, p=.874), quantity of facilities (beta=-.041, p=-.415), quantity of supplies (beta=.003, p=.943), quality of facilities (beta=-.018, p=.713) and quality of supplies (beta=.026, p=.588) to the prediction of the frequency at which PE lessons were taught did not reach statistical significant level (p>.05).

Table 21 presents the multiple regression analysis of predictor variables (quantity of equipment, quantity of facilities, quantity of supplies, quality of equipment, quality of facilities, and quality of supplies) in explaining variance in the dependent variable (frequency of PE lessons).

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Table 21 – Multiple Regression Analysis between Frequency of PE Lessons and Quantity of Equipment, Quantity of Facilities, Quantity of Supplies, Quality of Equipment, Quality of Facilities and Quality of Supplies

Variables	Unstandardized Coefficients		Standardized Coefficients	t-value	p-value
	B	Std. Error	Beta		
(Constant)	2.170	.130		16.687	.000
Quantity of Equipment	-.013	.080	-.008	-.159	.874
Quantity of Facilities	-.056	.069	-.041	-.815	.415
Quantity of Supplies	.004	.056	.003	.071	.943
Quality of Equipment	.063	.040	.079	1.567	.118
Quality of Facilities	-.014	.039	-.018	-.369	.713
Quality of Supplies	.021	.038	.026	.542	.588
Multiple R value	.085b		F value	.756	
R Square value	.007		P value	.605b	
Adjusted R Square	-.002		Durbin-Watson	1.474	

a. Predictors: (Constant), quantity of equipment, quantity of facilities, quantity of supplies, quality of equipment, quality of facilities, and quality of supplies

b. Dependent Variable: Frequency of PE Lessons

Significant at the 0.05 level

To analyse relationship between institutional and teacher-related challenges confronting primary school teachers in teaching and learning of PE

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in the Volta Region of Ghana, pre-data analyses were carried out to clean data from errors. Variables were also screened, inspected and tested for parametric assumptions relating to Pearson product-moment correlation coefficients. Assumptions that were met included: approximately normally distributed variables, no significant outliers, linear relationship between the two variables and measuring of variables on continuous scale.

After pre-data analysis, Pearson product-moment correlation coefficient was run to determine the relationship between institutional and teacher-related challenges confronting primary school teachers in teaching and learning of PE in the Volta Region of Ghana. The result indicated that there was a moderate, positive and statistically significant relationship between the two variables ($r=.367$, $n=636$, $p=.000$). This result meant that an increase in institutional challenges was associated with an increase in teacher-related challenges.

Table 22 presents the relationship between institutional and teacher-related challenges confronting teaching and learning of PE in the primary schools of Volta Region.

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Table 22 - Relationship between Institutional and Teacher-Related Challenges Confronting Teaching and Learning of PE in the primary schools of Volta Region of Ghana

Variable		Institutional Challenges
Teacher-Related Challenges	Pearson Correlation	.367**
	Sig. (2-tailed)	.000
	N	636

**. Correlation is significant at the 0.01 level (2 tailed)

Additionally, the study explored differences between lower and upper primary school teachers on the frequency of PE lessons taught in the Volta Region of Ghana. Pre-data analyses were conducted to clean data from errors and mistakes that probably happened during data entering. There were no significant outliers in the data as assessed by inspection of a boxplot. Data were transformed to meet assumptions of approximately normally distributed scores on the dependent variables (frequency of PE lessons). The study ensured independence of observations (each study participant was in one group only) and homogeneity of variances.

To investigate the difference between upper and lower primary school teachers on the frequency of PE lessons taught in the Volta Region of Ghana, an independent samples t-test was used. The results indicated that there was no statistically significant difference between upper primary school teachers (M=2.23, SD=1.10) and lower primary school teachers (M=2.26, SD=.96); P=.716, df=632.67) on the frequency of PE lessons taught.

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Table 23 presents the differences between upper and lower primary school teachers in frequency of teaching PE lessons in the primary schools of Volta Region of Ghana.

Table 23 - Differences in Frequency of Teaching PE Lessons between Lower and Upper Primary School Teachers

	Class Level	N	Mean	SD	t-value	Df	P-Value
Frequency of Teaching PE Lessons	Upper Primary	346	2.23	1.10	-.364	632.67	.716
	Lower Primary	290	2.26	.96			

Significant at the 0.05 level

Institutional challenges are barriers to the provision of quality PE programme in schools. In the current study of institutional challenges, subjects were asked to indicate the extent to which they agreed or disagreed with statements relating to institutional challenges confronting teaching and learning of PE in the primary schools of Volta Region of Ghana. Data were analyzed to find out if there was a significant difference between male and female teachers on these perceived institutional challenges. Variables were screened, inspected and tested for parametric assumptions relating to independent samples t-test. Assumptions that were met included: approximately normally distributed scores on the dependent variable (institutional challenges), absence of significant outliers, homogeneity of variance, and independence of observation.

After pre-data screening and cleaning, an independent samples t-test was used to examine differences between male and female primary school teachers in terms of institutional challenges confronting teaching and learning

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of PE in the Volta Region of Ghana. The results showed that there was no statistical difference between the mean scores of male subjects (27.93±7.53) and female subjects (27.99±7.45); p=.920.

Table 24 presents the difference between male and female primary school teachers in terms of institutional challenges confronting teaching and learning of PE curriculum in the Volta Region of Ghana.

Table 24 - Difference between Male and Female Primary School Teachers on Institutional Challenges Confronting Teaching and Learning of PE Curriculum in the Volta Region of Ghana.

	Gender	N	Mean	SD	t-value	Df	P-Value
Institutional Challenges	Male	228	27.93	7.53	-.101	634	.920
	Female	408	27.99	7.45			

Significant at the 0.05 level

The study also examined if there were differences between upper and lower primary school teachers on institutional challenges confronting teaching and learning of PE in the primary schools of Volta Region of Ghana. I conducted pre-data analyses to clean data from errors. Data were screened, inspected and tested for parametric assumptions relating to independent t-test. Assumptions that were met included: approximately normally distributed scores, no significant outliers, measurement of independent and dependent variables at categorical and continuous scales respectively, homogeneity of variances and independence of observations that ensured that different subjects were in each group with no subject being in more than one group.

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At .05 level of significance, an independent t-test was used to explore the difference between upper and lower primary school teachers on the institutional challenges confronting teaching and learning of PE in the Volta Region of Ghana. According to the results, the observed difference between upper primary school teachers (M=27.87, SD=7.80) and lower primary school teachers (M=28.08, SD=7.06) was not statistically significant (P=.723) at 630.242 degrees of freedom. Table 25 presents the results.

Table 25 - Difference between Upper and Lower Primary School Teachers in Institutional Challenges Confronting Teaching and Learning in the Volta Region of Ghana

	Class Level	N	Mean	SD	t-value	Df	P-Value
Institutional Challenges	Upper Primary	346	27.87	7.80	-.355	630.24	.723
	Lower Primary	290	28.08	7.06			

Significant at the 0.05 level

On teacher-related challenges confronting teaching and learning of PE in the Volta Region of Ghana, analysis of data was conducted to assess the difference between upper and lower primary school teachers. Pre-data analyses were conducted to screen and clean data from errors and mistakes that probably occurred during data entering. Data were also explored to eliminate cases with unusual or extreme values (outliers). Tests were conducted to ensure that parametric assumptions relating to independent samples t-test were met. There was independence of observations with no subject being in more than one group. Scores on the dependent variable (Teacher-related challenges) were approximately normally distributed with no

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extreme outliers. Inspection of scatterplot indicated that variances were homogenous.

An alpha level of .05 was used for statistical test of difference between upper and lower primary school teachers on teacher-related challenges confronting teaching and learning of PE in the Volta Region of Ghana. T-test results suggested that there was no statistical difference between upper primary school teachers (M=25.59, SD=6.72) and lower primary school teachers (M=26.13, SD=6.26); P=.291, df=634) on teacher related challenges. Table 26 presents the results.

Table 26 - Differences between Upper and Lower Primary School Teachers on Teacher-Related Challenges Confronting Teaching and Learning in the Volta Region of Ghana

	Class Level	N	Mean	SD	t-value	Df	P-Value
Teacher-Related Challenges	Upper Primary	346	25.59	6.72	-1.056	634	.291
	Lower Primary	290	26.13	6.26			

Significant at the 0.05 level

To find out if there were significant differences between upper and lower teachers on the time spent teaching PE curriculum in the primary schools of Volta Region, pre-data analyses was conducted to clean data from errors and mistakes that probably happened during data entering. There were no significant outliers in the data as assessed by inspection of a boxplot. Data were also screened to meet other assumptions such as approximately normally distributed scores on the dependent variable (time spent teaching PE),

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independence of observations, no extreme outliers and homogeneity of variances.

After pre-data analyses, an independent samples t-test was conducted to investigate differences between upper and lower primary school teachers on the time spent teaching PE curriculum in a typical school week in the Volta Region of Ghana. The results indicated that there was no statistically significant difference between the scores of upper primary school teachers (M=34.76, SD=24.24) and lower primary school teachers (M=36.36, SD=23.81); p=.402, t-value= -.838. Table 27 presents the results.

Table 27 - Difference between Upper and Lower Primary School Teachers in the Time Spent in Teaching PE Curriculum in the Volta Region of Ghana

	Class Level	N	Mean	SD	t-value	df	P-Value
Time Spent Teaching PE Curriculum	Upper Primary	346	34.76	24.24	-.838	634	.402
	Lower Primary	290	36.36	23.81			

Significant at the 0.05 level

The study also assessed the extent to which the status of PE (as compared to other subjects) predicted the frequency of PE lessons in the primary schools of Volta Region. Pre-data analyses were conducted to screen and clean data from errors and mistakes that probably occurred during data entering. Data were also explored to eliminate cases with unusual or extreme values (outliers). Tests were conducted to ensure that assumptions of linearity, absence of significant outliers and approximately normally distributed variables were met. The linear regression provided an acceptable description

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of the data because both the independent variable (predictor variable) and dependent variable (outcome variable) were measured at continuous scale and that there were no violations of the assumptions. The independent variable was status of PE; while the dependent variable was frequency of PE lessons.

Based on the results, the status of PE explained 3% of the variance in the frequency of PE lessons (R^2=.030). The overall contribution of PE status (Beta=.174) was 17.4% in explaining the frequency at which PE lessons were taught in the Volta Region of Ghana. This meant that other factors, other than PE status, made a contribution of 82.6 to explaining the frequency at which PE lessons were taught in the Volta Region of Ghana. The contribution of the independent variable (PE status) to the model was statistically significant (p=.000). This meant that if the status of PE was raised or regarded as very important and given much attention, primary school teachers in the Volta Region of Ghana would teach the subject much more frequently. Table 28 presents the results.

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Table 28 - Linear Regression Analysis between Status of PE and Frequency of Teaching PE

Variables	Unstandardized Coefficients		Unstandardized Coefficients	t-value	p-value
	B	Std. Error	(B)		
(Constant)	1.808	.105		17.214	0.000
Status of PE	.333	.075	.174	4.452	0.000
R value	.174a		F value		19.821
R Square value	.030		P value		.000b
Adjusted R Square	.029		Durbin-Watson		1.478

a. Predictor: (Constant), Status of PE

b. Dependent Variable: Frequency of teaching PE

Source: *Field Survey, 2017*

Descriptive statistics were used to analyse varying views of subjects on the status of PE. On the status of PE as compared with other curricular subjects such as english, mathematics and science, most teachers (75%) rated PE as having lower status. Subjects who regarded PE as having the same status as other subjects were 134 (21%). Analysis of the data also revealed that 27 subjects (4%) regarded PE as having higher status than other subjects studied in the primary schools of Volta Region of Ghana. Figure 11 presents the results on the status of PE as compared with other curricular subjects.

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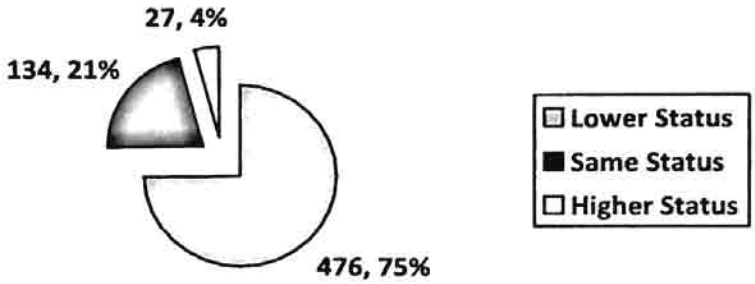

Figure 11- Status of PE as compared with other curricular subjects

To investigate differences between male and female teachers in terms of frequency of PE lessons taught in the primary schools of Volta Region of Ghana, variables were screened, inspected and tested for parametric assumptions relating to independent samples t-test. Assumptions that were met included: approximately normally distributed scores on the dependent variable (frequency of PE lessons), absence of significant outliers, homogeneity of variance, and independence of observation.

A t-test analyses of the differences between male and female primary school teachers on the frequency of PE lessons taught in the Volta Region of Ghana revealed that there was statistically significant difference between male teachers (M=2.36, SD=1.11) and female teachers (M=2.17, SD=.99); p=.034, df=426.99.

Table 29 presents differences between male and female primary school teachers in terms of frequency of PE lessons taught in the Volta Region of Ghana.

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Table 29 - Differences between Male and Female Primary School Teachers in Terms of Frequency of PE Lessons Taught in the Volta Region of Ghana

	Gender	N	Mean	SD	t-value	df	P-Value
Frequency of PE Lessons	Male	228	2.36	1.11	2.13	426.99	.034
	Female	408	2.17	.99			

Significant at the 0.05 level

Basically, physical education uses PA to develop the body, mind and total wellbeing of persons. Differences between male and female primary school teachers in their perceptions of the value of PA in the Volta Region of Ghana were investigated. I conducted pre-data analyses to clean data from errors. Data were screened, inspected and tested for parametric assumptions relating to independent t-test. Assumptions that were met included: approximately normally distributed scores, no significant outliers, measuring of independent and dependent variables on categorical and continuous scales respectively, homogeneity of variances and independence of observation that ensured that different subjects were in each group with no subject being in more than one group.

The aim of this analysis was to explore the difference between male and female primary school teachers in their perceptions of the value of physical activity (PA) in the Volta Region of Ghana. T-test results revealed that there was no statistically significant difference between male teachers (M=2.48, SD=.97) and female teachers (M=2.49, SD=.93); (p=.902, df=634)

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in how the perceived PA as important in the Volta region of Ghana. Table 30 presents the results.

Table 30 - Differences in Perception of the Value of PA between Male and Female Teachers in the Volta Region of Ghana

	Gender	N	Mean	SD	t-value	df	P-Value
Perception of the value of PA	Male	228	2.48	.97	-.124	634	.902
	Female	408	2.49	.93			

Significant at the 0.05 level

T-test was also conducted to investigate the differences between upper primary teachers and lower primary teachers in terms of the perceptions of the value of PA. The results suggested that there was no statistically significant difference between upper primary teachers (M=2.50, SD=.96) and lower primary teachers (M=2.47, SD=.92); (P=.709, df=634) in how they perceived PA as important in the Volta region of Ghana.

Table 31 presents the differences in perception of the value of pa between upper and lower primary school teachers in the Volta Region of Ghana.

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Table 31 - Differences in Perception of the Value of PA between Upper and Lower Primary School Teachers in the Volta Region of Ghana

	Class Level	N	Mean	SD	t-value	Df	P-Value
Perception of the value of PA	Upper	346	2.50	.96	.374	634	.709
	Lower	290	2.47	.92			

Significant at the 0.05 level

Additionally, data relating to the perceptions of the value of PA for health, self-expression and social interaction was conducted using graphical representation of frequencies and percentages. The result revealed that 38 teachers (6%) and 67 teachers (11%) valued PA to very low extent and low extent respectively; while 250 teachers (39%) and 281 teachers (44.2%) valued PA to great extent and very great extent. Figure 12 presents the results.

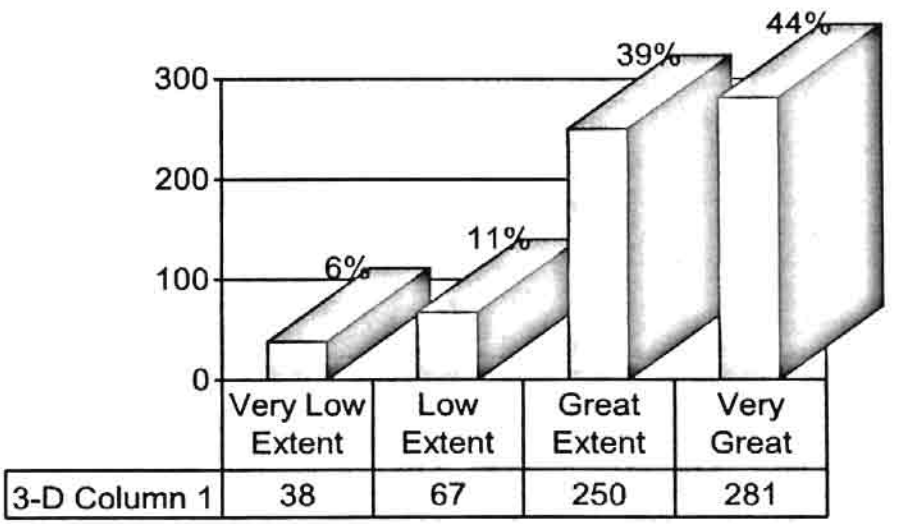

Figure 12 – Perception of the value of PA

Included in this investigation was the supervision of teachers in PE instruction. The study sought to find out if there were significant differences in supervision of PE lessons between male and female primary school teachers in

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the of Volta Region of Ghana. In conducting this investigation, pre-data analyses were conducted to screen and clean data from errors and mistakes that probably occurred during data entering. Data were also explored to eliminate cases with unusual or extreme values (outliers). Tests were conducted to ensure that parametric assumptions relating to independent samples t-test were met. There was independence of observations with no subject being in more than one group. Scores on the dependent variable (supervision of PE lessons) were approximately normally distributed with no extreme outliers. Scatterplot indicated that variances were homogenous.

T-test was conducted to investigate the difference in supervision of PE lessons between male and female primary school teachers in the Volta Region of Ghana. At .05 level of significance, the observed difference between male teachers (M=1.88, SD=1.16) and female primary school teachers (M=1.76, SD=1.10) at 634 degrees of freedom was not statistically significant (p=.196).

Table 32 presents the differences in supervision of PE lessons between male and female teachers in the Volta Region of Ghana.

