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# Physical Education Teachers' Demographic Characteristics and their Pedagogical Skill Preferences and competences in Teaching Physical Education in Kumasi Metropolis, Ghana

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## Abstract

The purpose of the study was to establish the relationship between PE teachers' demographic characteristics and their pedagogical skill preferences and competences in teaching PE in public senior high schools in Kumasi metropolis, Ghana. The study employed convergent parallel mixed-method design where both quantitative and qualitative data were collected, analyzed, compared, related discussed and interpreted simultaneously. The study used Yamane's sample size determination formula to obtain a sample size of 393 participants who were selected from 5 schools using purposive and simple random sampling techniques. It included 372 SHS 3 students, 16 PE teachers and 5 SHS heads. The study adopted interview, questionnaires, Duration Recording (ALT-PE Instrument), Observation and review of documents as data collection instruments. Data collected were analyzed using Rate per minute, chi-square, frequency, mean and standard deviation. It was found that equipment, facilities, teachers' pedagogical skills their demographic characteristics have significant influence on students' skill acquisition. The study concluded that teachers' demographic characteristics such as gender, age, work experience; number of years in teaching PE, academic qualification and the institutions teachers attended influence their pedagogical skill preferences and competencies in teaching PE. It was recommended that the identified academic inadequacies in the schools have to be resolved through adequate resourcing, infrastructure, teacher competency and preferences.

**Keywords:** *Pedagogical kills, Demographic Characteristics, Preferences, competency, senior high school, Duration, Recording, academic, Learning, Time, Kumasi Metropolis, Ghana.*

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### **1.1 Background to the Study**

Every country in the world envisions the education of its citizenry in all spheres of human endeavour. For every society, education is a tool for growth and development because it not only imparts knowledge, skills and inculcates values, but it is also responsible for building human resource which nurtures, drives and sets technological innovation and economic growth which is very important for survival of any society (Fauzia et al., 2013). True development starts with human resource development where formal education is held in high esteem as an effective tool for development and ultimately harnessing socio-economic growth (Adane (2013). In other words, education boost the output of labour force and it shows the way to economic growth and development.

Kakar, Khiliji and Khan (2011) on the link between education and development indicate that in human endeavour, schooling has long correlation with fiscal improvement and human development. Collins (1993) opines that, education is the systematic instruction and training that is given especially to the young ones in preparation for life. This means that Education is said to be the knowledge and training and skill that one gains from being taught at school, college, university or a society. Also it can be said to be a process or training that has an outcome or purpose which includes acquiring skills, building mental capacity, emotional stability and making the individual socially wholesome. Aziz (2012) maintains that quality of education has a direct connection to the quality of instruction that learners receive. Similarly, Chval (2015) shares the views of Aziz (2012) and maintains that quality of education depends on the quality of teachers, particularly in the initial stages of education where learners are at early ages. Indeed, the quality of teachers that is both academic and professional cannot be over emphasized so far as the teaching of learners are concerned.

In America Green (2008) states that it has been largely agreed that Physical Education must be made a focal point that is a starring role in the quest to address health issues among the youth and health promotion being regarded as the panacea to many students' health issues in schools. Understandably, policies promoting physical activities in schools are important in combating the supposed obesity and other health issues. Mir (2013) opines that schools in the United States of America have been progressively encouraging teachers to use learner-centred pedagogical skills since the beginning of the 20th century. Mir (2013) continues to state that in United States of America, there is a solid emphasis on student-centred pedagogies where learners are placed at the center of teaching and learning process as the role of the teacher is shifted from being a source of knowledge to a facilitator

### **1.2 Statement of the Problem**

Teaching physical education is a good career choice for people with passion for healthy living since PE is from cradle to grave. It is incumbent upon PE teachers to demonstrate preferences and competencies using appropriate pedagogical skills that will seek to motivate students to embrace exercise regimen in and out of school; set individual goals and participate in physical activities since PE is for life and not a nine day wonder. Government of Ghana through the ministry of Education has instituted some form of incentive packages for teachers such as, study leave with pay, teacher award scheme, commuting and car maintenance allowances with the aim of encouraging teachers to be more effective and making themselves available to students in the quest

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to improving teaching and learning. However, the issues of teachers' pedagogical skills have not been exhaustively considered as critical to enhance students' practical performance; hence needing important review, because PE and its related activities are important to the emotional, social, mental and physical growth of the young people.

It is sad and regrettable to note that, with all the incentives packages instituted by the government to motivate teachers, it is reported that in most of the senior high schools PE is in limbo as many of the teachers have indirectly ignored teaching the subject by concentrating only on the theory aspect leaving the practical aspect ajar while some of them have turned themselves into sports coaches. This phenomenon is a worrying trend since there is a lacuna whether the students are getting what they really need to acquire in PE, whether the subject is being taught well or not, whether the teachers lack the appropriate pedagogical skills to teach the practical aspects of the subject or it is because the teachers themselves are not competent in handling the practical aspect of the subject. The literature on PE teachers' pedagogical skills are relatively sparse within physical education setting, the little studies that have been done on pedagogy concentrate mainly on influence of PE teachers' pedagogical content knowledge (PCK) in elementary schools.

There is therefore a gap in knowledge to establish whether PE teachers compromise on the pedagogical skills they employ and also the available literature is silent as to whether it is the sparse studies done on teachers' pedagogical skills that is making the teachers have the appetite in teaching only the theory aspect of the subject while relegating the practical aspects to the background. It was against this background that the study was carried out, with the sole aim of establishing the relationship between PE teachers' demographic characteristics and their pedagogical skill preferences and competencies in teaching PE in Kumasi metropolis, Ghana.

