

INFLUENCE OF PHYSICAL ACTIVITY ON ACADEMIC PERFORMANCE OF PHYSICAL AND HEALTH EDUCATION STUDENTS IN SECONDARY SCHOOLS IN UDI L.G.A, ENUGU STATE, NIGERIA

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Abstract

This study aimed to identify influence of physical activity on academic performance of physical and health education students in secondary schools in Udi L.G.A, Enugu State. The research was guided by two research questions and two corresponding research questions. The research design adopted for this study was a survey design. The study was carried in Udi Local Government Area of Enugu State. The population for the study consist of all the Secondary schools in Udi Local Government Area. The population for the study was 13,462 teachers and students in the 25 Secondary schools in Udi local government area. The simple random sampling procedure was adopted for the study to sample 240 respondents within the secondary schools in Udi Local Government Area. Using simple random samplly techniques, 240 (40 teachers and 180 students) Secondary School teachers and students were selected from the selected five schools for the sampling, 8 teachers and 36 students each were selected from each of the selected school. It is obtained by random sampling techniques the method is balloting without replacement. The instruments for data collection was structured questionnaire developed by the researchers. The instrument used was validated by three experts two of them is from the school of Human Kinetics Education and one expert in the department of Mathematics and Computer Science Education (measurement and evaluation), all in Enugu State University of Science and Technology, Enugu. The data collected from the questionnaire was collated and analyzed using Crombach Alpha. Crombach Alpha was used to measure the internal consistency coefficient of the questionnaire. The rationale for the use of Crombach Alpha was informed by the fact that the items had no right or wrong answers as they will not be scored dichotomously. Again, it was considered appropriate as it ensured the homogeneity of items of the questionnaire. The correlation co-efficient obtained using the Cronbach method of estimating reliability was 0.75 this indicates that the instrument has a high level of reliability. The questionnaires were administered personally to (20) teachers and students by the researcher to the respondent in order to retrieve a maximum number of the questionnaire issued out. At the end the research, the researcher collected back the 20 questionnaires issued out to the respondents from their different schools. Mean statistic was used for data analysis, In order to determine the degree of respondent's agreement/ disagreement on each of the scaling statement in the questionnaire, nominal values were assigned to different scaling statement. The decision rule was that any of the responses therefore that have mean score of 2.5 and above were regarded as agree while any value below 2.5 was regarded as disagree. Findings of the study showed that physical activities have positive influence on cognitive and effective domain of physical and health education

students in Udi Local Government Area. From findings of the study, it was recommended among others that teachers should develop the capacity to draw on diverse models of teaching to provide positive and active learning opportunities for students that cater for all learning styles and develop the cognitive, affective and the psychomotor domains.

Keywords: Physical Activity, Academic Performance, Physical and Health Education, Students, Secondary Schools.

Introduction

Physical activity is a source that holistically supports the physical, social, and emotional dimensions of a child's health. It does not replace physical education (PE) curriculum, which focuses on the more conceptual aspects of physical education and provides a foundation for living a physically active life. In contrast, physical activities can be spontaneous, unstructured play experiences, which can be meaningful and fulfilling (Wuest & Bucher, 2016). This may include outside play, active play, or other fundamental sports and movements. All children benefit from both physical activities and physical education. Both school and family work together to provide opportunities for people of all ages to grow physically and have a healthy fitness level. Wuest and Bucher (2016) also stressed that Physical activities is vast and the problems included that they are weak indeed. Singh (2018) opined that the problems that generally stare in the face of effective organization of physical activities in the schools are lack of adequately qualified physical education personnel, lack of facilities for medical examination, lack 'of properly developed playground, an academically loaded curriculum, lack of time; lack of funds, lack of provision of mid-day meals and the practice of double shifts. According to the International Council for Health, Physical Education Recreation, Sports and Dance (ICHPER.SD, 2018), Physical education is an academic content area, which is composed of two major components namely human movement and Physical fitness (motor related) and is based on the following disciplines; motor learning, motor development, kinesiology, bio-mechanics, exercise physiology, sport psychology, sport sociology and athletics. Wuest and Bucher (2016) assert that it is the education process that uses Physical activities as a means to help individuals acquire skills, fitness, knowledge and attitude that contribute to their optimal development and well-being. The International Council for Health, Physical Education Recreation, Sports and Dance (ICHPER. SD, 2018) definition of Physical Education was adopted in this study.

The aim and objective of physical education is to develop human personality in its totality. This involves the development of the physical, mental, social, emotional and moral aspects so as to make the individual a good citizen. Such a person should be able to make contribution in the process of nation building in his or her own way. Oak (2018) noted that physical education helped to instill in the students the value and skills of maintaining a healthy life style through physical activities. The person will learn skills necessary to perform variety of physical activities, is usually physically fit and participates regularly in physical activities as well as its contribution to healthy life style (Singh, 2018).