Table 32 - Differences in Supervision of PE Lessons between Male and Female Teachers in the Volta Region of Ghana

	Gender	N	Mean	SD	t-value	df	P-Value
Supervision of PE Lessons	Male	346	2.50	.96	.374	634	.709
	Female	290	2.47	.92			

Significant at the 0.05 level

Descriptive analyses of data relating to instructional supervision of PE revealed that 371 teachers (58%) had never been supervised in PE instruction,

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102 teachers (16%) were occasionally supervised, 104 teachers (16%) were sometimes supervised, 37 teachers (6%) were often supervised while 4 teachers (6%) said they were always supervised. Figure 13 presents the results of PE instructional supervision of primary school teachers in the Volta Region of Ghana.

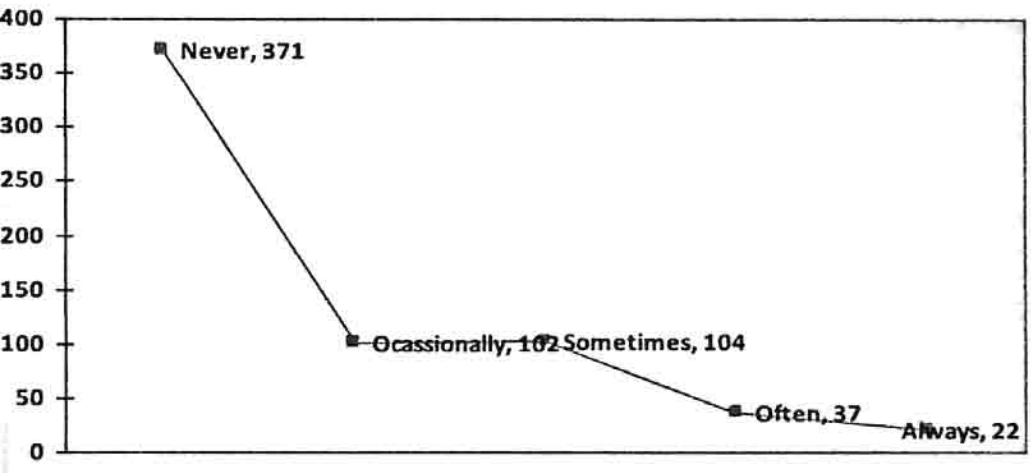

Figure 13 – Supervision of PE lessons since completing teacher training institution

As a professional quality, teachers who taught PE were required to be physically active in carrying out mandatory instructional programme of imparting physically active lifestyles in their pupils. Therefore, data on study participants was used to analyse differences between upper and lower primary school teachers in physical activity participation in the Volta Region of Ghana. In doing this, pre-data analyses was conducted to clean data from errors and mistakes that probably happened during data entering. There were no significant outliers in the data as assessed by inspection of a boxplot. Data were also screened to meet other assumptions such as approximately normally distributed scores on the dependent variables (physical activity participation),

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independence of observations, no extreme outliers and homogeneity of variances

Differences in physical activity participation were investigated using independent t-test between upper primary and lower primary school teachers in the Volta region of Ghana. The result revealed that the difference between upper primary school teachers (2.35±.93) and lower primary school teachers (2.41±.88) was not statistically significant (p=.424, df=634).

Table 33 presents the differences between upper and lower primary school teachers in terms of participation levels in physical activities.

Table 33 - Differences between Upper and Lower Primary School Teachers in Terms of Participation Levels in Physical Activities

	Class Level	N	Mean	SD	t-value	Df	P-Value
Physical Activity Participation Level	Upper Primary	346	2.35	.93	-.800	634	.424
	Upper Primary	290	2.41	.88			

Significant at the 0.05 level

Differences between male and female primary school teachers in physical activity participation levels in the Volta Region of Ghana was also explored. Pre-data analyses were conducted to clean data from errors and mistakes that probably happened during data entering. There were no significant outliers in the data as assessed by inspection of a boxplot. Data were also screened to meet other assumptions such as approximately normally distributed scores on the dependent variables (physical activity participation), independence of observations, no extreme outliers and homogeneity of variances.

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An independent samples t-test was performed to ascertain if there was a difference in PA participation level between male and female primary school teachers in the Volta Region of Ghana. The results suggested that the difference between male teachers (M=2.55, SD=.90) and female teachers (M=2.28, SD=2.28) was statistically significant (P=.000, df=634).

Table 34 presents the differences in physical activity participation between male and female primary school teachers in the Volta Region of Ghana.

Table 34 - Differences in Physical Activity Participation between Male and Female Primary School Teachers in the Volta Region of Ghana

	Gender	N	Mean	SD	t-value	Df	P-Value
Physical Activity Participation Levels	Male	228	2.55	.90	3.648	634	.000
	Female	408	2.28	.90			

Significant at the 0.05 level

A graphical representation of data relating to physical activity participation level showed that 120 subjects (19%) participated in PA to very low extent; while 221 subjects (35%) indicated that they participated in PA in low extent. Data also revealed that 229 subjects (36%) and 66 subjects (10%) involved in regular participation in PA to great extent and very great extent respectively. Figure 14 presents the participation levels of teachers in physical activities.

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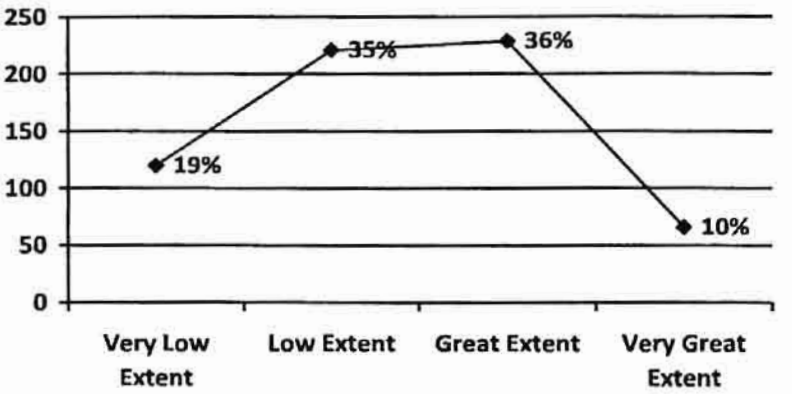

Figure 14 – Participation levels of teachers in physical activities

Analysis of data relating to equipment challenges confronting teaching and learning of PE in the Volta Region of Ghana was aimed at finding out if there were significant differences in the mean scores of male and female teachers. Data were screened, inspected and tested for parametric assumptions relating to independent samples t-test. Assumptions that were met included: approximately normally distributed scores on the dependent variable (equipment challenges), absence of significant outliers, homogeneity of variance, and independence of observation.

Differences in terms of equipment challenges confronting teaching and learning of PE were examined between male and female primary school teachers in the Volta Region of Ghana. An independent samples t-test result suggested that the p-value of .225 was larger than the alpha value of .05. This meant that the difference between male teachers (2.77±1.07) and female teachers (2.88±1.01) was not statistically significant (p=.225, df=445.24).

Table 35 presents the differences in equipment challenges between male and female primary school teachers in the Volta Region of Ghana.

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Table 35 - Differences in Equipment Challenges between Male and Female Primary School Teachers in the Volta Region of Ghana

	Gender	N	Mean	SD	t-value	df	P-Value
Equipment Challenges	Male	228	2.77	1.07	-1.214	445.24	.225
	Female	408	2.88	1.01			

Significant at the 0.05 level

Difference in equipment challenges confronting teaching and learning of PE was also examined between lower and upper primary school teachers in the Volta Region of Ghana. Data were screened, inspected and tested for parametric assumptions relating to independent t-test. Assumptions that were met included: approximately normally distributed scores, no significant outliers, measuring of independent and dependent variables on categorical and continuous scales respectively, homogeneity of variances and independence of observation that ensured that different subjects were in each group with no subject being in more than one group.

An independent t-test was run to determine differences between upper and lower primary school teachers in terms of equipment challenges confronting teaching and learning of PE in the Volta Region of Ghana. Based on the results, there was no statistically significant difference between upper primary school teachers (2.81±1.06) and lower primary school teachers (2.88±1.00) in equipment challenges confronting teaching and learning of PE in the Volta Region of Ghana (p=.291, df=634).

Table 36 presents the differences in equipment challenges between upper and lower primary school teachers in the Volta Region of Ghana.

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Table 36 - Differences in Equipment Challenges between Upper and Lower Primary School Teachers in the Volta Region of Ghana

	Class Level	N	Mean	SD	t-value	Df	P-Value
Equipment Challenges	Upper Primary	346	2.81	1.06	-1.056	634	.291
	Lower Primary	290	2.88	1.00			

Significant at the 0.05 level

Similarly, differences between upper and lower primary school teachers in engagement time for teaching and learning of PE was assessed using independent t-test. The study revealed that the observed difference between upper primary school teachers (M=34.76, SD=24.24) and lower primary school teachers (M=36.36, SD=23.81) did not reach statistical significance (p=.402, df=634).

Table 37 presents the differences between upper and lower primary school teachers in terms of engagement time for teaching and learning of PE in the Volta Region of Ghana.

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Table 37 - Differences between Upper and Lower Primary School Teachers in Terms of Engagement Time for Teaching and Learning of PE in the Volta Region of Ghana

	Class Level	N	Mean	SD	t-value	Df	P-Value
Engagement Time in PE	Upper Primary	346	34.76	24.24	-.838	634	.402
	Lower Primary	290	36.36	23.81			

Significant at the 0.05 level

The success and quality of PE implementation programme depends largely on adequacy of pre-service education. During data collection, subjects were asked to indicate whether they believed the quality of their preservice education in PE was (1) very poor; (2) poor; (3) fair; average; (4) good; (5) good; or (6) excellent. I investigated the relationship between adequacy of pre-service training in PE and teacher-related challenges confronting primary school teachers in the Volta Region of Ghana. Pre-data analyses were conducted to clean data from errors and mistakes that probably happened during data entering. There were no significant outliers in the data as assessed by inspection of a boxplot. Data were also screened to meet other assumptions such as approximately normally distributed scores on the two variables (adequacy of pre-service training in PE and teacher- related challenges). Data inspection using scatterplot revealed that linearity assumption between the two variables was not violated.

After pre-data screening and cleaning, Pearson product-moment correlation was used to assess the relationship between adequacy of pre-service training in PE and teacher- related challenges confronting teaching and

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learning of PE in the Volta Region of Ghana. The results indicated that there was a small, negative correlation between adequacy of pre-service training in PE and teacher- related challenges, which did not reach statistical significance (Spearman's rho=-.013, n=637, p=.631). This meant that a decrease in the quality of pre-service training in PE was associated with an increase in teacher related challenges among primary school teachers in the Volta Region of Ghana.

Table 38 presents the relationship between adequacy of pre-service education in PE and teacher-related challenges confronting primary school teachers in the Volta Region of Ghana.

Table 38 - Relationship between Adequacy of Pre-Service Education in PE and Teacher-Related Challenges Confronting Primary School Teachers in the Volta Region of Ghana

Variable		Adequacy of Pre-Service Training in PE
	Spearman's rho	
Teacher-Related	Correlation	-.013
Challenges	Sig. (2-tailed)	.748
	N	136

* Significant at p<.05

A descriptive analysis of the adequacy of pre-service education in PE was also conducted on the study subjects. In this analysis, 127 subjects (20%), 119 subjects (18%) and 113 subjects (18%) rated their pre-service education in PE as very poor, poor and fair respectively. In the same analysis, it was realised that 70 subjects (11%) and 13 subjects (2%) rated their adequacy of their pre-service education in PE as very good and excellent respectively.

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Figure 15 presents a descriptive analysis of the adequacy of pre-service education in PE of study subjects.

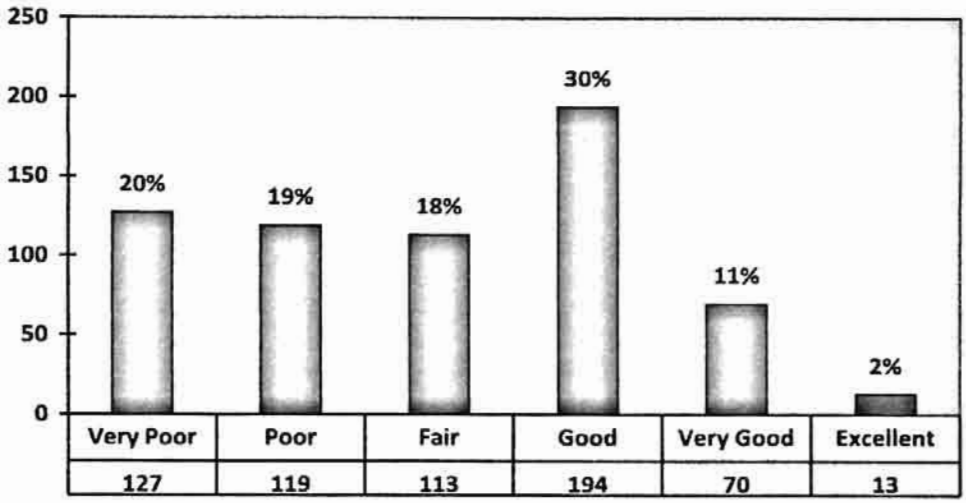

Figure 15 - Rating of adequacy of pre-service education in PE

Discussion of Findings

Findings of this study revealed both institutional and teacher-related challenges that were similar to and complement the many primary school-based studies (Barroso *et al.*, 2005; De Corby *et al.*, 2005, Morgan & Hansen, 2008). Previous research highlighted many institutional challenges that included budget constraints, crowded curriculum, reductions in time provision in the curriculum, absence of professional development and the lack of facilities and equipment (Commonwealth of Australia, 1992; Hardman, 2008; Morgan & Hansen, 2008). The three highest institutional challenges identified by Jenkinsen and Benson were lack of facilities, lack of suitable teaching space and lack of equipment. However, in the current study, the three highest institutional challenges that impeded teaching and learning of PE in the primary schools of Volta Region of Ghana were lack of access to professional

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training in PE, lack of funds/budgetary constraints for PE programme and lack of access to supplies for teaching PE programme.

The study found six teacher-related factors that impeded effective teaching and learning of PE in the primary schools of Volta Region of Ghana. These included accountability for other subjects, inability to provide safety for children during PE lessons, inability to plan for PE lessons, inadequate training/knowledge in PE, negative attitude to PE and lack of expertise/qualification for teaching PE programme. The findings of the study supported previous research that suggested that some teachers of PE were unable to provide safely planned and structured lessons and that teachers of PE had personal negative experiences in physical education, lacked training, knowledge, expertise and qualifications to provide physical education (De Corby *et al.*, 2005).

Evidence from previous research indicated that challenges to physical education were largely institutional and that some of these challenges that confronted the teacher could be planned for and overcome (Jenkinsen & Benson, 2010). The report by Jenkinsen and Benson indicated that many challenges to providing quality physical education programme had not changed over time. These challenges evolved and became more complex in their own context in primary schools (Jenkinsen & Benson, 2010). The focus on addressing institutional barriers alone was no longer possible, particularly as teachers reported that learners were increasingly responsible for their own educational and physical activity choices and consequently their participation in physical education. The awareness of teaching challenges in physical education programme will support quality curricular content, effective

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teaching strategies to help overcome these challenges both now and into the future (Jenkinsen & Benson). Physical education is typically undervalued as a school subject, often being perceived as a frill and of little educational value (Wuest & Bucher, 2003). Admittedly, some of these challenges are similar to those experienced in other academic areas. Administrative and teacher support for physical education is often lacking. These many and diverse expectations associated with the roles of the teacher in the primary schools lead to difficulty in meeting physical education curricular targets.

Teachers need a wide range of stimulating and exciting resources to teach curricular content to ensure that students are actively involved in the learning. Curricular resources should reflect what is familiar to the student as well as introducing new learning approaches to engage children in a variety of physical activities. It is established that one of the important considerations in the development and promotion of comprehensive PE programme in schools is the availability of facilities, equipment, supplies and personnel (Domfeh *et al.*, 2006). Although facilities, equipment and supplies are different in meaning, all are physical things which are needed to make the teaching of physical education programme meaningful. A well equipped physical education facility contributes to the potential of the curricular programme of the school. Yet, many of our school pupils do not have the benefit of instruction within a well equipped facility. It is reported that "nearly 80 percent of elementary physical education is taught outside on a school playground" (Ross *et al.*, 1987 in Siedentop, 2004, p.287). Siedentop (2004) state that "The facilities for PE obviously affect what can be taught (choice of activities) and how it can be taught (teaching method)" (p.287).

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Conversely, if school facilities are in good state and in correct supply, all the planned experiences to be offered to the learners can be adequately implemented and learning would take place effectively. It is essential to note that facilities do not have to be of standard size in order to be used for teaching PE. "As much as possible, facilities should be designed for multiple purposes. Any space any space available can be used for practical PE activities, provided it is safe" (Karbo *et al.*, 2011, p.255). It is also important to note that without proper equipment for teaching and learning, the risk of injury is high even though equipment can also cause injuries if care is not taken. However, participants have to be aware of the risks and make decisions as to whether they wish to take part in high risk activities. Correct footwear is important even for people who do not participate in much physical activities. Shoes or boots for physical activities need to fit well and provide some cushioning. Teachers must guide learners to choose carefully the equipment that are appropriate for physical activity. Equipment such as rackets and cricket bats need to be carefully given proper care. Identifying the appropriate equipment for each physical activity is important but making sure that each participant is utilizing the required equipment is even more important. However, "it is better to buy several rubber balls for all children to play with than to buy one expensive soccer or volleyball for only a few children" (Karb *et al.*, p.255).

A key finding of the current study was the frequency at which PE lessons were taught in the primary schools of Volta Region of Ghana. Interestingly, physical education at the lower primary school level was allocated four periods a week with each period lasting 35 minutes. This meant that provision had been made for teachers of PE at the primary school level to

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teach the syllabus for 140 minutes per week. On the contrary, the study revealed that out of 140 minutes allocated time for PE lessons, teachers on average taught only about 35 minutes with most of them indicating they did not teach PE frequently. This situation contradicted earlier study that suggested that many teachers struggled to find time to teach PE as a result of crowded curriculum which was adversely impacting on lesson quality and willingness to teach PE. Precisely, time for the study of PE was part of the allocated time organized by the teacher to teach students with the goal to perform the lesson objectives. In their view, Karbo *et al.* (2011) argued that children have to be given time to do various curricular activities of the PE programme. Many teachers fail to provide time for children to take part in physical education programmes. "In some schools mandated Physical Education periods are reduced or used for other things. Some parents do not allow their children to take part in PE and Sports" (Karbo *et al.*, p.55). A situation like this is unacceptable and does not depict good education. So long as school curricular programmes are concerned, time is to be regarded as a precious commodity. In schools where accountability exists, teachers are under pressure to keep to time allocation for physical education programme.