### **1.3 Research Objective**

To establish the relationship between PE teachers' demographic characteristics and their pedagogical skill preferences and competences in teaching PE.

### **1.4 Hypotheses**

**H<sub>0</sub>:** The demographic characteristics of PE teachers have no significant influence on their pedagogical skill preferences and competency in teaching PE.

## **2.0 Literature Review**

### **2.1 Demographic Characteristics and Teachers' Preferences and competences**

To achieve quality of education in the era of education for 'all', it largely depends on the kind of teaching instructions that learners receive. In general, teaching can be defined as a thoughtful, planned and systematic organization of learning, Rink (2013). Ana (2009) states that quality of education to some extent is measured by learners' performance with respect to teacher's competence in affecting students' behaviour. Thomson (2010) asserts that, the competence and enthusiasm of teachers determine the extent to which an educational system can rise. Competence as explained by Westera (2001) is the ability to do something successfully or efficiently. In other words, this is strongly linked with the ability to master complex situations and goes beyond the levels of knowledge and skills to include an explanation of how knowledge and skills are applied in an effective way. Ana (2009) further maintains that a teacher's performance depends on his or



her knowledge in terms of the subject matter and general pedagogy which is directly connected to the teacher's attitudes, demographic characteristics and competences.

Abdurrahman and Nilüfer (2012) conducted a study and reported that Male Physical Education teachers viewed the practice skill of teaching physical education as the most beneficial and effective, self-check and divergent were also viewed as the least effective when it was employed in teaching. Sixty six PE teachers (32 men, 34 women) participated voluntarily in this study, 36-item of questionnaire was administrated to the teachers. When asked 'which teaching style do you think you have the best result, 29.4% of women who taught PE selected command skill, 43.8 % of the male PE teachers selected practice skill. This implies that the teachers' gender determine the type of pedagogical skills they prefer using in teaching; as the female PE teachers prefer the use of the command skill of teaching, the male PE teachers mostly prefer the demonstration (practice) skill. Abdurrahman and Nilüfer (2012) embarked on systemic review on longitudinal and cross-sectional studies and employed hierarchical multiple regression whilst the present study however employed descriptive cross-sectional study with convergent parallel mixed skill research approach collecting both quantitative and qualitative data. The present study also sought to establish the relationship between the teachers' gender and their pedagogical skill preferences and competences in PE.

Teachers teach to envisage students' learning and a change in students' behaviour. A study done by Slater, Davies and Burges (2012) maintain that teacher demographic characteristics including age, gender, years of experience and academic qualification does not appear to predict teacher effectiveness to influence students' behaviour and achievements. Nantwi (2016) is consistent with Slater et al and maintains that teacher's academic qualification and teaching experience are not statistically weighty on their choices of pedagogical skill and how competently they execute their lessons to influence students' performance. Meanwhile, Bahago (2011); Chval (2015); Darling-Hammond (2015); Bronikowski (2015) opine that teachers' age, gender, educational qualification, and institution they attended and number of years of experience give them many skills and in-depth knowledge about teaching, which attributes much success to their teaching making significant influence on students' achievement. This study was done in West African country (Ghana) unlike the reviewed studies which were done in USA and Russia.

The literature reviewed on demographic characteristics of teachers indicate that there is limited literature on PE teachers' demographic characteristics and their pedagogical skill preferences and competency as the sparsely available ones concentrated mainly on the Basic schools whereas this study focused on senior high schools. Also there were divergent views of the reviewed authors on whether demographic characteristics of teachers such as their ages, gender, teaching experiences, educational level of academic qualification, the institution one attended really influence teachers' pedagogical skill preferences and competency. The literature reviewed also shows that the influence of demographic characteristics of teachers on their pedagogical skill preferences and competences are based on general and this study focused on physical education. This study sought to find out whether there is a relationship between demographic characteristics of physical education teachers in Kumasi metropolis senior high schools with regards to their pedagogical skills preferences and competencies.

### 3.0 Methodology

The study employed non-experimental descriptive survey design, using mixed method approach (both quantitative and qualitative approaches). The rationale for collecting both quantitative and qualitative data simultaneously was to neutralize the weaknesses of both quantitative and qualitative form of data to sustain the strengths of the two designs (Creswell, 2014). The study was conducted in the public Senior High Schools in the Kumasi metropolis, Ghana. The target population for this study was in four groups and these included; the population of public senior high schools in Kumasi metropolis of Ghana, population of third year SHS students, population of Physical Education teachers and the population of school heads of the selected schools.

According to statistics from Ghana Education Service (GES 2018/2019), there were 10 public Senior High Schools in Kumasi metropolis, the schools were categorized into grades A and B in this case the study targeted 5 senior high schools with the population of 1625 (2 grade A and 3 grade B schools on an assumption that grade A schools in Ghana are always well resourced than the grade B schools), the study targeted all the 16 physical education teachers and 5 school heads from all the sampled schools. The researcher adopted Hut lottery technique to randomly sample 5 SHSs for the study. 5 Yes and 5 No were written on pieces of papers, kept in a basket and was shuffled. School heads were then asked to pick one each, all those who picked yes were sampled for the study. The study used Yamane's sample size determination formula as cited by Israel (1992) at a 95% confidence level and  $p=0.05$ , to take care of sample error and degree of variability to obtain a sample size of 320 students. This study used questionnaires, interview guides and observation check lists to obtain primary data. The researcher used Statistical Package for Social Sciences (SPSS) for data analysis of the quantitative raw data collected from close-ended questionnaires and structured part of the interview schedule. The qualitative data was analyzed using content analysis.