Findings from the current study suggested that most primary school teachers in the Volta Region of Ghana did not use allocated period for teaching PE effectively. On average, teachers taught only one period out of four allocated periods for teaching PE. Statistically, there was no significant differences between upper and lower primary school teachers in time spent teaching PE in a typical school week. If physical educators are to keep the physical education programmes and make them viable, then time must be

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made as part of accountability process in the teaching and learning of physical education. In schools where time for teaching physical education is not part of accountability formula, heads and teachers cut time available for physical education for other works. If physical education is going to continue to be part of the school curriculum, teachers must find a way to connect with the educational goals of a school to meeting these goals. Generally, schools are being held accountable for student learning time and physical education is not exempt from this accountability (Lund & Tanneihill, 2005).

Another focus of this study was the adequacy of pre-service education received in PE from teacher training institutions. Bucher and Krotee (2002) argue that professionals or individuals who seek to teach physical education in schools and institutions need to "possess those qualifications listed for physical educators and coaches and, in addition, the special training and qualifications needed to work in the activity …" (p.234). Teachers who teach physical education must have qualities that include thorough knowledge of subject matter, ability to take personal interest in each learner, good communication skills and knowledge of clear boundaries between teacher and student.

Evidence from the current study revealed that most teachers received inadequate knowledge in PE before they began their professional careers as teachers of PE in the primary schools of Volta Region. It was clear from the results that most teachers experienced poor quality of PE as student teachers while in teacher training institutions. The findings of this study suggested that most teachers' of PE in the primary schools were still delivering poor quality of PE programme due to inadequate pre-service exposure to PE. Interestingly,

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previous research has demonstrated that a belief in the value of PE by teachers does not generate a quality programme nor does it ensure that learners will develop knowledge and skills physically educated (De Corby *et al.,* 2005). Crum (1993) elucidated that many PE teachers hold non-teaching perspective as a result of conventional ideologies. The teacher professional preparation programme was for persons interested in pursuing a teaching career and includes basic skill courses, physical education major activity and pedagogy courses, and various physical education content courses such as applied physiology, biomechanics, history and philosophy, school, motor behaviour, organization and management, sport psychology, and sport sociology. It is important to note that in-service training and staff development programmes are vital to building the instructional capacity of teacher. This is supported by literature that reveals that "Because of the rapid changes occurring within the profession, staff members should attend regular in-service and staff development training programs" (Bucher & Krotee, p.237).

It is incumbent upon the physical education profession to provide: professionally prepared and appropriately credentialed physical educators, for sequential learning and development, for individualized learning in the context. "The needs of youth are varied in physical education programme, Curriculum that align with the standards will identify these topics, and provide the youth with a way to stay physically active throughout lifespan" (Lund & Tanneihill, 2005, p.10).

Physical education teachers should be able to demonstrate that they have mastered movement fundamentals that establish a foundation to facilitate continued motor skill acquisition and gives their students the capacity for

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successful and advanced levels of performance to further the likelihood of participation on a daily basis. In the primary years, students develop maturity and versatility in the use of fundamental skills (e.g., running, skipping, throwing, striking) that are further refined, combined and varied during the middle school years (NASPE, 2004). Physical education standards for teachers include the application of concepts from disciplines such as motor learning and development, sport psychology and sociology, and biomechanics and exercise physiology (NASPE, 2004). Knowledge of these concepts and principles and of how to apply them enhances the likelihood of independent learning and therefore more regular and effective participation in physical activity.

Physical educators demonstrate effective self-management skills that enable them to participate in physical activity on a regular basis. As teachers develop an awareness of the relationships between activity and its immediate and identifiable effects on the body, regular participation in physical activity enhances the physical and psychological health of the body, social opportunities and relationships, and quality of life. Students are more likely to participate if they have opportunities to develop interests that are personally meaningful to them (NASPE, 2004). Teachers should become more skilled in their ability to plan, perform, and monitor physical activities that address each component of health-related fitness (NASPE).

Physical educators should develop respect for individual similarities and differences through positive interaction among participants in physical activity. Similarities and differences include characteristics of culture, ethnicity, motor performance, disabilities, physical characteristics (e.g.,

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strength, size, shape), gender, age, race, and socioeconomic status. Achievement of this standard in the lower elementary grades begins with recognition of classroom rules, procedures, and safety. In the upper elementary levels, children learn to work independently, with a partner, and in small groups. Throughout elementary school, students begin to recognize individual similarities and differences and participate cooperatively in physical activity (NASPE, 2004). Physical activity provides opportunities for self-expression and social interaction and can be enjoyable, challenging, and fun. These benefits develop self-confidence and promote positive self- image, thereby enticing people to continue participation in activity throughout the life span (NASPE).

The study also investigated age and gender differences in overcoming barriers to providing quality PE programme. The hallmark of aging is loss of capacity in the physiologic systems of the body. In young and middle-aged adults, physiologic capacity is typically in excess of what is required to perform activities of daily life (CDC, 2010). Observational studies consistently show that physically active older adults are at lower risk of developing physical functional limitations (Huang *et al.,* 1998; Leveille *et al.,* 1999; Ostbye *et al.,* 2002).

Studies of the Elderly (EPESE) reported that active older adults who survive to very old age have almost a twofold increase in dying without a disability than sedentary adults who survive to old age (Leveille *et al.,* 1999). Randomized controlled trials of exercise in older adults confirm a beneficial effect of physical activity participation on functional limitations (Binder *et al.,* 2002; Campbell *et al.,* 1997; Lord *et al.,* 2003; Luukinen *et al.,* 2006). Age

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affects participation in physical activities in several ways. For instance, in terms of strength, children are not as strong as adults. Humans as we are do not reach our maximum strength until we are fully grown at around 20 (Wuest & Bucher, 2003).

Generally women and men cannot do the same physiological tasks. Because of the undesirable difference between the sexes contrary to the difference between the races, this cannot apply to other discriminations that occur and the equality that is sought. In the opinion of Wuest and Bucher (2003) "Inactivity is greatest among women …" (p.7). This categorical statement by the authors indicates that physical activity levels vary by gender. There is a general consensus that participation in physical activities can offer a great deal to individuals, communities and nations.

Evidence suggests that from an early age, differences in gender-based attitudes towards opportunities for physical activities can have a significant influence on children's participation (WHO, 2010). This may, in turn, affect later involvement in physically active lifestyles, and the social and health benefits that may result for them.

Physiological differences cannot be denied. Women are physiologically different from men, in more ways than having biologically distinct organs (e.g. muscle mass, fatty tissue, aerobic capacity). Gender differences prior to puberty in health related physical fitness such as physical activity are due to the different treatment and expectations our society has for girls and women. The differences are generally small, increase gradually, and are adjusted downwards to even smaller levels by variables that are influenced by environmental circumstances (e.g. degree of fatness, intensity of physical activity). Thus, for tasks in which strength, power, and size are important,

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boys will typically perform better. However, the differences reported across the many motor performance and health related physical fitness tasks are considerably larger than would be expected from only biological factors (WHO, 2010).

Reporting on physical activity participation study, Wuest and Bucher (2003) observed that "Geographic location was found to influence physical activity levels …" (p.7). In the current study, geographical differences in terms of quantity of equipment and quality of facilities could not be found. In 2008, there was a report on a study of "Geographical influence upon physical activity participation: Evidence of a coastal effect" by Bauma, Smith Stoker, Bellew and Booth. Results of the study revealed that after adjusting for other demographic factors, respondents who lived in a coastal postcode were 23% less likely to be classified as sedentary, 27% were more likely to report levels of activity considered adequate for health, and 38% were more likely to report high (vigorous) levels of physical activity than those who lived inland (Bauma *et al.*, 2008). Each of these associations was significant at the 0.05 level according to the study. The study by Bauma *et al.* sated that characteristics of the physical environment, coastal postcodes are related to physical activity participation.

The implication of the study suggested that physical environment may contribute to physical activity participation. Further effort to conceptualize and measure these environmental influences is warranted according to the study. It concluded that public health efforts to promote physical activity should consider aspects of any intervention (Bauma *et al.*, 2008). WHO (2010) also suggest that possible physical activity promoting interventions include

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reviewing urban and town planning and environmental policies at national and local level to ensure that walking, cycling and other forms of physical activity are accessible and safe.

Early physical activity research tended to focus on determinants of physical activity at the individual or group level and as a result, early interventions operated predominantly at the individual level. More recently, research has begun to investigate the role of environmental factors in shaping an individual's decisions about their behaviour. The trends in physical activity participation that reflects in the way urban population live, work and travel may not be the same for a typical local geographical area. The importance of physical activity for health presents a challenge for individuals to increase physical activity in a highly technological society within an environment that is already in place and has evolved over a long period of time (WHO, 2010).

The reality is that physical education faces tremendous challenges to its integrity as a school subject. Even though schools are well placed to promote health and physical education, curricular challenges such as inadequate supply of teaching and learning materials, lack of facilities and equipment for physical education programmes threaten the needs of the society (Hardman, 2008; Morgan & Hansen, 2008).

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CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to investigate the perceived challenges confronting primary school teachers in teaching and learning of physical education in the Volta Region of Ghana. The study examined the relationship between curricular factors (institutional/teacher-related, adequacy of pre-service education in PE) and the frequency at which PE lessons were taught in the primary schools of Volta Region of Ghana. The study examined if there were statistically significant differences in terms of quantity of equipment and quality of facilities for the teaching and learning of PE programme among primary school teachers in the northern, central and southern Volta Region of Ghana. The study explored differences between upper and lower primary school teachers in engagement time for teaching PE curriculum in the primary schools of Volta Region of Ghana.

The following research questions guided the study:

1. What are the institutional challenges confronting primary school teachers in teaching and learning of PE in the Volta Region of Ghana?
2. What are the teacher-related challenges confronting the teaching and learning of PE in the Primary Schools of Volta Region of Ghana?
3. What is the relationship between the frequency at which PE lessons are taught and curricular related factors (institutional challenges/teacher-related challenges/adequacy of pre-service education in PE)?

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4. Is there a significant difference between male and female primary school teachers in engagement time for teaching PE curriculum in the primary schools of Volta Region of Ghana?
5. What is the effect of age and gender on teacher-related challenges confronting teaching and learning of PE in the Volta Region of Ghana?
6. Are there significant differences in the state of curricular resources (quantity of equipment and quality of facilities) for teaching and learning of PE in the primary schools of northern, central and southern Volta Region of Ghana?

The research design for the study was cross-sectional descriptive survey. The design was chosen because the study involved studying a group of people by collecting and analyzing data considered to be representative of the entire study population. The survey research design allowed generalization of the results from the representative sample and made claims about the population of the study.

Volta Region of Ghana was the area for this study. Geographically, Volta Region of Ghana was the longest region that covered a land area that extended from the northern to the southern part of the country. It had a total of seven public Colleges of Education that trained teachers for the basic schools. Therefore, it was ideal for this investigation to be conducted in a geographical area that was fairly representative of other geographical areas in Ghana.

The target population for this study was trained teachers teaching in the public primary schools in the Volta Region of Ghana. All subjects (teachers) were employees of Ghana Education Service (GES). The total

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population of my subjects (primary school teachers) in the study area was about 9, 165. Sample size determination table (Ogah, 2013) guided the number of subjects estimated for the study. Multistage sampling technique yielded 636 subjects for this study. Using 636 subjects for this study was very representative of a population of 9,165 teachers. A total of about 72 schools served as data collection sites for the study in the six randomly sampled districts/municipalities. The use of multistage sampling for this study allowed me to employ a combination of sampling procedures that included cluster sampling, simple random sampling and convenience sampling to draw objectively desired sample size.

The questionnaire used for data collection was self structured to comprise of six sections with a total of 52 items that elicited responses for answering research questions of the study. It was estimated that subjects used about 15 to 30 minutes to complete the questionnaire. Precisely, the items of the questionnaire for the study consisted of both closed and open ended types and were constructed to be precise and specific for easy eliciting of responses from the respondents. The closed-ended questions contained items with options to choose from. In the case of open-ended questions, respondents were required to supply specific answers to the items. The use of questionnaire for this study was very appropriate because all subjects were characterized by high level of literacy and could read, understand and provide responses to the questions.

Pilot testing of data collection instrument was conducted personally with two trained research assistants. The administration of questionnaire was carried out on Tuesdays, Wednesdays and Thursdays in the weeks of data

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collection exercise in the districts/municipalities sampled for the study. This period was appropriate because teachers who wished to travel during weekends were able to participate in the data collection exercise before leaving schools and those teachers who probably reported to school late after weekends were able to meet the data collection period and participated in the study. For the actual study, respondents were given one week to complete and submit the questionnaire to school heads or designated teachers. In some instances, completed questionnaire were collected on spot after the respondents had completed filling them.

For the purpose of dealing with validity issues, the self-structured instrument for data gathering was subjected to scrutiny by three university senior lecturers who were experienced in educational and social research. These researchers inspected, analyzed and ascertained the capability of the instrument of collecting accurate and valid data for the study. Additionally, the construction of questionnaire was supervised and vetted by the Principal Supervisor for the study. Validity of the instruments was also ensured by giving the items to a representative sample of the actual study. It was expected that a reliability of 0.70 or higher was necessary in order to accept questionnaire items as reliable for gathering data in actual study (Gay *et al.*, 2009). Apart from items on demographic data (section A), the reliability coefficient of all the items of various sections indicated that the self-structured questionnaire was reliable.

Administration of data collection instrument for both the pilot study and the actually study was carried out in January and May-July, 2017 respectively. Study participants submitted completed questionnaire within one

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week of collection. This maximized return rate of the questionnaire because one week period did not allow subjects to misplace the questionnaire. For easy access to data collection sites, introduction letter was acquired from the head of Health, Physical Education and Recreation department of the University of Cape Coast to carry out the study in the selected districts/municipalities in the Volta Region of Ghana.

All questionnaire items were analyzed with the aid of Statistical Package for Social Science (SPSS). The SPSS analysed all data using descriptive statistics such as the means, frequencies, standard deviations, degrees of freedom, percentages and graphs. Parametric and non-parametric tests of variables were also conducted using SPSS version 21 for widows 2007.

As part of data analysis process, pre-data analyses were conducted to screen and clean data collected from the questionnaire. The essence of screening and cleaning data was to check for errors and mistakes that probably happened during data entering. In doing this, each variable was checked for scores that were out of range (i.e. variables that were not within the range of possible scores). For instance, gender was coded 1=male, 2=female. Therefore, any score other than 1 or 2 for this variable was treated as an error which was corrected before analyses of data. Cases (outliers) with values well above or well below the majority of other cases were transformed so that data set achieved or displayed graphical normal curve to fulfill parametric assumption of normal distribution of variables. This was particularly necessary for variables that were used for parametric tests such as the t-test, analysis of variance, multivariate analysis of variance, regression and Pearson's correlation.

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In checking categorical and continuous variables for errors, analyses were done based on SPSS statistics. Minimum and maximum values of all variables were checked. For instance, for the variable geographical location, the minimum value was 1 and the maximum value was 3. For state of facilities and equipment, the scores ranged from 1 to 6. These variables were checked against code book to ensure that the values were accurate and appropriate for analyses. Identified errors were traced back to the codebook and corrected in line with the actual record of the questionnaire. Missing cases were also identified in the data set and correct values assigned as indicated in the codebook.

Statistical Package for Social Science statistics were also used to check the distribution of score on continuous variables (skewness and Kurtosis). The skewness value provided an indication of the symmetry of the distribution of scores on continuous variables while kurtosis provided information on the peakness of the distribution. Kurtosis values below 0 indicated a distribution that was relatively flat (too many cases in the extremes). Using histogram, the normality of the distribution of scores was assessed for each variable that was used for parametric statistical tests. As additional measure, the results of the Kolmogorov-Smirnov statistics were used to assess the normality of distributions of scores. In line with the literature, "A non significant result (sig value of more than .05) indicated normality" (Pallant, 2005, p.57). It is suggested that the scores of distribution should be reasonably normal (Pallant, 2005). For this reason, assessing normality of the scores was supported by the inspection of the normal probability plots (normal Q-Q plots). According to

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literature "A reasonably straight line suggests a normal distribution" (Pallant, 2005, p.58).

To deal with outliers, there was visual inspection of data to examine frequency distribution of each variable used in parametric tests. Histograms were obtained to look for unusual values. Boxplots were produced to locate cases that were near the median values. In this case, extreme values that were located far from the box were deemed to be outliers and were either eliminated or transformed before analysing data involving parametric statistical techniques. By the boxplot, identification of outliers became easy because scores that SPSS considered outliers appeared as little circles with ID number attached to each case.

Precisely, the study adopted both parametric and non-parametric statistical tools of analysing data on the research questions. Specifically, descriptive statistics, Independent t-test, Pearson correlation coefficient, Analysis of Variance (ANOVA), Multivariate Analysis of Variance (MANOVA) and Logistic Regression were the statistical tools involved in analyzing the research questions of the study. Since data analysis aimed at answering research questions that guided the study, analyses of the data was organized according to the research questions.

Summary of Findings

Findings from the study revealed intuitional challenges that impeded teaching and learning of PE in the primary schools of Volta Region of Ghana as relating to funding/budgetary constraints, quality of facilities, supervision of PE programme, access to equipment, access to supplies and access to professional training in PE. Of these institutional challenges, the most reported

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problem was lack of access to professional training in PE. However, the least reported problem was attributed to large class for teaching PE lessons. The study could not confirm four institutional factors as impeding the teaching and learning of PE in the primary schools of Volta Region of Ghana. These unconfirmed institutional factors included: large class, crowded curriculum, support from other staff members and priority for other subjects.

The study found six teacher-related challenges that hindered effective teaching and learning of PE in the primary schools of Volta Region of Ghana. These included accountability for other subjects, provision of safety for children during PE lessons, planning for PE lessons, training/knowledge in PE, attitude to PE, and expertise/qualification for teaching PE as factors. The most reported teacher-related challenge was accountability for other subjects such as english, mathematics and science. However, the least reported teacher-related challenge was gender stereotyping. The study could not confirm teacher-related factors that related to confidence in teaching PE, interest in PE, perception of the value of PE and gender stereotyping as impeding teaching and learning of PE in the primary schools of Volta Region of Ghana.

Findings also revealed a negative correlation between perceived institutional challenges and frequency at which PE lessons were taught in the primary schools of Volta Region of Ghana. In this situation, high levels of institutional challenges were associated with low levels of frequency of PE lessons. The strength of this association was small but significant. Similarly, the study confirmed a small, negative and statistically significant correlation between perceived teacher-related challenges and frequency of PE lessons. This meant that an increase in teacher-related challenges was associated with a

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decrease in the frequency at which PE lessons were taught in the primary schools of Volta Region of Ghana. However, findings on the relationship between adequacy of pre-service education in PE and frequency of PE lessons revealed that there was a small, positive and statistically significant relationship between adequacy of pre-service education in PE and PE teaching achievement (frequency of PE lessons). Based on these findings, an increase in the level of pre-service education in PE was associated with a corresponding increase in the frequency at which PE lessons were taught. The more pre-service teachers were adequately prepared for teaching PE, the more frequently they would teach PE in the primary schools of Volta Region of Ghana.