### 4.0 Results and Discussion

#### *Relationship between Gender and Use of Pedagogical Skills among Gender of Teachers*

The findings on the relationship between gender and use of pedagogical skills among gender of teachers revealed that male teachers were using the command skill in teaching PE more often than their female counterparts as shown by ( $M=4.55$  and  $SD=0.688$ ) for males and ( $M=4.20$  and  $SD=1.789$ ) for the female teachers. The results imply that male teachers are performing way better than their female counterparts in using command skill in teaching; however the results are more spread among the female teachers than among the male teachers. The results showed that female teachers were using demonstration/practice skill more often than the male teachers in teaching PE as indicated by ( $M=4.00$  and  $SD=1.000$ ) for males and ( $M=4.20$  and  $SD=0.447$ ) for the female teachers. The results imply that female teachers are better in using demonstration/practice skill when teaching PE than their male counterparts. The results showed that the skills were more varied among the male teachers than the female ones.

Further, the results showed that female teachers were better than male teachers in using the reciprocal skill in teaching PE as indicated by ( $M=3.09$  and  $SD=0.831$ ) for males and ( $M=4.20$  and  $SD=0.837$ ) for the female teachers. The results imply that more female teachers than male teachers are able to use reciprocal skill in teaching PE. The results also showed that more male were skilled in using the self-check skill in teaching PE than female teachers as indicated by ( $M=$

3.64 and SD= 0.924) for males and (M= 3.40 and SD= 0.894) for the female teachers. The results showed that in SHSs in Kumasi Metropolis area, more male teachers were able to use self-check skill when teaching PE than their female counterparts.

The results further revealed that male teachers were using the inclusion skill in teaching PE more often than female teachers (M= 3.82 and SD= 0.982) for males and (M= 3.60 and SD= 1.140) for the female teachers. The results showed that at any given time, more male teachers were be able to use inclusion skill in teaching PE than female teachers. Further, the results showed that more males were using the guided discovery skill in teaching PE. in a week than the female teachers as indicated by (M= 2.91 and SD= 1.578) for males and (M= 2.40 and SD= 1.342) for the female teachers. Indicating that male teachers use the guided discovery skill in teaching PE more often than female teachers in SHSs in Kumasi Metropolis area of Ghana.

The results further showed that female teachers were using the divergent skill in teaching PE more often than their male counterparts as indicated by (M= 2.18 and SD= 1.401) for males and (M= 2.40 and SD= 0.894) for the female teachers. The results mean that female teachers are more skilled in using divergent skill in teaching PE than male teachers and so they use the skill more often than male teachers. Finally, the results showed that male teachers were found to use the learners design skill more often than their female counterparts as indicated by (M= 3.09 and SD= 1.300) for males and (M= 2.00 and SD= 0.707). The results imply that when it comes to using divergent skill in teaching PE, male teachers perform better than the female counterparts. In general, the results showed that the gender of the teacher influences the use of various pedagogical skills among teachers in Kumasi Metropolis, Ghana.

### ***Hypothesis***

A null hypothesis was tested that the distribution of the use of command skill is not the same across categories of teachers 'gender. The results showed that the chi-square statistic value was 0.120 and p-value=0.729>0.05, the hypothesis was hence accepted and the conclusion made that the distribution of the use of command skill is not the same across categories of teachers' gender. Null hypothesis was in addition tested that the distribution of the use of demonstration/practical skill is not the same across categories of teachers' gender. The results revealed that the chi-square statistic value was 0.034 and a p-value=0.853>0.05 and therefore the null hypothesis was therefore not rejected. The conclusion was made that the distribution of the use of demonstration/practical skill is not the same across categories of teachers' gender. The study further tested the null hypothesis that the distribution of the use of reciprocal skill is not the same across categories of teachers' gender. Based on the results, the chi-square statistic value was 4.311 and the p-value=0.038<0.05. The null hypothesis was hence rejected and the conclusion made that the distribution of the use of reciprocal skill is the same across categories of teachers' gender.

The null hypothesis that the distribution of the use of self-check skill is not the same across categories of teachers' gender was tested and the results show that the chi-square value was 0.130 and p-value=0.718. The null hypothesis was hence accepted and the conclusion was that the distribution of the use of self-check skill is not the same across categories of teachers' gender. Further, null hypothesis was tested that the distribution of the use of inclusion skill is not the same across categories of teachers' gender. The results revealed a chi-square value of 0.194 and a p-value =0.660 which was greater than 0.05. The null hypothesis was therefore accepted and the conclusion was that the distribution of the use of inclusion skill is not the same across categories

of teachers' gender. Another hypothesis tested was that the distribution of the use of guided discovery skill is not the same across categories of teachers' gender and the results show that the chi-square statistic value was 0.488 and  $p\text{-value}=0.485>0.05$ . The null hypothesis was accepted thereof and the conclusion was that the distribution of the use of guided discovery skill is not the same across categories of teachers' gender. In a similar manner, null hypothesis was tested that the distribution of the use of divergent skill is not the same across categories of teachers' gender. The results reveal a chi-square statistic value of 0.351 and  $p\text{-value}=0.553>0.05$  and therefore the null hypothesis was not rejected. The conclusion was hence made that the distribution of the use of divergent skill is not the same across categories of teachers' gender.