Findings of the study showed that there was no statistically significant difference between male and female primary school teachers in time spent teaching PE in a typical school week. This meant that PE engagement time for male teachers was almost the same as female teachers. The study revealed that out of 140 minutes allocated time for PE lessons, teachers on average taught only about 35 minutes with most of them indicating they did not teach PE frequently. On average, about one period out of four allocated periods were used in teaching and learning of PE in the primary schools of Volta Region of Ghana.

The study did not find significant effect of age and gender on teacher-related challenges confronting teaching and learning of PE in the Volta Region of Ghana. The interaction effect between age and gender on teacher-related challenges did not reach statistical significance.

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In terms of equipment quantity for teaching and learning of PE in the primary schools of Volta Region of Ghana, the findings suggested that there were no statistically significant differences among teachers in the northern, central and southern Volta Region. In addition, there were no statistically significant differences in quality of facilities for teaching PE in the three geographical areas (northern, central and southern) of Volta Region of Ghana.

Conclusions

Based on the findings of this study, it was concluded that institutional challenges such as funding/budgetary constraints, quality of facilities, supervision of PE programme, access to equipment, access to supplies and access to professional training in PE hindered effective teaching and learning of PE in the primary schools of Volta Region of Ghana. It was also concluded that Teacher-related challenges such as accountability for other subjects, provision of safety for children during PE lessons, planning for PE lessons, training/knowledge in PE, attitude to PE, and expertise/qualification for teaching PE impeded effective teaching and learning of PE in the primary schools of Volta Region of Ghana.

Recommendations

Based on the findings of the study, it was recommended that:

1. The GES and MoE should prioritise investments in PE teacher preparation, equipment and facilities. Quality PE programme should provide sufficient equipment and adequate facility to allow each pre-service teacher to benefit from maximum participation and optimal practice and learning of PE to accomplish the goals of the curriculum. Ghana Education

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Service (GES) should liaise with Ministry of Education (MoE) to provide teaching/learning resources for the PE programme.

2. The GES should give equal attention to all subjects including PE. English, mathematics and sciences should not be prioritized over PE. There should be equal attention of training of PE teachers for primary schools to enhance the overall success of PE programme.
3. Heads of schools should make effort to address a current lack and insufficient PE resources to include efficient use community resources and the promotion of partnership with the community sports clubs. School heads should work in partnership with their communities to help physical educators use available community-based sports facilities for teaching PE programme.
4. Heads of schools should frequently demanded engagement time accountability from all teachers who have the responsibility to teach PE as a compulsory subject in the primary schools of Volta Region of Ghana. Heads of institutions should note that a well developed PE programme strives for quality daily PE while meeting the minimum recommended time ranges. Heads of schools and physical educators should regard time as a critical variable in assuring a high quality PE programme.
5. The study of PE in Colleges of Education should be compulsory for teacher trainees who would be posted to the basic education level.

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6. The Ministry of Youth and Sports (MYS), MoE and GES should give equal attention to equipment and facility challenges affecting teaching and learning of PE in the three geographical areas (northern, central and southern) of Volta Region of Ghana. These learning resources should be seen as fundamental to good quality of PE. The financial resourcing of accountable physical education curriculum should provide suitable, access to facilities and equipment for effective teaching and learning of PE in the school.

Suggestions for Further Research

Based on the findings of this research, the following were suggested for further research:

1. A study of institutional and teacher-related challenges should be extended to other institutions of higher learning in the Volta Region of Ghana to find out the extent to which these challenges are impediments to teaching and learning of PE. The study should find out whether there are variations in the challenges as compared with earlier primary school studies.
2. A similar study should be conducted in the primary schools of other regions of Ghana to find out if these challenges are the same or different from those that were previously reported.
3. This investigation should be repeated and replicated in other districts of Volta Region of Ghana to ascertain whether some of these factors have changed or have remained the same.

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4. A study of inventory of curricular resources such as equipment and facilities should be conducted in schools and CoE to find out the actual state of these resources for teaching and learning of PE programme.
5. There should be investigation into curriculum alignment between CoE course outline and the primary school PE syllabus.
6. There should be investigation into factors that are likely to cause teachers in the primary schools to teach PE more frequently.

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APPENDIX A

(Data Collection Instrument- Questionnaire)

UNIVERSITY OF CAPE COAST

DEPARTMENT OF HEALTH, PHYSICAL EDUCATION AND RECREATION (HPER)

QUESTIONNAIRE

*This questionnaire is designed to find out about challenges confronting Primary School Teachers in teaching and learning of Physical Education in the Volta Region of Ghana. Participants in this study will benefit from sound PE policies for schools in the Volta Region of Ghana. Note that every information you provide is for academic purpose and strictly confidential. **Kindly read the instructions carefully and provide very honest answers.** Names are not required on this form.*

PART I: DEMOGRAPHIC DATA

1. What is your gender? [ ] Male [ ]

Female

2. What is your age? (Please, indicate) .....

3. What is your designation in the school? [ ] Class teacher [ ]

Head teacher

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4. What is your geographical location?

[ ] Northern Volta (Areas: Krachi West, Krachi East, Krachi Nchumuru, Nkwanta North, Nkwanta South, Kadjebi, Jasikan, Biakoye, Hohoe, Afadjato South).

[ ] Central Volta (Areas: Kpando, North & South Dayi, Ho West, Ho, Kpetoe-Ziope, Adaklu).

[ ] Southern Volta (Areas: Akatsi North, Akatsi South, Ketu North, Ketu South, North Tongu, Central Tongu, South Tongu, Keta).

5. Which level do you teach? [ ] Upper Primary [ ] Lower Primary

6. Which class do you teach? [ ] Class 1 [ ] Class 2

[ ] Class 3 [ ] Class 4

[ ] Class 5 [ ] Class 6

7. How many pupils are in your class? Please, indicate: .....

8. How long have you been teaching in Ghana Education Service (GES)? Please, indicate: .....

9. Within the framework of your school programme, how much time do you actually engage pupils in PE curricular programmes per a typical school week? Indicate: .....

10. Do you have PE on your time table? [ ] Yes [ ] No

11. Have you attended any PE workshop since you left College?

[ ] Yes [ ] No

12. Is physical education important/ a priority to you?

[ ] Yes [ ] No

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13. Are PE lessons cancelled more often as compared to other subjects?

[ ] Yes [ ] No

14. Are PE allocated periods used for other curriculum subjects on the time table? [ ] Yes [ ] No

15. How many periods of PE lessons do you usually teach in a typical school week?

[ ] 0 [ ] 1 [ ] 2 [ ] 3 [ ] 4

16. How would you rate your pre-service training/education in preparing you for teaching PE?

[ ] Very Poor [ ] Poor [ ] Fair

[ ] Good [ ] Very good [ ] Excellent

17. How does the actual status of PE compare with other school curriculum subjects (such as languages, mathematics etc) in the school?

[ ] Lower status [ ] Same status [ ] Higher status

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PART II

SECTION A: INSTRUCTIONAL TASKS/SUPERVISION OF PE PROGRAMME

Please, tick (√) appropriate responses.

	Question	Never	Occasionally	Sometimes	Often	Always
18	How frequently do you teach PE in your school?					
19	How frequently do you write PE lesson notes?					
20	How frequently are you supervised in PE instruction?					

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SECTION B: STATE OF CURRICULAR RESOURCES IN SCHOOLS

Rate the quality of the ff. resources for teaching PE in your school. Tick (√) appropriate responses.

	Comment	Very poor	Poor	Fair	Good	Very Good	Excellent
21	Quality of equipment (NB: equipment are resources that can be moved from place to place. E.g. footballs, volleyball net, mats etc						
22	Quality of facilities (NB: facilities are resources that **cannot** be moved from place to place. E.g. football field, volleyball court, etc)						
23	Quality of supplies(NB: supplies are items that have shorter life span than equipment e.g. papers, books, etc)						

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Rate the quantity of the ff. resources for teaching PE lessons. Tick (√) appropriate responses.

	Comment	Insufficient	Limited	Sufficient	Above Average	Extensive
24	Quantity of equipment					
25	Quantity of facilities					
26	Quantity of supplies					

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SECTION C: INSTITUTIONAL CHALLENGES

The following are institutional challenges that probably hinder teaching and learning of PE. Tick (√) appropriate responses to indicate the extent to which you agree or disagree with the statements.

S/№	**There is a challenge relating to:**	Strongly Disagreed	Disagreed	Agreed	Strongly Agreed
27	Access to equipment for teaching PE				
28	Quality of facilities for teaching PE				
29	Access to supplies for teaching PE				
30	Funding/Budget constraints				
31	Large class sizes for teaching PE				
32	Crowded curriculum for teaching PE				
33	Support from other staff				
34	Access to training/professional development in PE				
35	Other teaching priorities				
36	Supervision of PE programme				

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SECTION D: TEACHER-RELATED CHALLENGES

The following are teacher-related challenges that probably impede teaching and learning of PE. Tick (√) appropriate responses to indicate the extent to which you agree or disagree with the statements.

S/№	**I have a challenge relating to:**	Strongly Disagreed	Disagreed	Agreed	Strongly Agreed
37	Planning for PE lessons				
38	Training/knowledge in PE				
39	Confidence in teaching PE				
40	Interest/enthusiasm for PE				
41	Perceptions of the value of PE				
42	Expertise/qualification for teaching PE				
43	Gender stereotyping of activities				
44	Provision of safely planned and structured lessons				
45	Attitude toward PE				
46	Priority/high level of accountability for other subjects				

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SECTION E: THE PHYSICAL EDUCATION TEACHER

Tick (√) appropriate responses that honestly represent you as a class teacher.

	Statement/Comment	Very Low Extent	Low Extent	Great Extent	Very Great Extent
47	I have sufficient skills to perform a variety of physical activities (PA)				
48	I understand movement concepts, principles, strategies and tactics as applied to learning and performance of PA				
49	I participate regularly in PA				
50	I have achieved health-enhancing level of physical fitness				
51	I exhibit behaviours that respect self and others in PA setting				
52	I value PA for health, enjoyment and social interaction				

THE END! Thank you for completing this questionnaire.

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APPENDIX B

Means, Standard Deviations and Correlations of Components of Institutional Challenges with the Frequency of PE Lessons

Components of Institutional Challenges	M	SD	Frequency of PE Lessons
Access to equipment	2.84	1.03	-.078*
Quality of facility	2.85	1.03	-.041
Access to supplies	2.89	1.02	-.050
Funding/budgetary constraints	2.91	1.07	-.042
Large class	2.52	.98	-.023
Crowded curriculum	2.55	.95	-.001
Support from other Staff members	2.79	.97	-.039
Access to training	2.93	1.02	-.109**
Priority for other subjects	2.79	.95	-.068
Supervision of PE programmes	2.90	1.02	-.040

*. Correlation is significant at the 0.01 level (2-tailed)
**. Correlation is significant at the 0.05 level (2-tailed)

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APPENDIX C

Means, Standard Deviations and Correlations of Components of Teacher-related Challenges with the Frequency of PE Lessons

Components of Institutional Challenges	M	SD	Frequency of PE Lessons
Planning of PE lessons	2.59	-97	-.099*
Training/knowledge in PE	2.62	-.90	-.109**
Confidence in teaching PE	2.53	.92	-.039
Interest in PE	2.55	.94	.031
Perception of the value of PE	2.48	.94	-.015
Expertise/qualification for teaching PE	2.62	.94	-.104**
Gender stereotyping	2.40	.92	-041
Providing safety for children in PE	2.64	.92	-.081*
Attitude toward PE	2.59	.93	-.053
Accountability for other subjects	2.80	.94	-.095*

*. Correlation is significant at the 0.01 level (2-tailed)
**. Correlation is significant at the 0.05 level (2-tailed)

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APPENDIX D

Intercorrelations and Coefficient Alphas for Components of Institutional Challenges

Components of Institutional Challenges	1	2	3	4	5	6	7	8	9	10	M	SD
1. Access to equipment	1	.823**	.764**	.613**	.321**	.375**	.455**	.548**	.523**	.616**	2.84	1.03
2. Quality of facility		1	.746**	626**	.353**	.388**	.471**	.559**	.513**	.580**	2.85	1.03
3. Access to supplies			1	.679**	.349**	.400**	.459**	.524**	.546**	.620**	2.87	1.02
4.Funding/budgetary constraints				1	.364**	.382**	.422**	.534**	.469**	.566**	2.91	1.07
5. Large class					1	.512**	.371**	.321**	.378**	.372**	2.52	.98

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Table continuation

6. Crowded curriculum	1	.420**	.407**	.393**	.398**	2.55	.95
7. Support from other Staff members		1	.546**	.478**	.507**	2.79	.97
8. Access to training			1	.582**	.632**	2.93	1.02
9. Priority for other subjects				1	.639	2.79	.95
10. Supervision of PE programmes					1	2.90	1.02

**. Correlation is significant at the 0.01 level (2-tailed)

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APPENDIX E

Intercorrelations and Coefficient Alphas for Components of Teacher-Related Challenges

Components of Institutional Challenges	1	2	3	4	5	6	7	8	9	10	M	SD
1. Planning of PE lessons	1	.625**	.509**	.370**	.317**	.435**	.338**	.552**	.379**	.176**	2.59**	.97**
2. Training/knowledge in PE		1	.641**	.538**	.434**	.490**	.396**	.483**	.443**	.253**	2.62	.90
3. Confidence in teaching PE			1	.655**	.428**	.517**	.489**	.420**	.400**	.196**	2.53	.92
4. Interest in PE				1	.551**	.498**	.448**	.375**	.503**	.181**	2.56	.94
5. Perception of the value of PE					1	.523**	.431**	.391**	.541**	.303**	2.48	.94
6.Expertise/qualification for teaching PE						1	.497**	.481**	.491**	.298**	2.62**	.94**

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Table continuation

7. Gender stereotyping	1	.433**	.524**	.245**	2.40	.92
8. Providing safety for children in PE		1	.510**	.308**	2.64	.92
9. Attitude toward PE			1	.356**	2.59	.93
10. Accountability for other subjects				1	2.80	.94

**. Correlation is significant at the 0.01 level (2-tailed)

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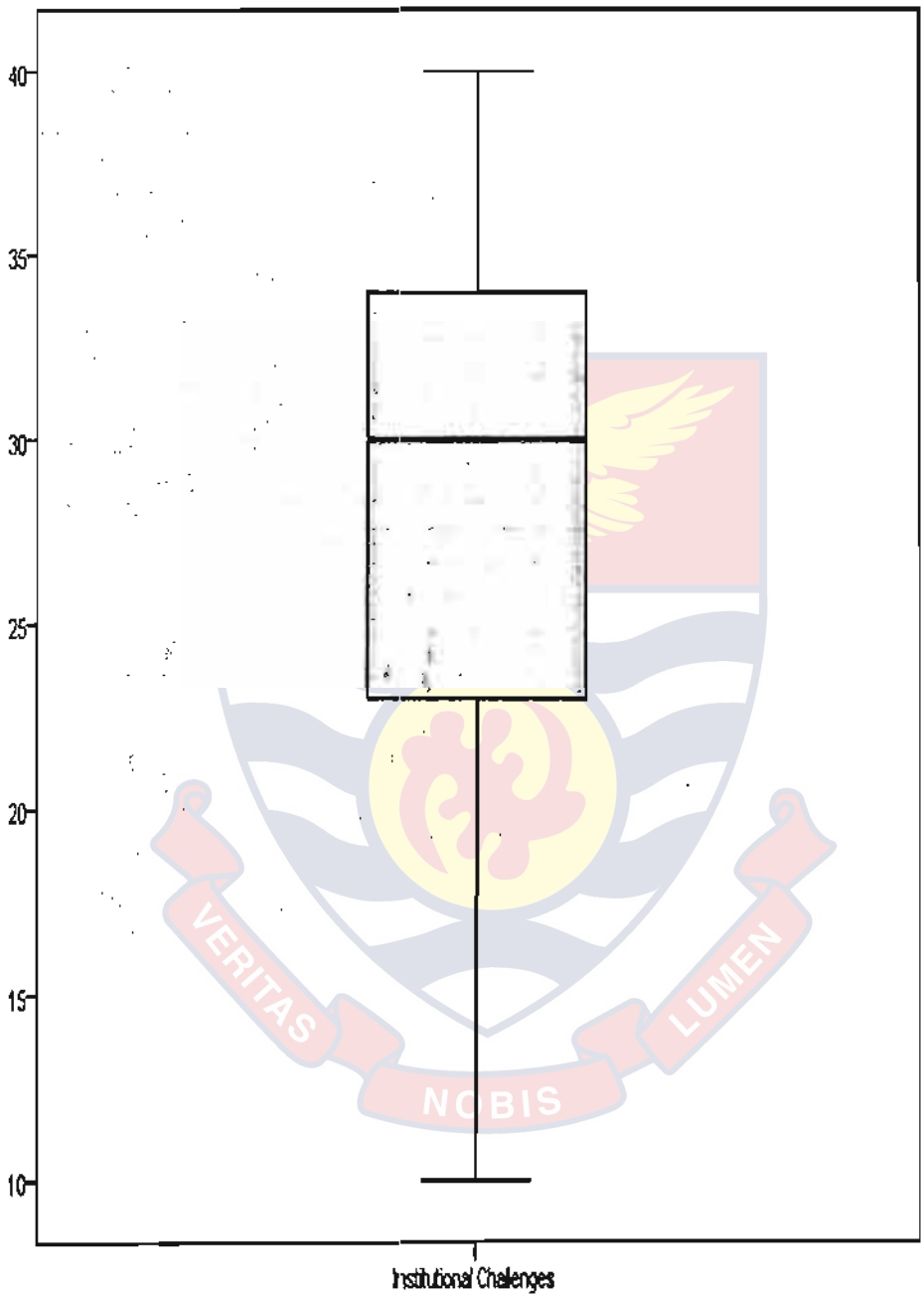
APPENDIX F