Finally, the null hypothesis was tested that the distribution of the use of learners design skill is not the same across categories of teachers' Gender. The results revealed a chi-square statistic value of 2.707 and  $p\text{-value}=1.00>0.05$  and therefore the null hypothesis was not rejected. The conclusion was hence made that the distribution of the use of learners design skill is not the same across categories of teachers' Gender. The results presented here implies that the gender of the teacher influences the use of a particular pedagogical skills this can be confirmed by the fact that the use of five pedagogical skills were different from teacher to teacher on the basis of their genders. The general conclusion in this case is that the teachers' use of pedagogical skills is influenced by the teachers' gender. Female teachers were found to be well acquainted with some teaching skills than their male counterparts and vice versa.

#### ***Relationship between Age and Use of Pedagogical Skills among PE Teachers***

The findings revealed that teachers between 41-45 years and 46+ years were using command skill in teaching PE on a daily basis as indicated by a mean of 5 as compared to those below these ages. The results show that teachers between 20-25 and 26-30 years were using command skill several times a week but not on a daily basis. The results imply that the older the teacher, the more they use the command skill in teaching PE and so there is a positive relationship between the teachers' age and use of command skills.

The results also showed that teachers between the ages of 26 and 30 years were using the demonstration/practice skill more often (on daily basis) followed by teachers between the ages of 20-25 years than the teachers in the other age groups. The results also showed that teachers above 46 years used the demonstration/practice skill the least number of times in teaching P.E. This shows that the younger teachers are more skilled in using the demonstration/practice skill in teaching PE than more senior teachers. This could be attributed to the fact that younger teachers went through modern system in their training of ways of teaching P.E as compared to older teachers who were subjected to outdated skills which current age students may not comprehend. The results further showed that reciprocal skill was being used by teachers between the ages of 31-35 years most often than the teachers in the other age groups with teachers between the ages of 26-30 years and above 46 years being the least users of the skill in teaching.

The results further showed that the self-check skill was often used by teachers between 41-45 years and teachers more than 46 years old and given by a rating of 4.0. The skill was least used by teachers between 26-30 years and 31-35 years. This shows that more senior teachers are more skilled in using the self-check skill in teaching PE than the younger teachers. The results further indicated that the inclusion skill was often used by teachers between the ages of 20-25 years and



31-35 years with rating of 4.5. Teachers between 36-40 years were found to use the skill the least. The results imply that younger teachers were using this skill than their older counterparts.

Similarly, the results showed that the guided discovery skill was being used often by teachers between the ages of 26-30 years as indicated by a rating of 5 meaning that teachers within that age group were using the skill of guided discovery on a daily basis. The teachers between the ages of 31-35 years and 36-40 years used the skill the least. The results imply that younger teachers were more skilled in using the skill than their older counterparts. Finally, the results showed that teachers between the ages of 26-30 years used the learners design skill most often than the teachers in the other age groups. This shows that the younger teachers were well conversant with these pedagogical skills in teaching PE than their older counterparts. In general, the results imply that the age of the teacher influences their preferences and competences and use of particular pedagogical skills.

### ***Hypothesis***

The study tested a null hypothesis that the distribution of the use of command skill is not the same across categories of teachers' age. Based on the results, the chi-square value was 4.74 and the p-value was  $0.447 > 0.005$ , therefore the null hypothesis was not rejected and conclusion made that the distribution of the use of command skill is not the same across categories of teachers' age. Based on the results, the second null hypothesis was that the distribution of the use of demonstration/practical skill is not the same across categories of teachers' age. Since the p-value was  $0.646 > 0.05$ , the null hypothesis was not rejected and conclusion was that the distribution of the use of demonstration/practical skill is not the same across categories of teachers' age.

Further based on the results, the third null hypothesis was that the distribution of the use of reciprocal skill is not the same across categories of teachers' age. Since the p-value was  $0.671 > 0.05$ , the null hypothesis was therefore not rejected and the conclusion was that the distribution of the use of reciprocal skill is not the same across categories of teachers' age. In addition the results show that the fourth null hypothesis that the distribution of the use of self-check skill is not the same across categories of teachers' age was not rejected since the p-value was  $0.794 > 0.05$ . The conclusion was therefore that the distribution of the use of self-check skill is not the same across categories of teachers' age.

The fifth null hypothesis was that the distribution of the use of inclusion skill is not the same across categories of teachers' age. Since the p-value was  $0.332 > 0.05$ , the null hypothesis was accepted and the conclusion was that the distribution of the use of inclusion skill is not the same across categories of teachers' age. Further, the sixth null hypothesis was that the distribution of the use of guided discovery skill is not the same across categories of teachers' age. The p-value was found to be  $0.496 > 0.05$  and therefore the null hypothesis was accepted. The conclusion was that, the distribution of the use of guided discovery skill is not the same across categories of teachers' age. Finally, the null hypothesis was that the distribution of the use of learners design skill is not the same across categories of gender of teachers' age. Since the p-value was  $0.451 > 0.05$ , the null hypothesis was therefore accepted and the conclusion was that the distribution of the use of learners design skill is not the same across categories of gender of teachers' age.

### ***Relationship between Teachers' Experience and Pedagogical Skills***

Regarding the Relationship between teachers' experience and pedagogical skills, the findings revealed that teachers who had taught for between 11-15 years and those who had taught for 16+ years were found to use the command skill more often than those who had less experience in teaching. This imply that the more experienced teachers in teaching are more likely to use the command skill in teaching PE than those with less experience in teaching profession. The results also show that teachers with between 1-5 years teaching experience were using the demonstration/practice skill often than the others as indicated by rating of 4.6 meaning they were using the skill most of the time in a week when teaching PE. Teachers with between 6-10 years of teaching experience were found to use the same skill less often.

The results further showed that teachers with between 1-5 years of teaching experience were using the reciprocal skill in teaching PE often than the other teachers with different experience. The results again showed that teachers with teaching experience of between 6-10 years used the skill less often. The results also showed that teachers with more than 16 years teaching experience used the self-check skill often than the other teachers and the teachers with between 1-5 years and 6-10 years of experience were found to be the ones using the pedagogical skills less often.

In addition, the results showed that the inclusion skill was being used more often by teachers with more than 16 years teaching experience. The results in addition show that the guided discovery skill was often used by teachers who had taught for more than 16 years, while those with between 11-15 years of experience used the skill less often in their teaching activities. Finally, the results showed that the learners design skill was often used by teachers with more than 16 years of teaching experience. In general the results show that the teachers' teaching experience has influence on their use of pedagogical skills in SHSs in Kumasi Metropolis, Ghana.

### ***Hypothesis***

A null hypothesis was that the distribution of the use of command skill is not the same across categories of teachers' years of teaching. The results showed that the chi-square value was 8.39 and the p-value=0.039<0.05. The null hypothesis was therefore rejected and alternative hypothesis adopted that the distribution of the use of command skill is the same across categories of teachers' years of teaching. The null hypothesis was that the distribution of the use of demonstration/practical skill is not the same across categories of teachers' years of teaching. The results show that the chi-square value was 3.42 and the p-value=0.331>0.05. The null hypothesis was hence accepted and the conclusion was that the distribution of the use of demonstration/practical skill is not the same across categories of teachers' years of teaching. The third null hypothesis was that the distribution of the use of reciprocal skill is not the same across categories of teachers' years of teaching. The results show that the chi-square was 1.51 and the p-value =0.680>0.05; the null hypothesis was therefore accepted and the conclusion was that the distribution of the use of reciprocal skill is not the same across categories of teachers' years of teaching.

The fourth null hypothesis tested was that the distribution of the use of self-check skill is not the same across categories of teachers' years of teaching. Based on the results, the chi-square is 4.76 and the p-value=0.190. The null hypothesis was hence accepted and the conclusion made was that the distribution of the use of self-check skill is not the same across categories of teachers' years of teaching. In addition, the null hypothesis that the distribution of the use of inclusion skill is not the

same across categories of teachers' years of teaching was tested and the results show that the chi-square value was found to be 7.76 and  $p\text{-value}=0.049<0.05$ . The null hypothesis was therefore rejected and the alternative hypothesis adopted that the distribution of the use of inclusion skill is the same across categories of teachers' years of teaching. The study further tested the null hypothesis that the distribution of the use of guided discovery skill is not the same across categories of teachers' years of teaching using chi-square test and the results obtained indicate that the chi-square value was 3.28 and  $p\text{-value}=0.349>0.05$ . The null hypothesis was therefore accepted and the conclusion was that the distribution of the use of guided discovery skill is not the same across categories of teachers' years of teaching.

The other null hypothesis tested was that the distribution of the use of divergent skill is not the same across categories of gender of teachers' years of teaching. The test revealed that the chi-square value was 4.17 and  $p\text{-value}=0.243>0.05$ . The null hypothesis was hence accepted and the conclusion made that the distribution of the use of divergent skill is not the same across categories of teachers' years of teaching. Finally, null hypothesis was tested that the distribution of the use of learners design skill is not the same across categories of teachers' years of teaching the results show that the chi-square was 1.13 and  $p\text{-value}$  of  $0.726>0.05$ . The null hypothesis was therefore accepted and the conclusion was that the distribution of the use of learners design skill is not the same across categories of gender of teachers' years of teaching. The hypotheses test results show that the teachers' years of teaching have influence on the use of pedagogical skills in teaching and learning PE in SHSs in Kumasi Metropolis in Ghana. This implies that there are some pedagogical skills that can only be applied by teachers who have been in the teaching profession for a longer time and have the experience, while others can be applied by those who are new in the profession because they possess the latest skills. The conclusion here therefore is that the use of various pedagogical skills by teachers in Kumasi metropolis, Ghana varies depending on the teachers' teaching experience.

### ***Relationship between Qualification and Pedagogical Skill Competencies***

The findings on the relationship between qualification and pedagogical skill competencies showed that teachers with master's degrees used the command skill more often than those with Bed. Degrees and BSc degrees as indicated by rating of 4.67 showing that they were using the skill more often compared to their counterparts. This implies that teachers who were master's degree holders had more skills in using command skill in teaching PE compared to their counterparts who were holders of bachelor's degree. The results also showed that teachers who were holders of bachelor of education degree were using the command skill more often than those who were holders of Bachelor of Science degree. This is because the concepts are learnt more during teaching practice which BSc graduates do not go through in their training.

The results further showed that the demonstration/practice skill was used often by Bachelor of Science degree holders as indicated by rating of 5.00 meaning that teachers with this qualification were using the demonstration/practice skill on a daily basis. In addition, master's degree holders were found to be using the demonstration/practice skill several times a week as indicated by rating of 4.00. The results imply that those with master's degree had advanced knowledge in using the skill in teaching PE. The results also showed that teachers who were holders of bachelor of education degree were using the reciprocal skill more often compared to those with master's degree qualification and BSc degree qualifications. This implies that teachers holding bachelor of

education degree had the necessary skills to use the skill compared to their counterparts who were holders of BSc and master's degrees.