Boxplot examination of outliers on institutional challenges



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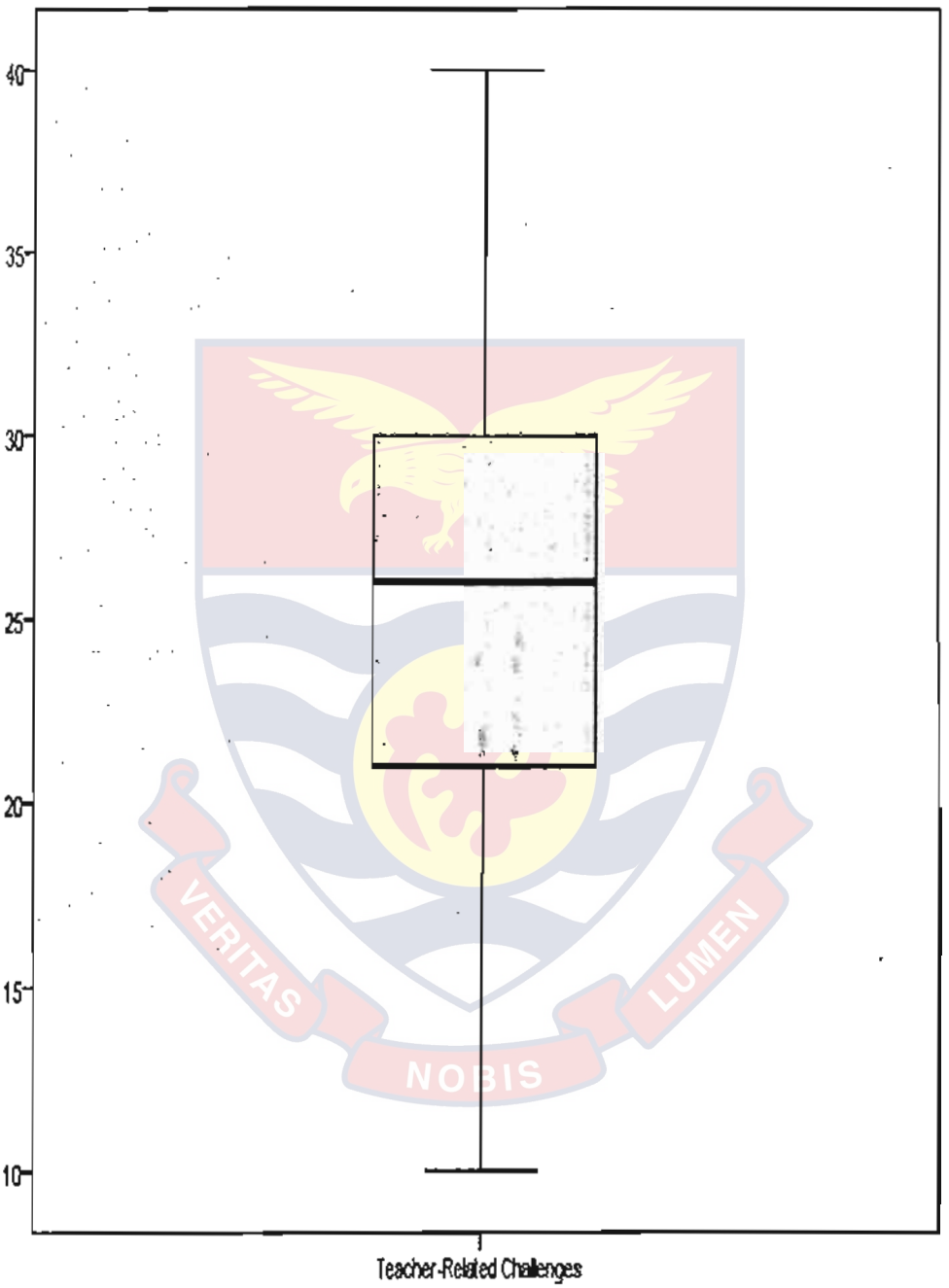
APPENDIX G

Boxplot examination of outliers on teacher-related challenges



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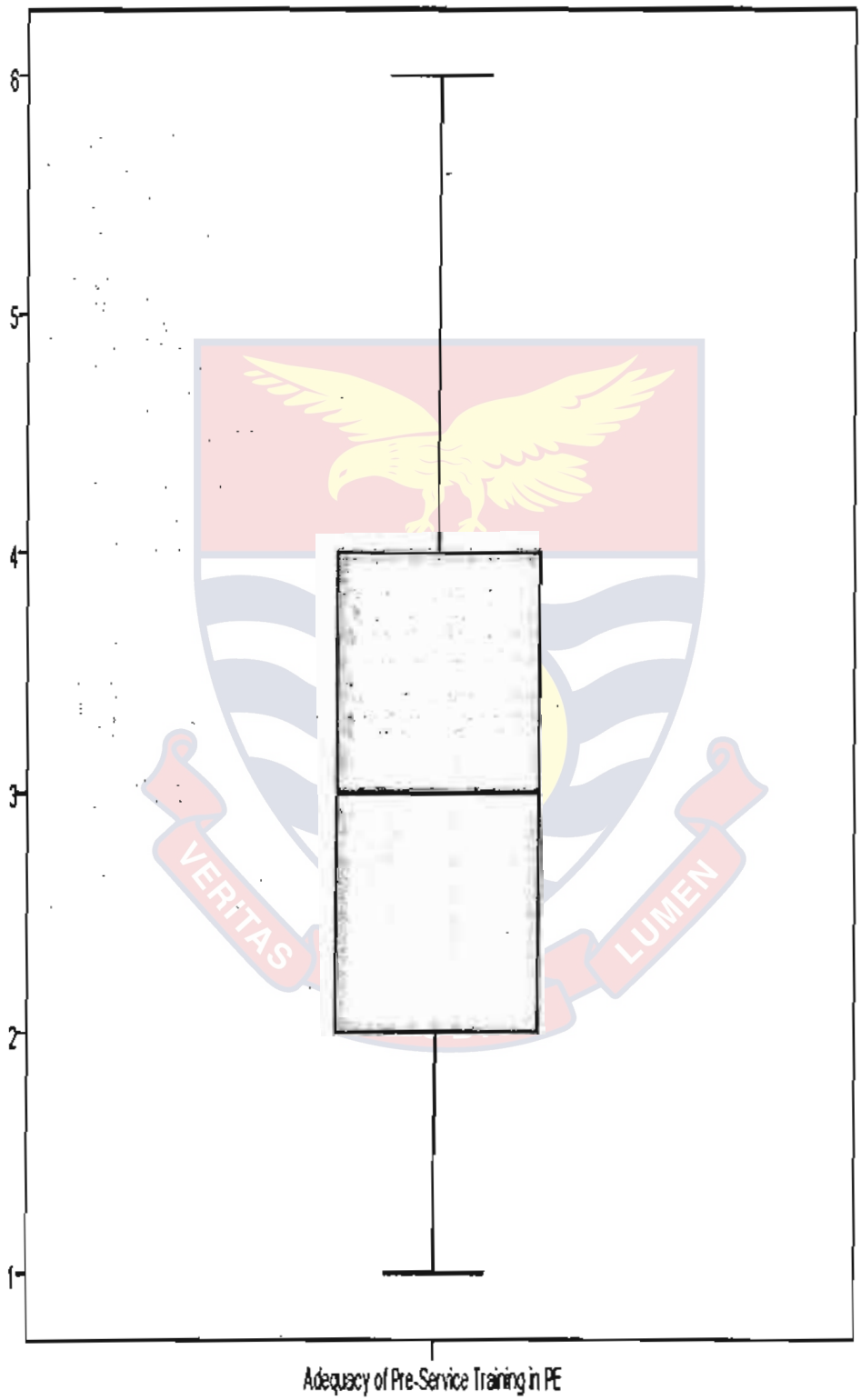
APPENDIX H

Boxplot examination of outliers on adequacy of pre-service education in PE



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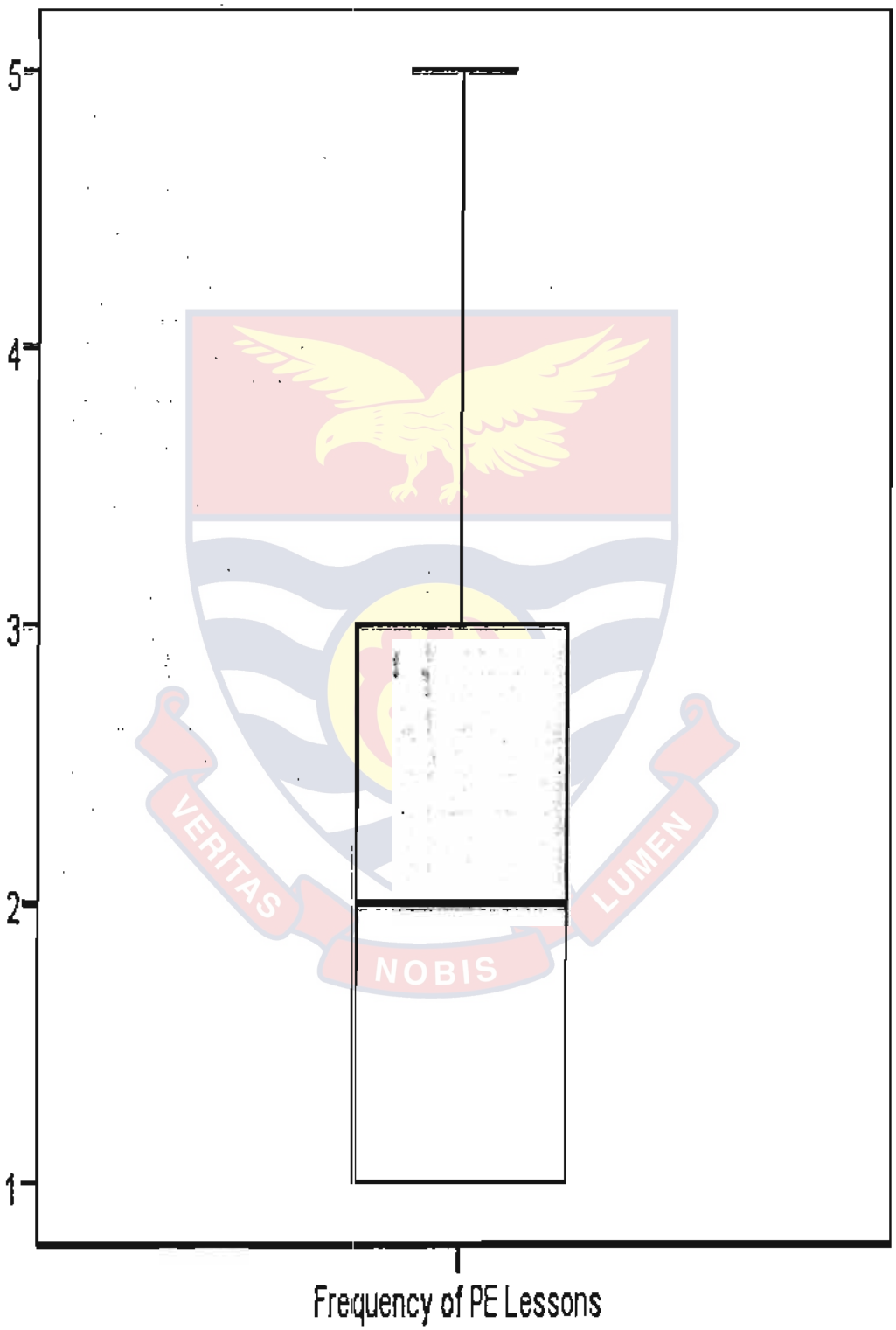
APPENDIX J

Boxplot examination of outliers on frequency of PE lessons



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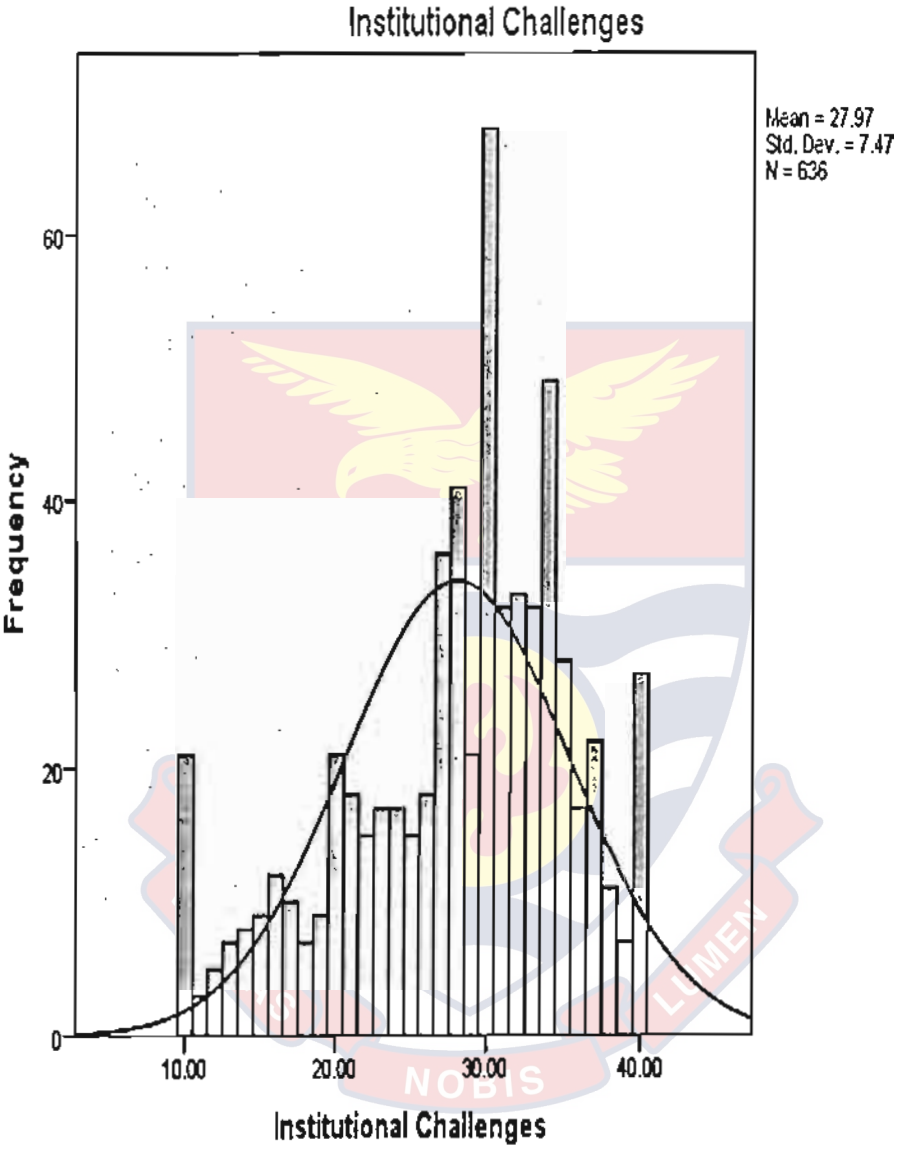
APPENDIX K

Distribution of scores on institutional challenges



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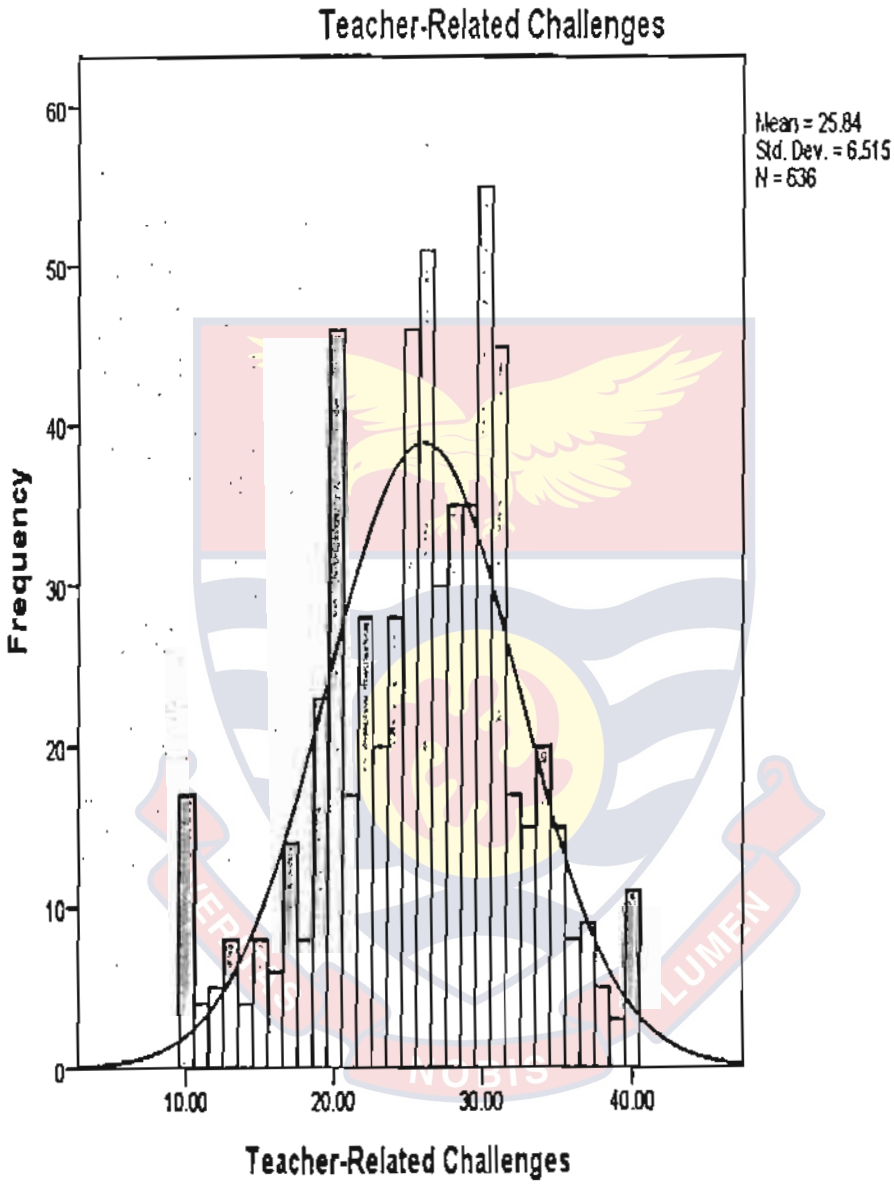
APPENDIX L

Distribution of scores on teacher-relate challenges



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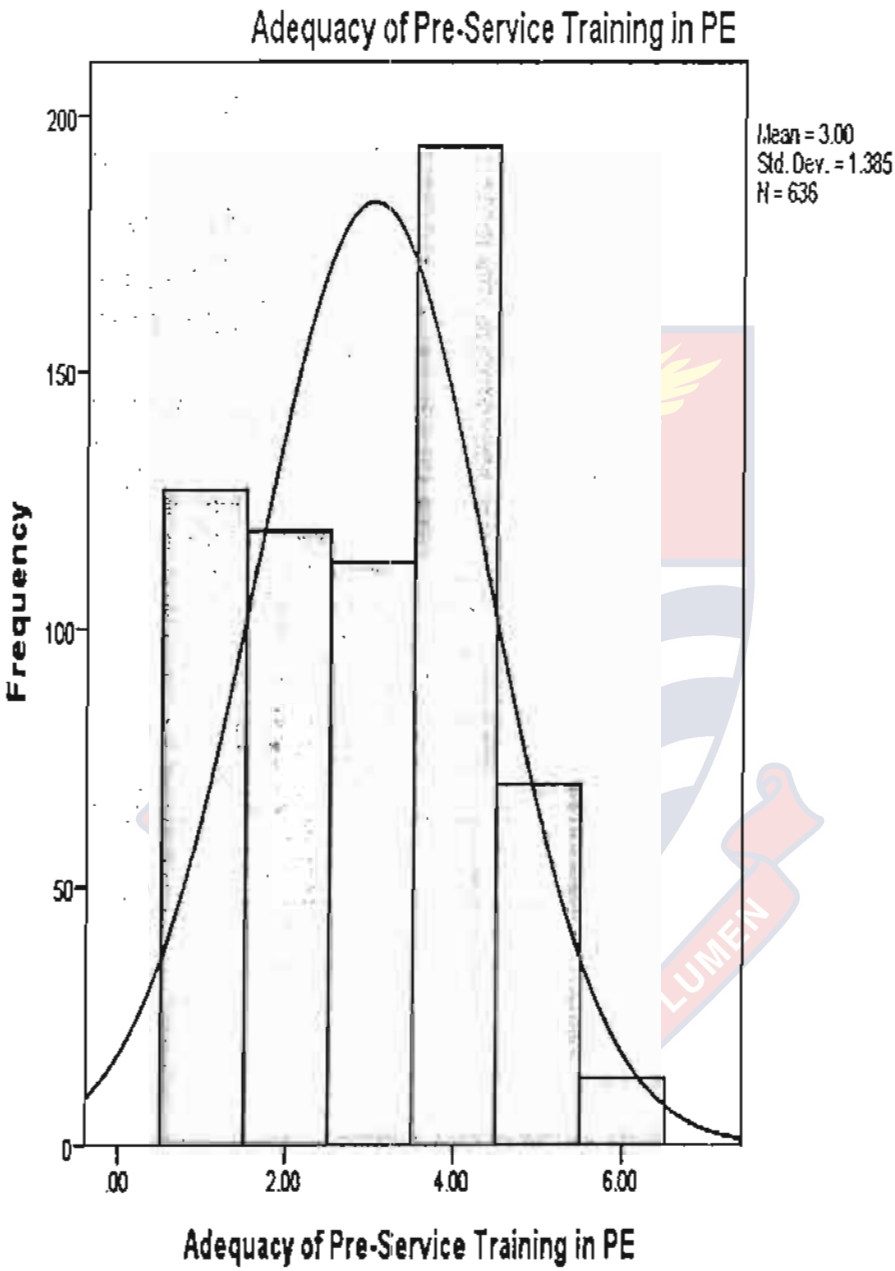
APPENDIX M

Distribution of scores on adequacy of pre-service education



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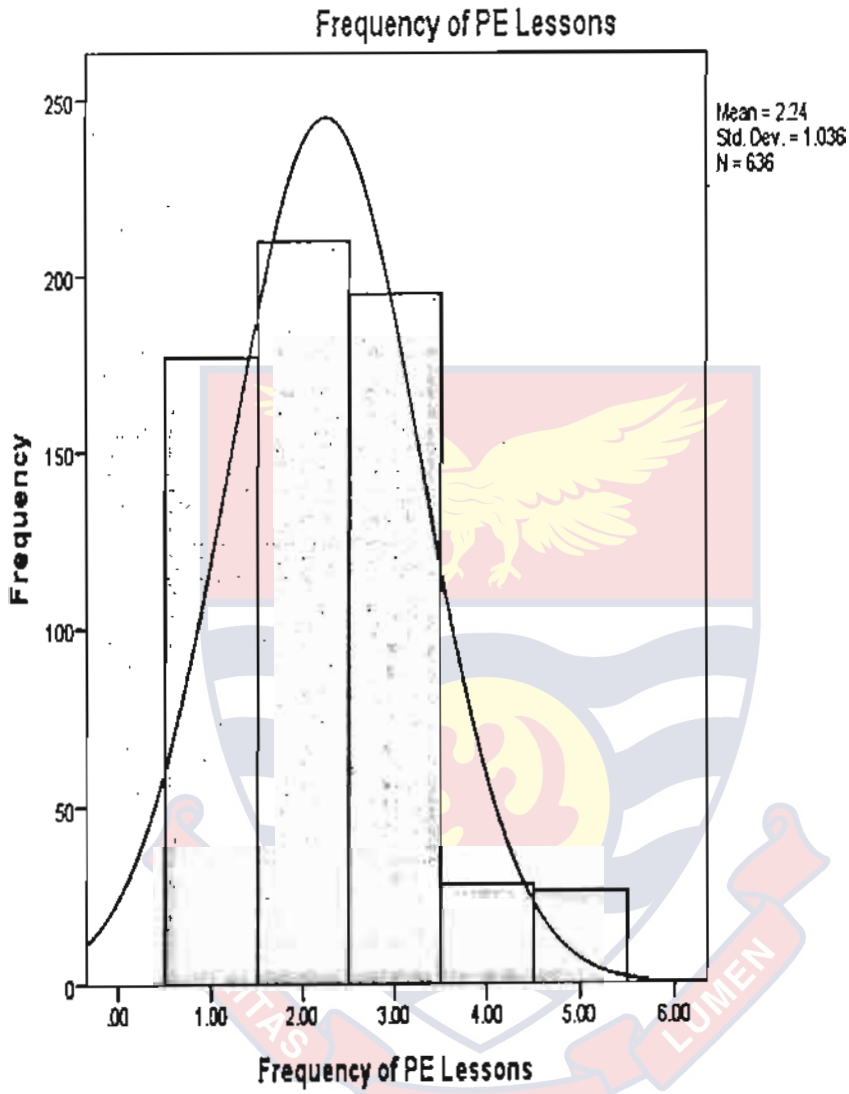
APPENDIX N

Distribution of scores on frequency of PE lessons



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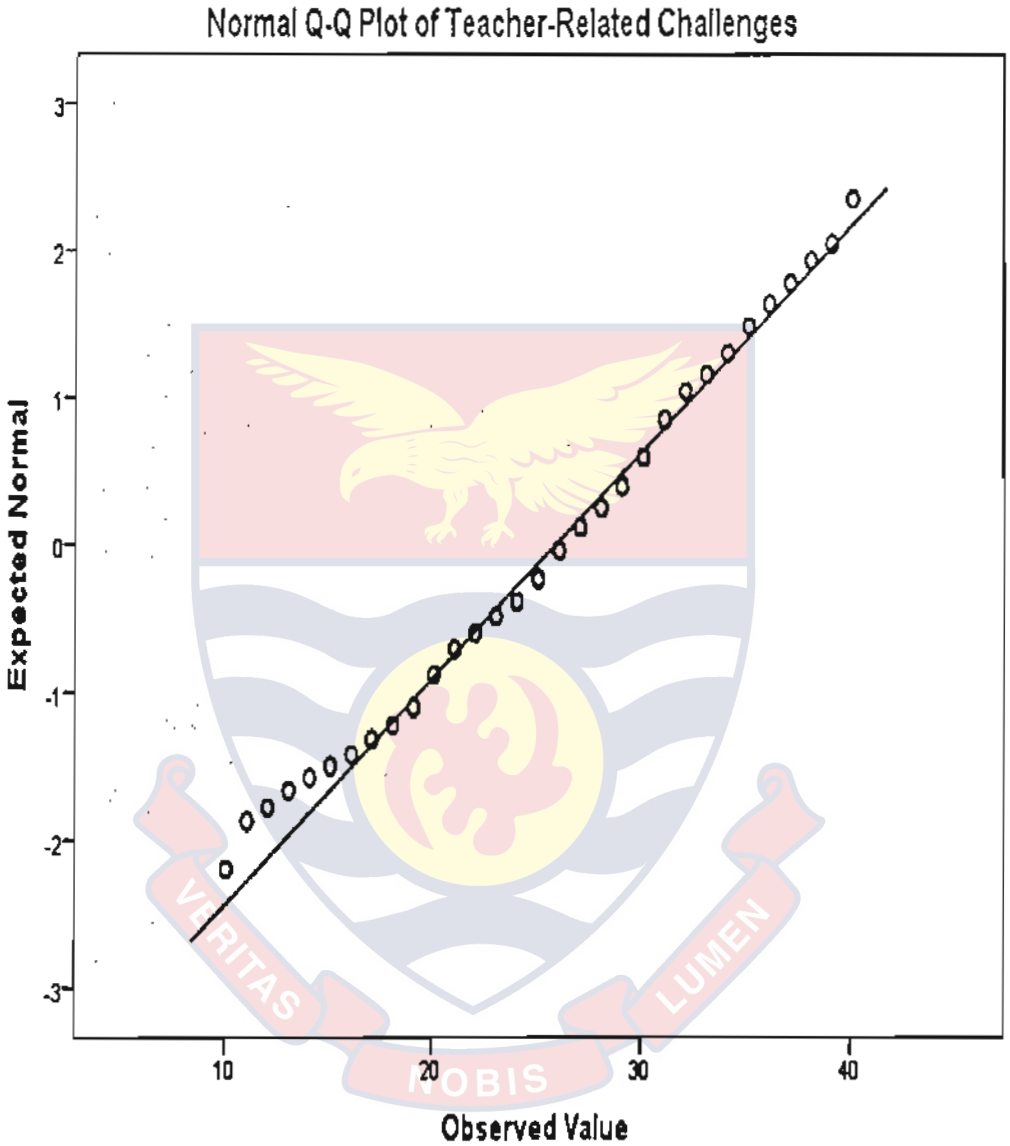
APPENDIX P

Distribution of scores on teacher-related challenges (Normal Q-Q plot)



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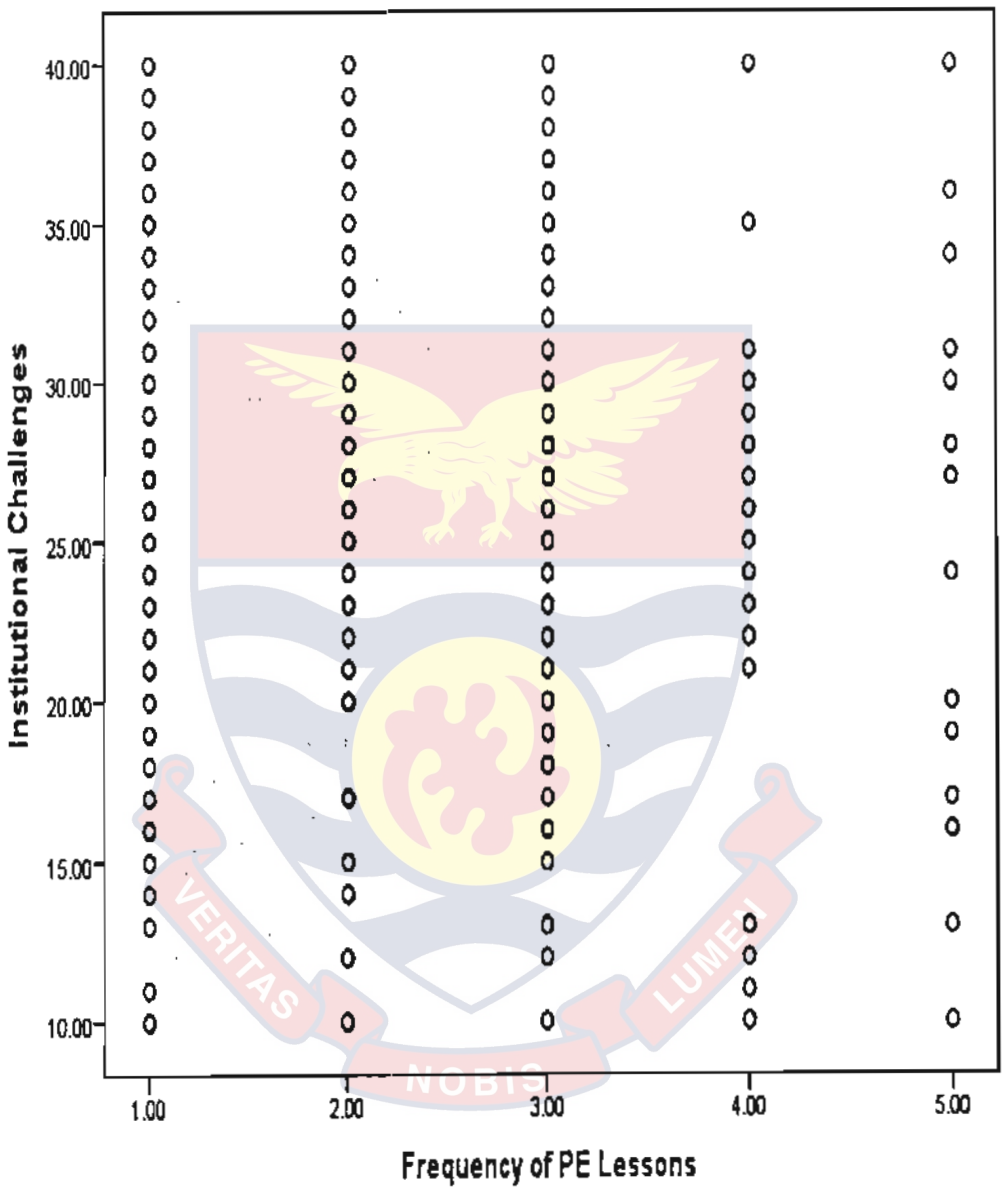
APPENDIX Q

Scatterplot observation of the relationship between institutional challenges and frequency of PE lessons



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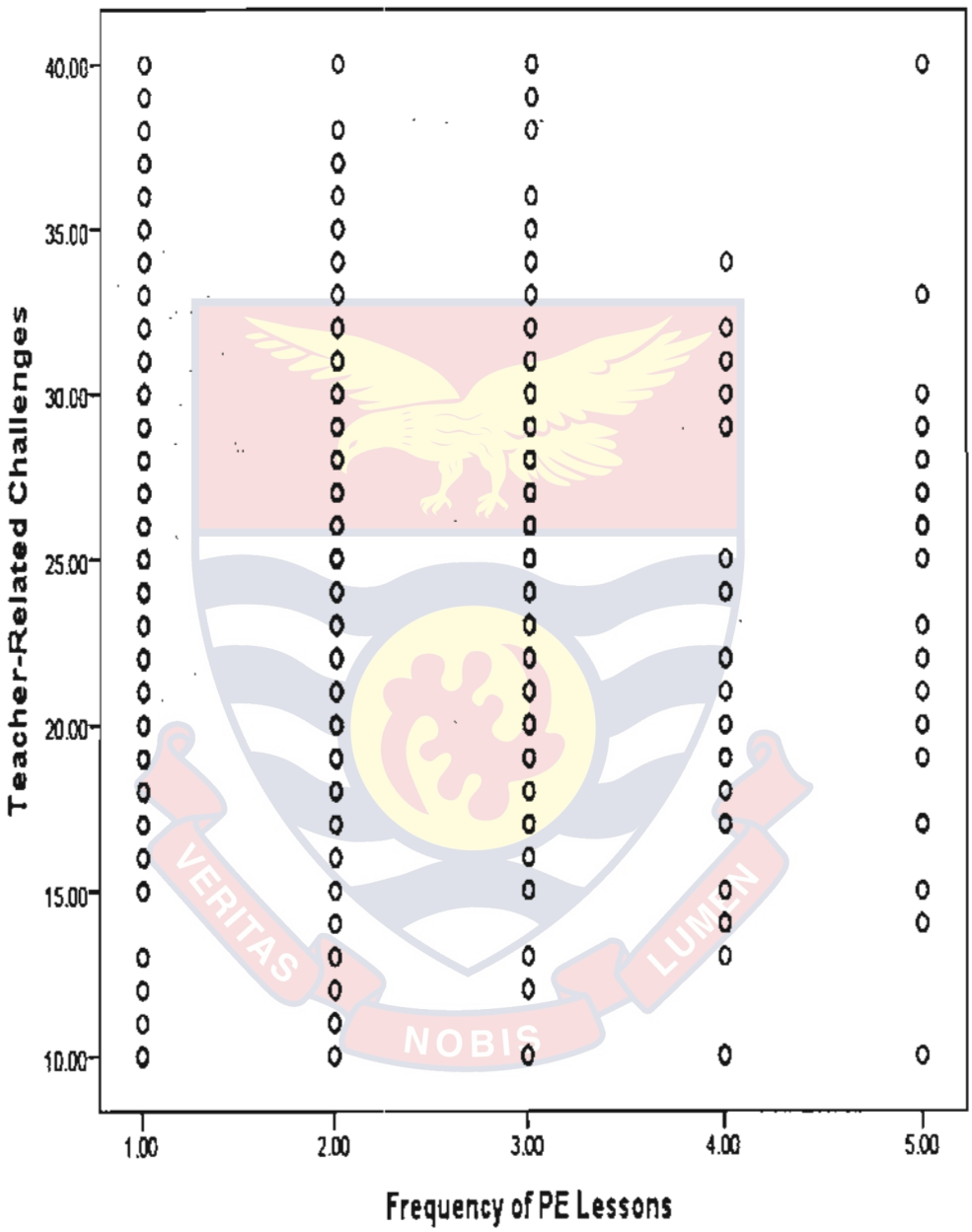
APPENDIX R

Scatterplot observation of the relationship between teacher-related challenges and frequency of PE lessons