Further, the results showed that the self-check skill was being used often by teachers with master's degree qualification than their undergraduate counterparts as indicated by a rating of 3.83. The results imply that those with master's degree in the field of teaching PE are more knowledgeable in using the skill in teaching PE than those with bachelor's degree qualifications. This is because at master's level the teachers undergo in-depth training/analysis in teaching PE as compared to bachelor's level where the training is not as thorough. In addition, the results showed that Bachelor of Science degree holders were found to be using the inclusion skill more often compared to the other teachers as indicted by rating of 4.50 meaning that they were using the inclusion skill on a daily basis in teaching PE. Teachers who were BSc degree holders were using the guided discovery skill more often in teaching PE than their counterparts with other qualifications as indicated by rating of 4.50 implying that BSc degree holders in SHSs in Kumasi Metropolis uses the guided discovery skill is teaching PE than those teachers with other qualifications because they are more skilled in using the skill. The use of divergent skill was found to be low among the teachers with all the qualifications with the highest being 2.50 by BSc degree holders showing that they were using it once every week. Finally, the results show that BSc degree holder teachers were using the learners design skill more often as compared to teachers with other qualifications s indicated by rating of 4.00 showing that this group of teachers in SHSs uses the skill several times in one week.

### ***Hypothesis***

A null hypothesis was tested that the distribution of the use of command skill is not the same across categories of teachers' qualification. The results showed that the chi-square value was 13.101 and  $p\text{-value}=0.043<0.05$ , the null hypothesis was therefore rejected and the alternative hypothesis adopted that that the distribution of the use of command skill is the same across categories of teachers' qualification. The second null hypothesis tested was that the distribution of the use of demonstration/practical skill is not the same across categories of teachers' qualification. The results indicate that the chi-square statistic value was 10.600 and  $p\text{-value}=1.102>0.05$ . The null hypothesis was hence accepted and the conclusion was that the distribution of the use of demonstration/practical skill is not the same across categories of teachers' qualification. In addition, the study tested the null hypothesis that the distribution of the use of self-check skill is not the same across categories of teachers' qualification. The results showed that the chi-square statistic value of 2.810 and  $p\text{-value}=0.832>0.05$  the null hypothesis was therefore accepted and the conclusion made that the distribution of the use of self-check skill is not the same across categories of teachers' qualification.

The study tested the null hypothesis that the distribution of the use of inclusion skill is not the same across categories of teachers' qualification and as per the findings, the chi-square statistics value was found to be 5.185 and the  $p\text{-value}=0.520>0.05$  and the null hypothesis was not rejected. The conclusion was that the distribution of the use of inclusion skill is not the same across categories of teachers' qualification. Similarly, the null hypothesis was tested that the distribution of the use of guided discovery skill is not the same across categories of teachers' qualification. The results showed that the chi-square statistic value was 9.822 and the  $p\text{-value}=0.278>0.05$ , the null hypothesis was therefore not rejected and the conclusion was that the distribution of the use of guided discovery skill is not the same across categories of teachers' qualification.



Finally, the null hypothesis was tested that the distribution of the use of learners design skill is not the same across categories of teachers' qualification and the results were that the chi-square statistic value was 5.944 and the p-value =0.653>0.05. The null hypothesis was hence accepted and the conclusion was that the distribution of the use of learners design skill is not the same across categories of teachers' qualification. The hypothesis test results showed that a teacher's qualification influences the teacher's use of pedagogical skills in teaching PE. These results implies that in Kumasi, Ghana, the qualification of a teacher always have effect on their use of Pedagogical skills and this in turn influences the students' performance in PE. More qualified teachers are likely to have no difficulty in using the pedagogical skills in teaching PE compared to their counterparts who are less qualified.

### ***Experience and Pedagogical Skill Competencies***

The findings on PE teachers experience and pedagogical skill competencies showed that the command skill was being used often by teachers with 11-15 years and 16-20 years of experience in teaching PE as indicated by rating of (5.00) showing that these teachers were using the skill on a daily basis in teaching PE. The results imply that those teachers who had been teaching PE for the longest time are more skilled in using the command skill in teaching PE than those who are new in teaching PE. The results also showed that teachers with 0-5 years were using the demonstration/practice skill in teaching PE often as indicated by rating of (4.33) followed by teachers with 6-10 years' experience in teaching PE with rating of (4.13). This shows that these teachers were using the skill several times in a week. The results in addition showed that the reciprocal skill was being used by teachers with 0-5 years of experience as indicated by the rating of (4.00) showing that they were using the skill several times a week. This means that PE teachers in SHSs in Kumasi Metropolis area who have few years of teaching PE are more skilled in using the reciprocal skill in teaching PE as compared to their counterparts who had been teaching PE for a longer time.

According to the results, teachers with 11-15 years and 16-20 years of teaching experience were found to be using the self-check in teaching PE compared to their counterparts who had not taught PE for long as indicated by rating of 4.00 showing that they were using it several times in a week when teaching PE. The results imply that the teachers who have taught PE for a longer period of time are more skilled in using the self-check skill and they are more likely to use the skill in teaching PE than other teachers in SHSs in Kumasi Metropolis area. Similarly, the study results showed that the inclusion was being used often by teachers with 0-5 years teaching experience who were found to be using the skill on a daily basis as indicated by a rating of 4.67. Teachers with 6-10 years of teaching experience were fund to be using the skill less often as indicated by rating of 3.25. This means that teachers with 0-5 years in teaching PE have more knowledgeable in using the skill in teaching PE than those with many years of teaching PE. The guided discovery skill was found to be commonly used by teachers with 11-15 years' experience in teaching PE as indicated by rating of 3.25 followed by teachers with between 16-20 years of experience in teaching PE. Finally, the results showed that the learners design skill was mostly being used by teachers with 6-10 years of teaching experience in PE as indicated by rating of 2.88 showing that they were using the skill once a week.