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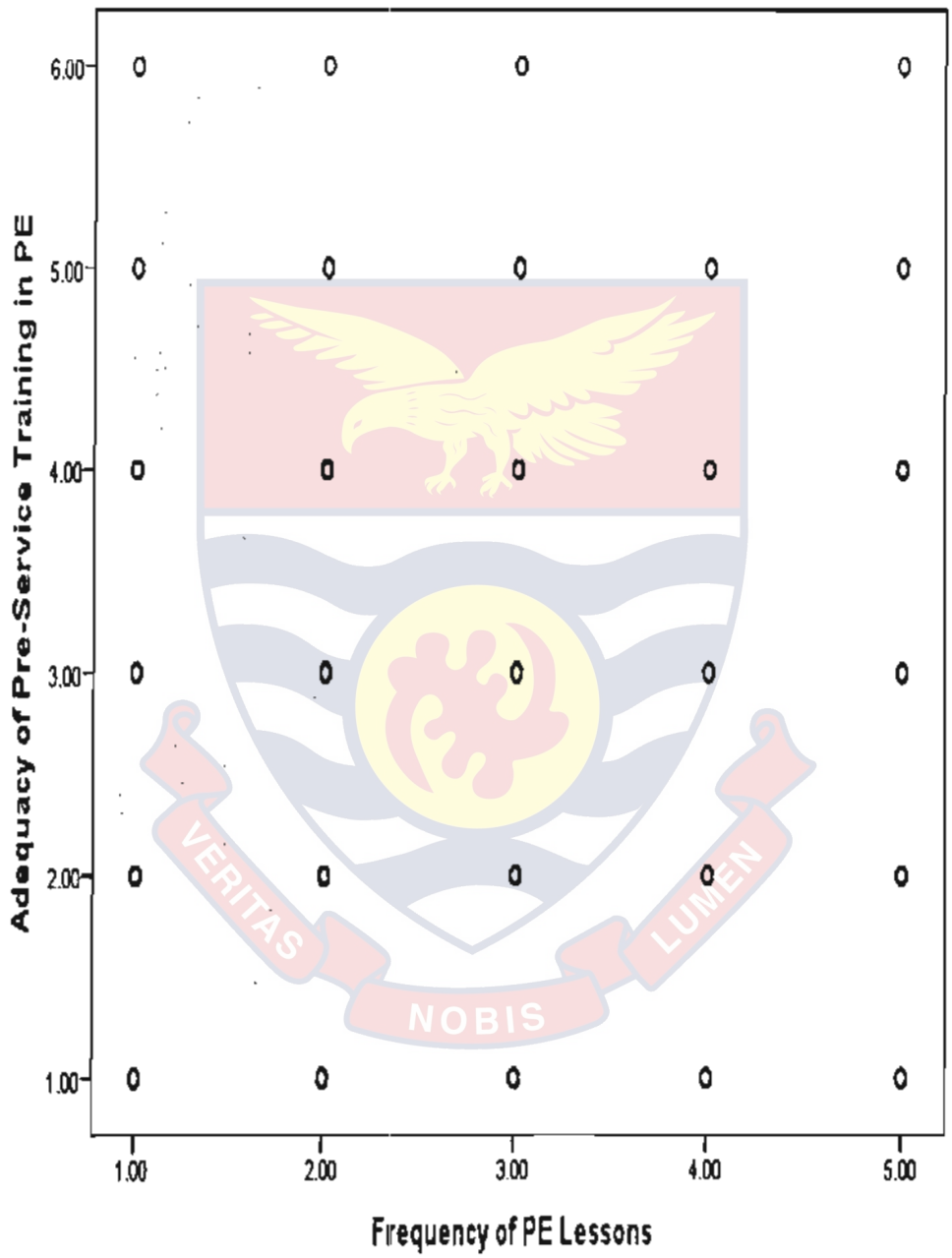
APPENDIX S

Scatterplot observation of the relationship between adequacy of pre-service education in PE and frequency of PE lessons



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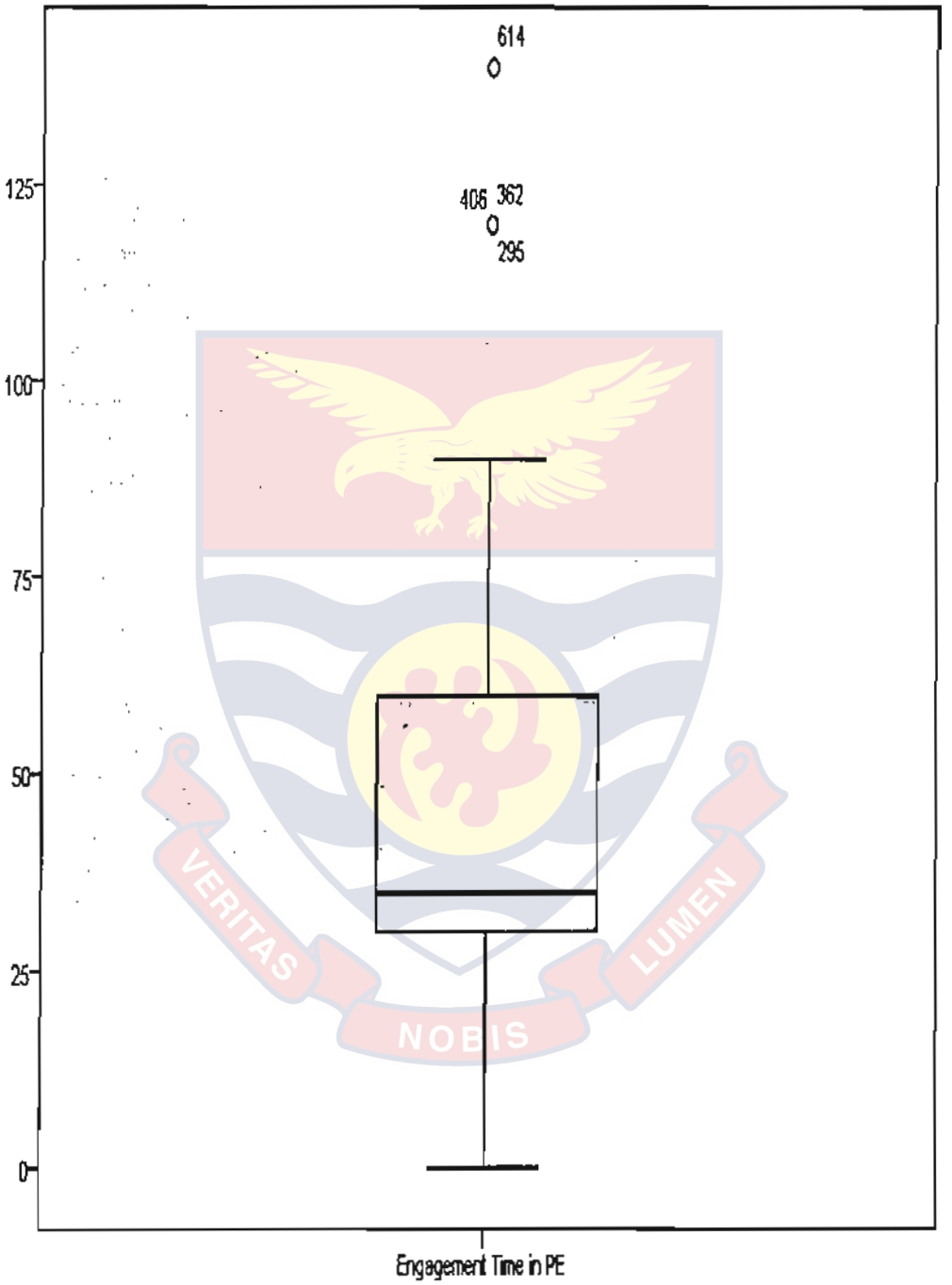
APPENDIX T

Boxplot examination of outliers on PE engagement time



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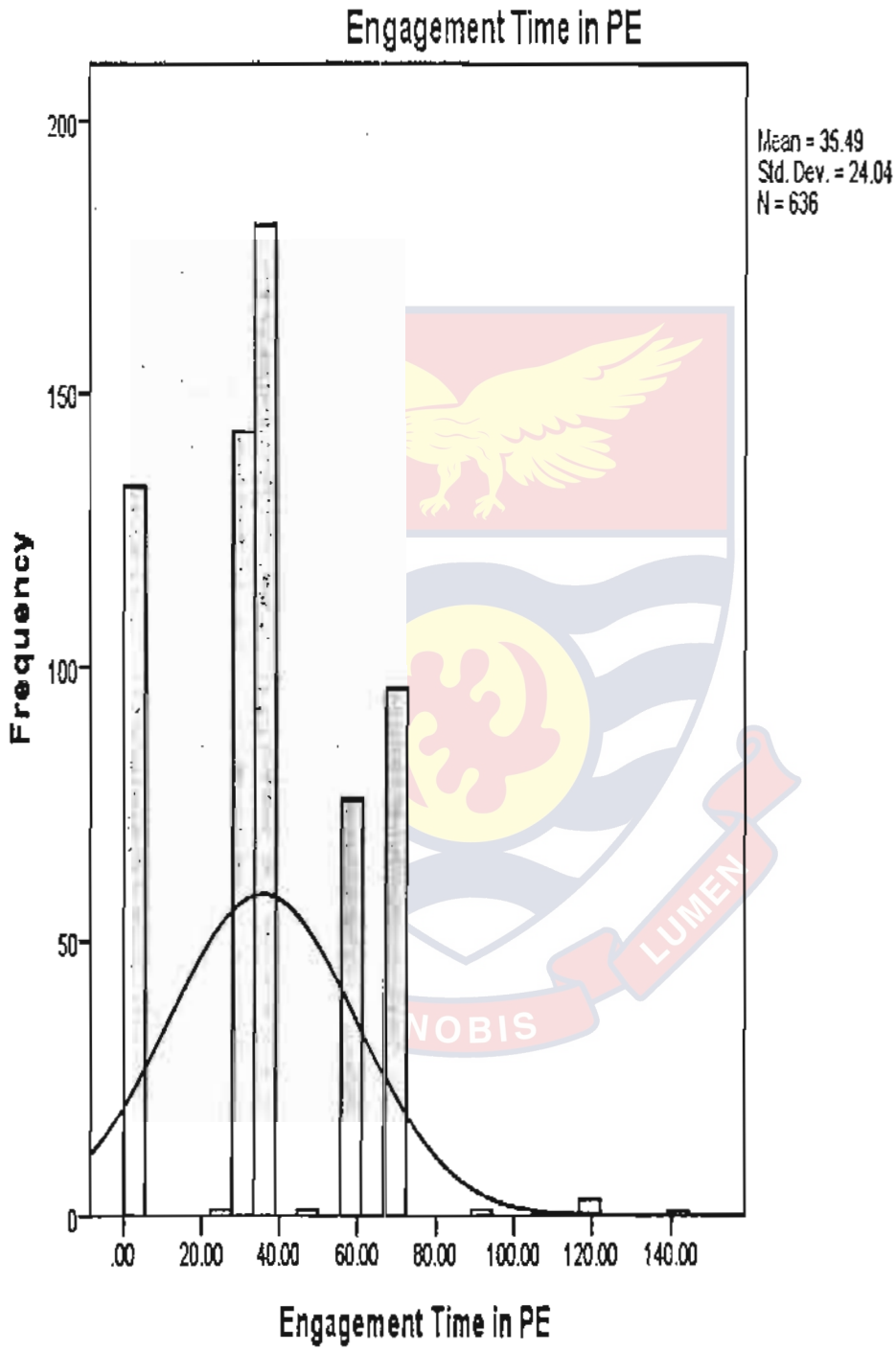
APPENDIX U

Distribution of scores on PE engagement time



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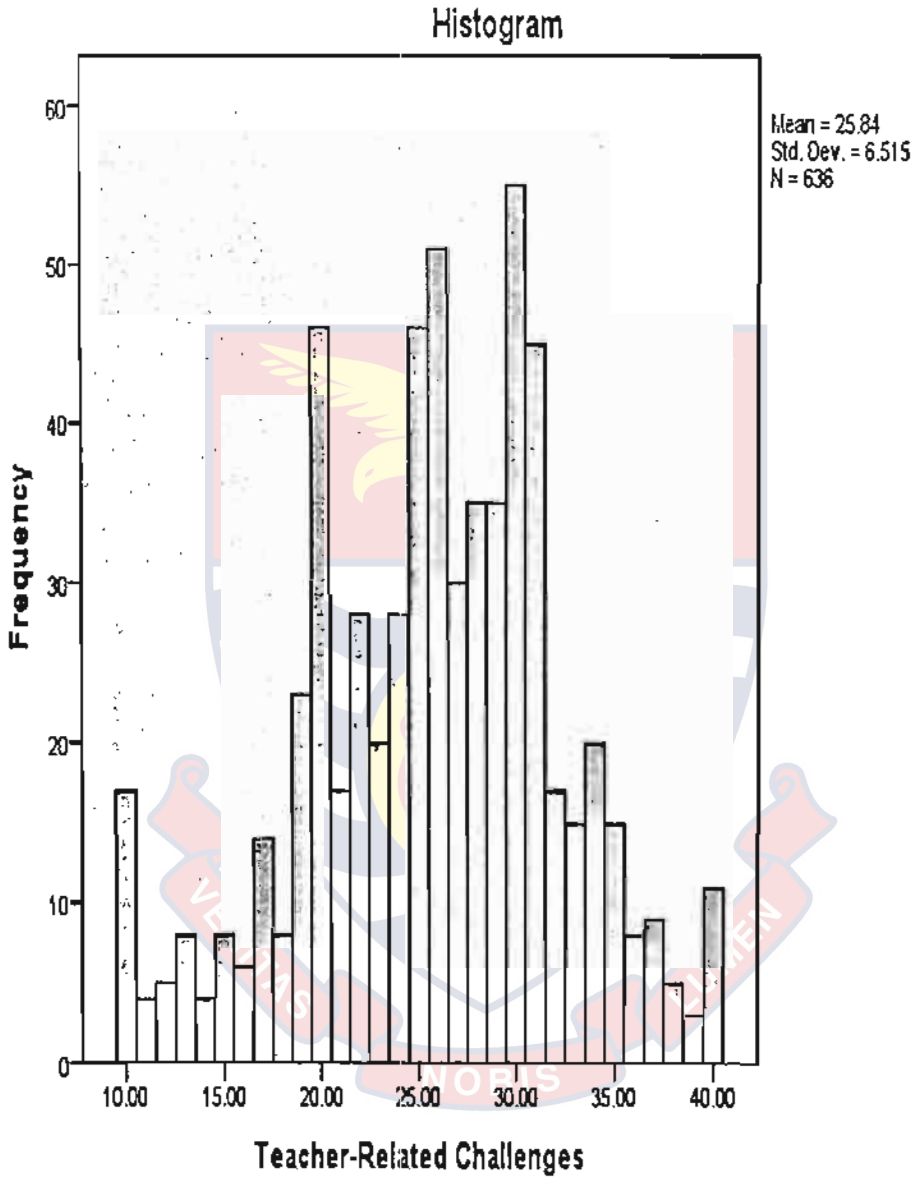
APPENDIX V

Histogram examination of outliers on teacher-related challenges



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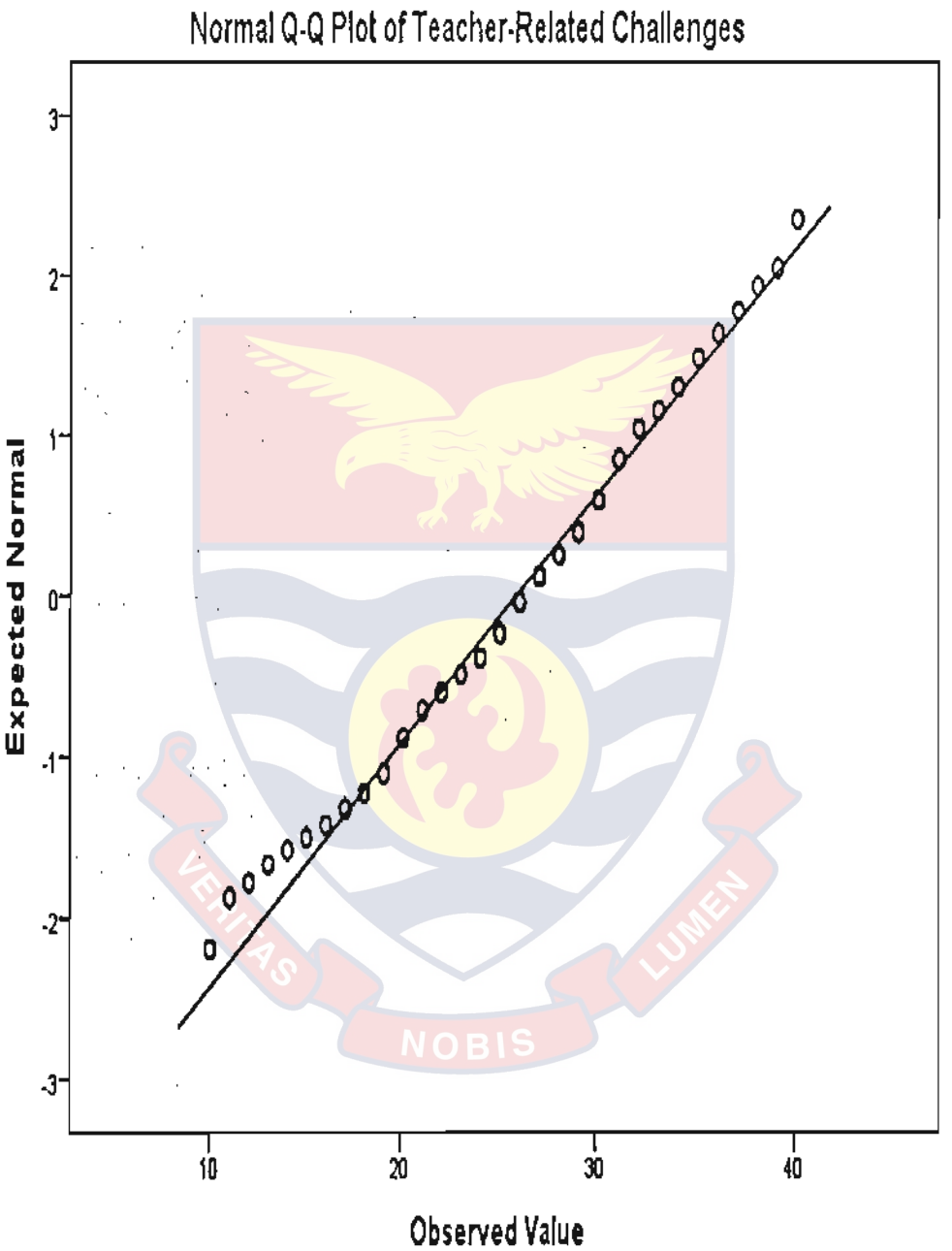
APPENDIX W

Distribution of scores on teacher-related challenges (Normal Q-Q plot)