### ***Hypothesis***

Null hypothesis that the distribution of the use of command skill is not the same across categories of teachers' experience was tested. The results revealed that the chi-square statistic value was 4.424 and  $p\text{-value}=0.109>0.05$ , the null hypothesis was hence accepted and the conclusion was that the distribution of the use of command skill is not the same across categories of teachers' experience. In addition, the results for the test of the null hypothesis that the distribution of the use of demonstration/practical skill is not the same across categories of teachers' experience revealed a chi-square value of 1.440 and  $p\text{-value}=0.487>0.05$ . The null hypothesis was thus accepted and the conclusion was that the distribution of the use of demonstration/practical skill is not the same across categories of teachers' experience.

Null hypothesis was further tested that the distribution of the use of reciprocal skill is not the same across categories of teachers' experience the results revealed that the chi-square value was 1.003 and a  $p\text{-value}=0.606>0.05$ . The null hypothesis was hence accepted and conclusion made that the distribution of the use of reciprocal skill is not the same across categories of teachers' experience. Further, the null hypothesis that the distribution of the use of self-check skill is not the same across categories of teachers' experience was tested using chi-square test and the results were that the chi-square statistic value was 1.930 and the  $p\text{-value}=0.381>0.05$ . The study therefore accepted the null hypothesis and the conclusion was made that the distribution of the use of self-check skill is not the same across categories of teachers' experience.

Another null hypothesis was tested that the distribution of the use of inclusion skill is not the same across categories of teachers' experience. The results showed that the chi-square was 5.047 and  $p\text{-value}=0.080>0.05$ . The null hypothesis was therefore accepted and the conclusion was that the distribution of the use of inclusion skill is not the same across categories of teachers' experience. In addition, the null hypothesis was tested that the distribution of the use of guided discovery skill is not the same across categories of teachers' experience. The results from test showed that the chi-square statistic was 0.603 and a  $p\text{-value}=0.740>0.05$ . The null hypothesis was therefore accepted and the conclusion made that the distribution of the use of guided discovery skill is not the same across categories of teachers' experience. Similarly, the study tested the null hypothesis that the distribution of the use of divergent skill is not the same across categories of gender of teachers' experience. The test results revealed a chi-square statistic value of 1.896 and  $p\text{-value}=0.458>0.05$ . The null hypothesis was hence accepted and the conclusion was that the distribution of the use of divergent skill is not the same across categories of teachers' experience.

Finally, the null hypothesis was tested that the distribution of the use of learners design skill is not the same across categories of teachers' experience. The results had a chi-square value of 0.53 and  $p\text{-value}=0.911>0.05$  and hence the null hypothesis was accepted. The conclusion was made that the distribution of the use of learners design skill is not the same across categories of teachers' experience in teaching PE. The hypotheses test results showed that the teachers' experience in teaching PE actually influences their use of pedagogical skills in teaching PE. This implies that in Kumasi area of Ghana, more experienced teachers in teaching PE are able to use the pedagogical skills in teaching PE than those teachers who have not taught PE for long and are inexperienced. The conclusion therefore is that, the more experienced a teacher is in teaching PE, the more easy they find the application of the use of pedagogical skills in teaching and vice versa.

### *Descriptive Statistics on In-service Course/workshop and Pedagogical Skills*

Analysis results on the relationship between in-service training attended and pedagogical skills revealed that the command skill was being used often by teachers who were being taken through in-service training after every three years and every four years as indicated by rating of 5.00. This implies that teachers who attend in-service training after every three years and every four years are more skilled in using the command skill than other teachers. The results also showed that teachers who were being taken through in-service training after every one year and after two years were using the demonstration/practice skill more often than the other teachers. This skill was found to be used less often by teachers who were being in-serviced after every four years. Showing that, the more a teacher stays without an in-service training, the more they are likely to forget the application of the demonstration/practice skill in teaching PE. The results further showed that teachers who were being in-serviced after every one year were using the reciprocal skill more often compared to other teachers who were being in-serviced after different periods more than one year. This means that to be able to apply the reciprocal skill more effectively and be able to use in teaching PE on a regular basis, a teacher needs to attend in-service training at least after every one year. The results in addition showed that the self-check skill/teaching skill was often used by teachers who were taken through in-service training after every two years followed by those who never attended any in-service training. This implies that the self-check skill/teaching skill can be used by a teacher in teaching PE regardless of whether they are in-serviced or not.

The results further showed that the teachers who were taken through in-service training after every one and two years were using the inclusion skill/teaching skill more often compared to the other teachers who were being in-serviced at different intervals. This implies that teachers need to be taken through in-service training regularly so as to be able to apply the inclusion skill in teaching and learning PE. The guided discovery skill was found to be used more often by teachers who were attending in-service training after every two years as indicated by rating of 4.00 and those found to be using the skill less often were teachers who were being in-serviced after every four years as indicated by rating of 1.00. Similarly, those teachers who were being taken through in-service training after every two years were found to be adopting the divergent skill in teaching PE more often than other teachers. This means that for a PE teacher to be able to use the divergent skill/teaching skill more effectively, they should undertake in-service training after every two years. Finally, the results show that teachers who were being in-serviced after every one year and three years were more likely to use the learners design skill in teaching PE than their counterparts who were being in-serviced at different intervals. This means that for teachers to be able to apply the learners design skill in teaching PE, they should undergo in-service training after every one to three years to refresh themselves.