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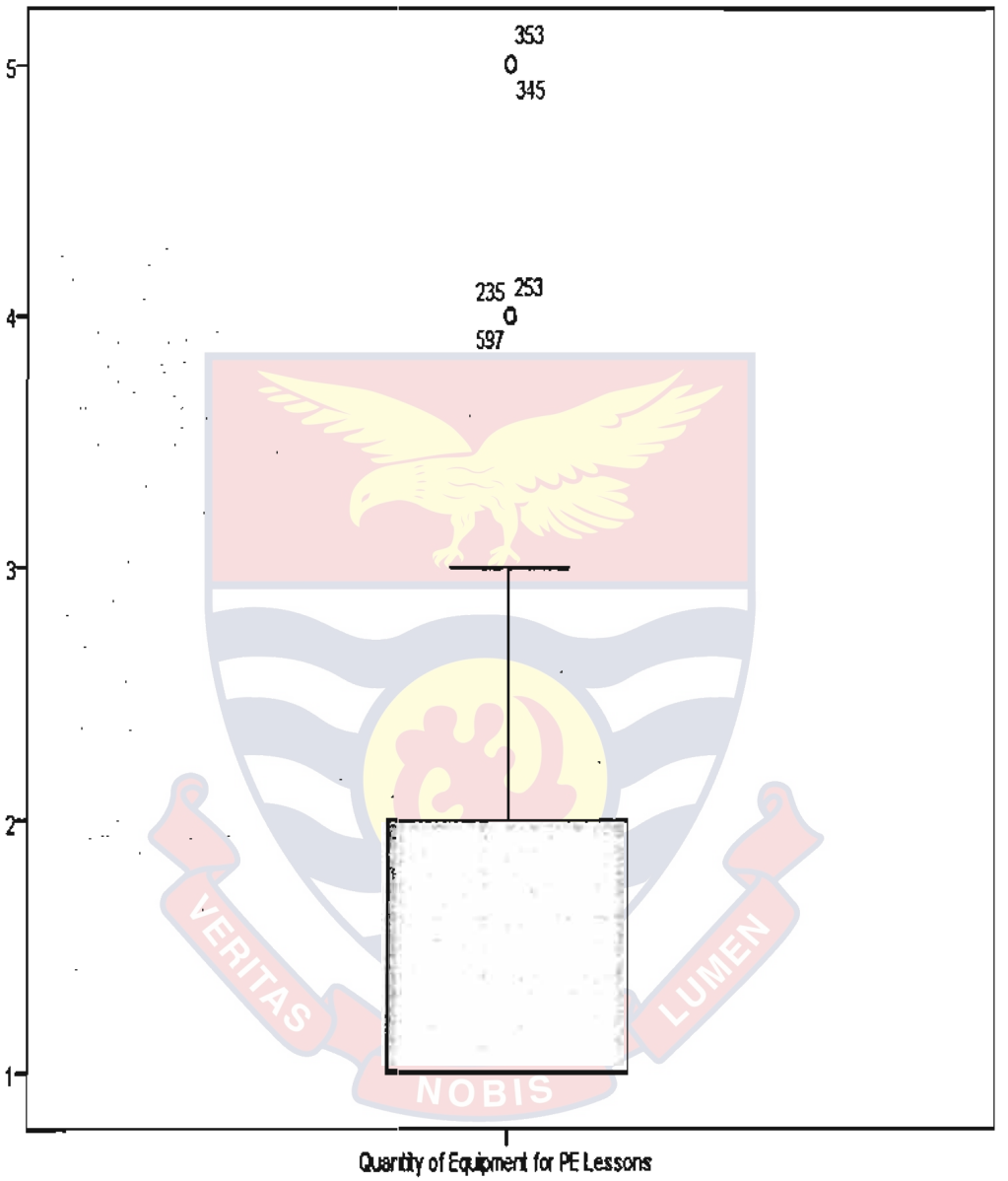
APPENDIX X

Boxplot examination of outliers on quantity of equipment



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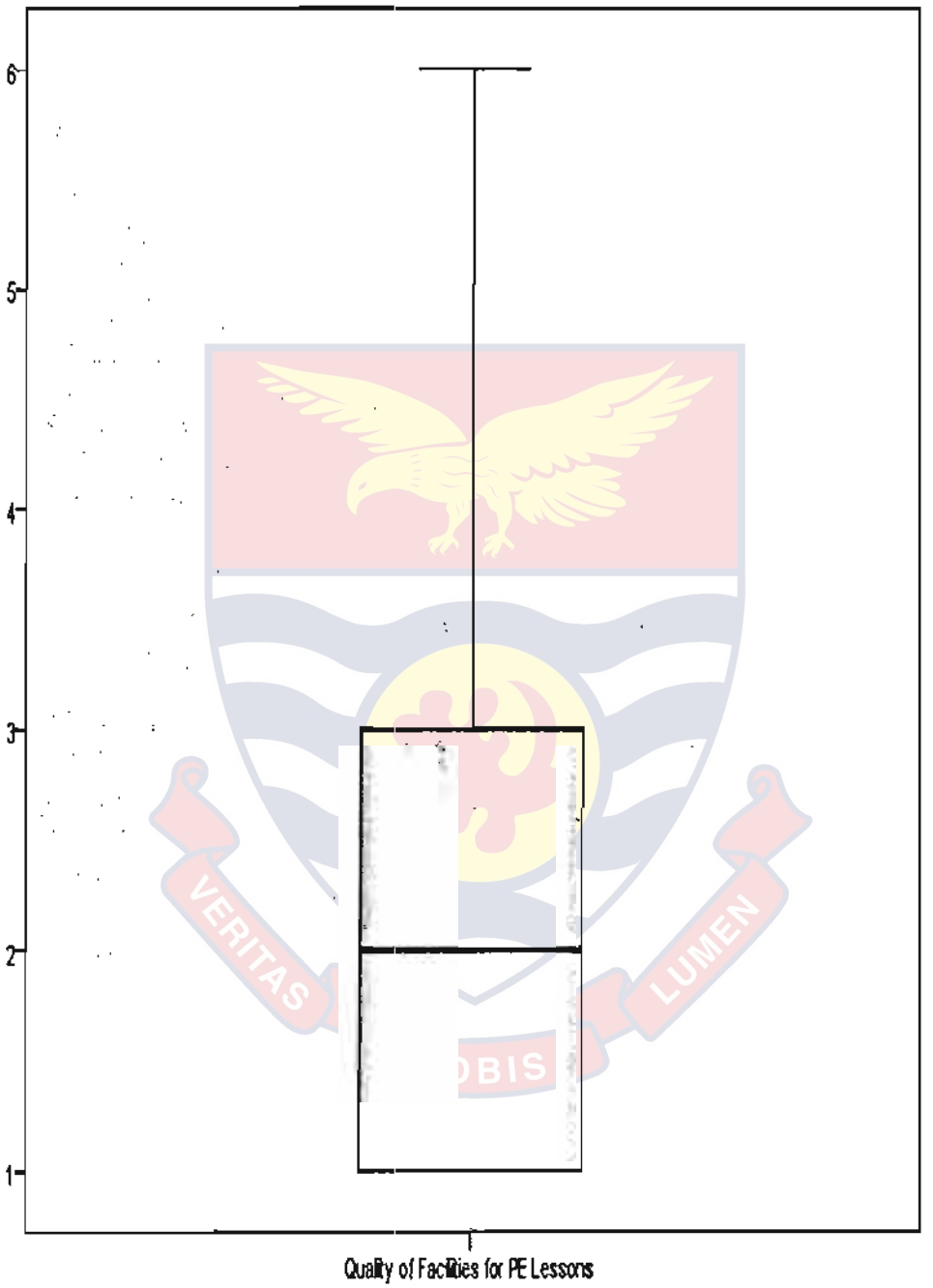
APPENDIX Y

Boxplot examination of outliers on quality of facilities



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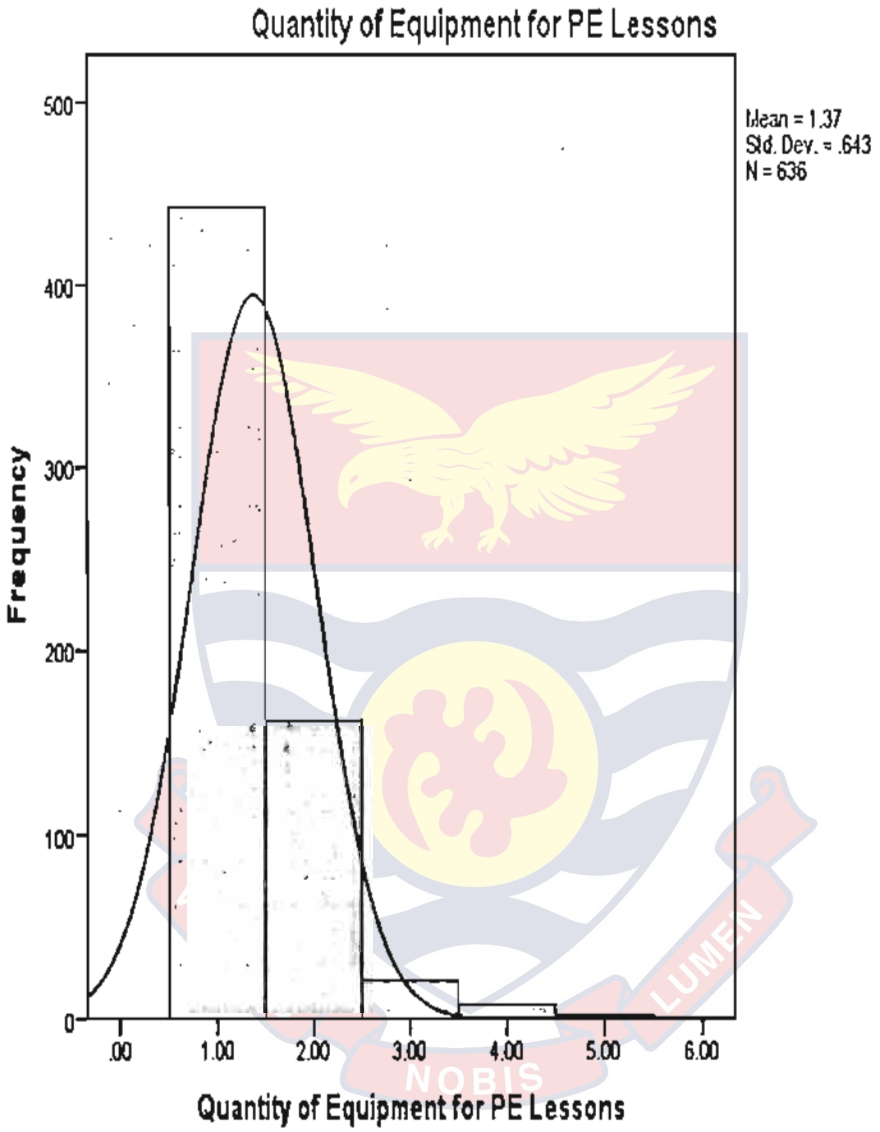
APPENDIX Z

Distribution of scores on quantity of equipment



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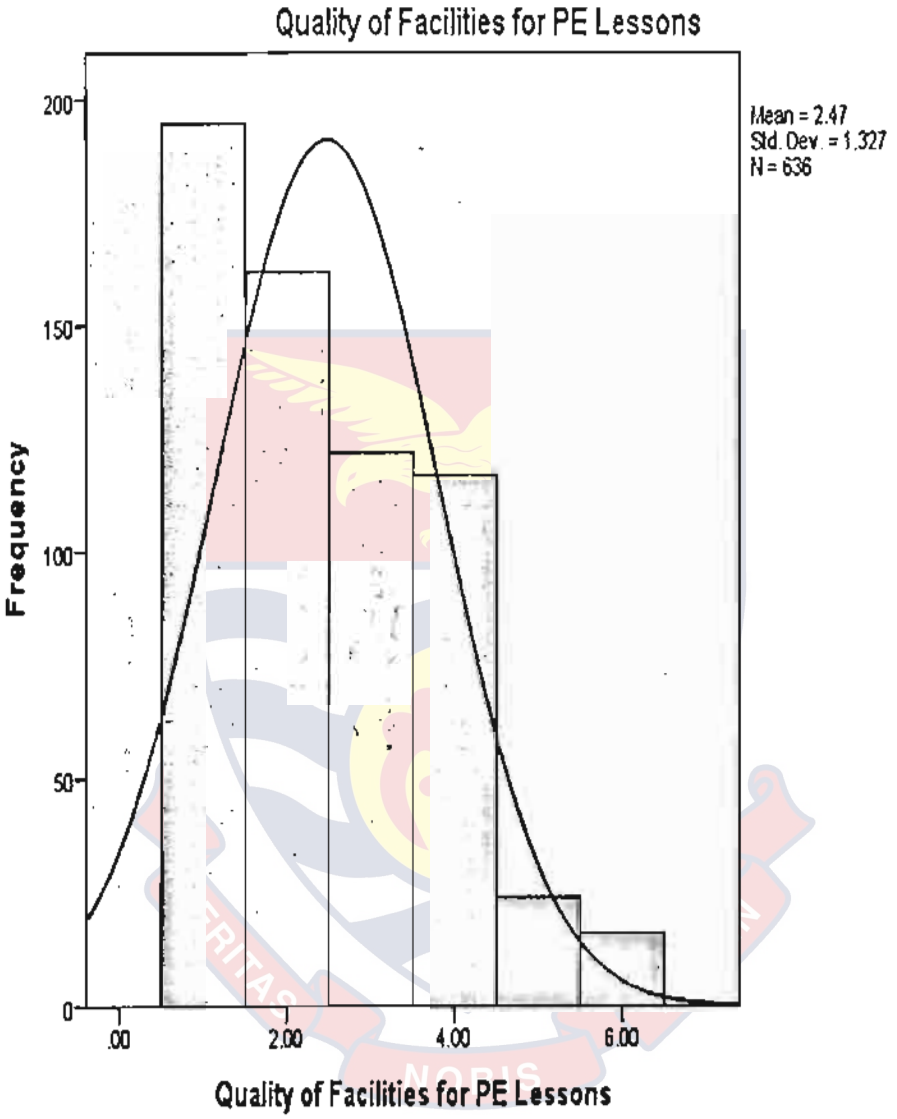
APPENDIX AB

Distribution of scores on quality of facilities



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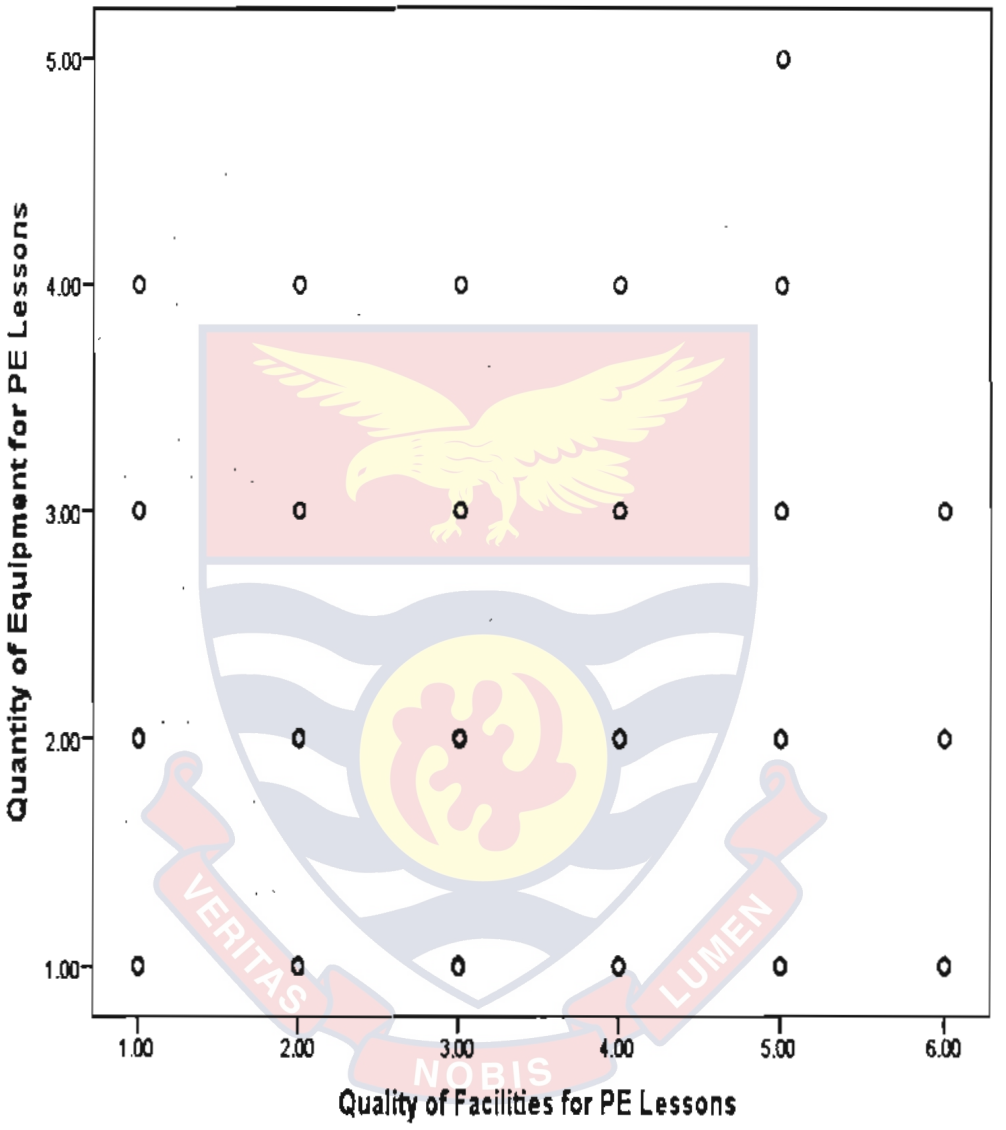
APPENDIX AC

Observed non-linear relationship between quantity of equipment and quality of facilities



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APPENDIX AD

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E-MAIL: irb@ucc.edu.gh
C/O Directorate of Research, Innovation and Consultancy

OUR REF: UCCIRB/A/2016/36
YOUR REF:
OMB NO: 0990-0279
IORG #: IORG0009096

11TH JANUARY, 2017

Mr. Samuel Kofi Donkor
Department of Health, Physical Education and Recreation
University of Cape Coast

Dear Mr Donkor,

ETHICAL CLEARANCE –ID :(UCCIRB/CES/2016/14)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for the implementation of your research protocol titled **'Perceived challenges confronting primary school teachers in teaching and learning of Physical Education in the Volta Region of Ghana'.**

This approval requires that you submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

Please note that any modification of the project must be submitted to the UCCIRB for review and approval before its implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Samuel Asiedu Owusu
Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST
Date:.....

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APPENDIX AE

UNIVERSITY OF CAPE COAST
CAPE COAST, GHANA
COLLEGE OF EDUCATION STUDIES
FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION
Department of Health, Physical Education & Recreation

TELEPHONE: 233-0206610931, 0543021384, 0268392819
TELEX: 2552, UCC, GH.

Cables & Telegrams:
UNIVERSITY, CAPE COAST

Ref. No. ED/PED/14/0002

22nd September, 2016

TO WHOM IT MAY CONCERN

INTRODUCTORY LETTER : SAMUEL KOFI DONKOR (ED/PED/14/002)

The bearer of this letter is a PHD student of the above department. In partial fulfilment of the requirements for the programme, he is to conduct a research for his thesis and would need assistance in the form of data collection for pretesting from your outfit.

We would therefore be most grateful if the necessary assistance is offered to him.

We count on your co-operation.

Thank you.

Dr. Charles Domfeh
HEAD

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