### *Hypothesis*

The study tested a null hypothesis that the distribution of the use of command skill is not the same across categories of in-service training received. The results revealed a chi-square statistic value of 8.30 and  $p\text{-value}=0.081 > 0.05$ , the null hypothesis was hence accepted and the conclusion made that the distribution of the use of command skill is not the same across categories of in-service training received. Null hypothesis was in addition tested that the distribution of the use of demonstration/practical skill is not the same across categories of in-service training received. The results revealed that the chi-square statistic value was 6.30 and a  $p\text{-value}=0.177 > 0.05$  and therefore the null hypothesis was therefore not rejected. The conclusion was made that the distribution of

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the use of demonstration/practical skill is not the same across categories of in-service training received. The study further tested the null hypothesis that the distribution of the use of reciprocal skill is not the same across categories of in-service training received. Based on the results, the chi-square statistic value was 3.80 and the  $p\text{-value}=0.433>0.05$ . The null hypothesis was hence not rejected and the conclusion was made that the distribution of the use of reciprocal skill is not the same across categories of in-service training received.

The null hypothesis that the distribution of the use of self-check skill is not the same across categories of in-service training received was tested and the results show that the chi-square value was 5.68 and  $p\text{-value}=0.224$ . The null hypothesis was hence accepted and the conclusion was that the distribution of the use of self-check skill is not the same across categories of in-service training received. Further, null hypothesis was tested that the distribution of the use of inclusion skill is not the same across categories of in-service training received. The results revealed a chi-square value of 5.49 and a  $p\text{-value}=0.240$  which was greater than 0.05. The null hypothesis was therefore accepted and the conclusion was that the distribution of the use of inclusion skill is not the same across categories of in-service training received.

Another null hypothesis tested was that the distribution of the use of guided discovery skill is not the same across categories of in-service training received and the results show that the chi-square statistic value was 0.232 and  $p\text{-value}=0.676>0.05$ . The null hypothesis was accepted thereof and the conclusion was that the distribution of the use of guided discovery skill is not the same across categories of in-service training received. In a similar manner, null hypothesis was tested that the distribution of the use of divergent skill is not the same across categories of gender of in-service training received. The results revealed a chi-square statistic value of 1.09 and  $p\text{-value}=0.896>0.05$  and therefore the null hypothesis was not rejected. The conclusion was hence made that the distribution of the use of divergent skill is not the same across categories of in-service training received.

Finally, a null hypothesis was tested that the distribution of the use of learners design skill is not the same across categories of in-service training received. Based on the results in Table 4.36, the chi-square statistic value was found to be 1.09 and a  $p\text{-value}=0.896>0.05$ . The null hypothesis was hence accepted since the  $p\text{-value}$  was greater than 0.05 and the conclusion was made that the distribution of the use of learners design skill is not the same across categories of in-service training received. In general these results showed that teachers' in-service training have influence on the usage of pedagogical skills by teachers in SHSs in Ghana. The results implies that in Ghana, the teachers who undergo in-service training apply the use of pedagogical skills more often in teaching than those who do not undergo in-service training at all. The conclusion therefore is that, the use of pedagogical skills in teaching PE in SHSs Kumasi metropolis varies from teacher to teacher based on the status of their in-service training/workshops training received.

### **Implications**

The study explored the pedagogical practices/skills that senior high school PE teachers in Kumasi metropolis used in teaching and the amount of time given to students to perform physical activity in practical physical education lessons. Although concerns abound regarding PE teachers pedagogical skills, teachers had positive dispositions towards it and strategized its practice. Capitalization of government and educational authorities (Ministry of Education and Ghana



Education Service) on positive dispositions of teachers through individual and instructional support can improve the PE teachers' pedagogical practices in physical education setting.

However, the failure of authorities to resolve the concerns of teachers in teaching PE may culminate in a degeneration of the positive disposition of these teachers. Pre-service and in-service training/workshop for teachers is integral to enhancing teachers' effectiveness in service delivery to these children. Because PE teachers are fundamental in the teaching of senior high school PE. Senior high schools in Kumasi metro need to provide teachers with requisite teaching and learning resources, ample time for the teaching of PE in the senior high schools' time table, employ enough personnel to augment the scanty ones and also provide the teachers with comprehensive pre-service and in-service training/workshop to ensure their professional competence to meet the diverse needs of the Ghanaian children.

## **5.0 Conclusion**

The purpose of this study was to establish the relationship between PE teachers' demographic characteristics and their pedagogical skill preferences and competences during PE instruction. Based on the findings the study concludes that the demographic characteristic of PE teachers in SHSs in Ghana plays key role on the pedagogical skills competencies of teachers during PE instruction. The study concludes characteristics such as gender, age, work experience; number of years in teaching PE, qualification and the institution attended all influences the pedagogical skill competencies of PE teachers during PE lessons. Finally based on the hypothesis results, the study concludes that the distribution of the use of various teaching skills by teachers in SHSs in Ghana is not the same across categories of teachers' demographic characteristics.

## **6.0 Recommendation**

The study makes the following recommendations based on the results of the study. To improve teachers' pedagogical skills in teaching PE, in-service programmes/workshops are required for PE teachers. This should be facilitated through the ministry of education, schools and teachers themselves. In addition, the study suggests that there is the need for constant supervision of teaching by school heads to ensure effective teaching of PE in order to harness the practical performance of students. To improve teachers' utilization and improvisation of equipment needed for PE lessons, the study recommends that school heads should monitor and ensure teachers use variety of teaching aids in teaching since some of the schools were found having the equipment in place. Schools also need to invest in new educational media resources to match with other schools that use technology in teaching PE. Teachers need to give more practice time to students.

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