In schools, physical educational resources are instructional and curriculum materials employed in physical education instructional classes or teaching learning experiences. The availability and utilization of resources are predictors to the successful implementation of any academic programme. According to Offorma (2016) teaching is usually facilitated and is more

effective through the active participation of the learners and utilization of appropriate resources. Active participation of the learner in physical education is facilitated by the availability and effective utilization of adequate instructional resources personnel, facilities, equipment and supplies. Mahuta (2019), defined teaching as the interaction between students and the teachers on a particular subject matter. He added that in this type of interaction, there may be one or many students that differ in many respects, such as young and old, bright and below average, intelligent, physically normal, physically challenged, highly motivated, rich or poor as well as male or female. Ogionwo (2016), perceived teaching as the means in which the society deliberately socializes the younger generation to fit into adult life by teaching them the norms and values of their respective communities.

Travers (2017) defined Physical education as one of the school subjects several experts view as an essential key to a healthy lifestyle and as an instrument to face the problem of overweight and obesity in modern societies. Therefore, it is possible to conclude that the aim of physical education is to ensure an improvement and/or maintenance of physical well-being, as well as to develop physical aptitudes that will allow for movements to be performed in a safe and efficient way (Mukherjee, 2018). Nevertheless, it is often difficult to evaluate the real contribution of physical education to the level of students' physical aptitude, as schools and parents are more focused on cognitive aspects of learning, which underestimates the relevance of physical development. Mgbor (2016) indicated that physical aptitudes are part of student assets and physical education, with the aim of influencing these, should receive more attention. Mgbor (2016) opined that regular physical activity may also contribute to benefits before a stressful academic setting like testing, with increases in cognitive functions useful to students taking a high-stakes examination. Effort put forth within physical education can yield improvements in academic progress, behavior in the classroom, and development of positive attitudes toward school. Providing daily physical education that stimulates the mind and challenges students is essential in the physical and emotional well-being of students. Implementing physical fitness in addition to various cognitive stimulating activities emphasizes the multidisciplinary connection and value of physical education established with other major content areas that reinforce regular physical education (Longe, Uwadia & Longe, 2016). Upon all this, the human resources are the personnel involved in teaching of physical education in the schools. Mgbor (2016) indicated that poor staffing in terms of number of physical education teachers, their level of preparation and motivation constitute major constraint to effective learning.

In other words, for the programme to be successful there is need for adequate number of teachers that are professionally trained and motivated. According to Mgbodile, Ogbonnaya, Enyi, Oboegulem and Onwura (2018) no country can move forward politically, socially and economically without adequate human and material resources. They added that abundant human resources represent potential for educational development, but education development of people is necessary to translate such potential into per capita income. Longe, Uwadia and Longe (2016) opined that it is the responsibility of our educational system to provide graduates with the background and skills necessary to be successful in their chosen fields of endeavour. Longe (2016) noted that the decline of staff quality is a consequence of obsolete and inadequate teaching and learning facilities in schools that can disintegrate the quality of graduates been produced.

If it is concluded that physical activity improves learning, the remaining question is how it does so. There are many different hypotheses, but only a fraction has been tested rigorously. Omorruan (2016) pointed out that comprehensive theory of how physical activity improves learning would need to take into account both the biological and psychological factors, and it would need to address the questions of when and where cognitive effects occur. After-school physical activity could, for example, improve student performance the next day in purely biological ways, or by fostering closer relationships among schoolmates, or both.

There should also be a way to disentangle the biological effects of the exercise program from the psychological effects: Is it general conditioning and good health that led to improved academic performance, or are there additional cognitive benefits to aerobic exercise itself? Several general hypotheses are consistent with known facts about how the body works. Abayomi (2018) observed that human brain tends to work better when it is housed in a healthy body. Research does not reveal precisely what kinds of activity lead to improved brain function (it could, for example, be true that lifting weights leads to better brain function but that not all activities do so) or precisely how activity leads to improved brain function (for example, it is not well understood whether the benefits of exercise are due to physical conditioning, the exercise itself, or the stress of the exercise). Second, it appears to be true that physical activity leads to a marked improvement in mood and self-concept. Third, it is likely that physical activity leads to cognitive, psychomotor and effective domain improvements in other ways, including changes on biochemical levels. Finally, recess, which leads to increased physical activity, is associated with higher academic achievement in real-world experiments (Arnhein & Prentice, 2018). The comprehensive secondary school-based findings reflect not only the lack of research across the secondary levels in schools, but could possibly be attributed to both secondary and specialist Secondary school teachers having dedicated physical education units as part of their training. Do to the trending opening of schools and zeal to make money, schools are been located every place these days and this discourages making use of good sites for school environment. Good sites in terms of space that will accommodate both classroom and teaching facilities for both sports and recreational activities (Adeyanju , 2018). Therefore, the present study aimed at identifying influence of physical activity on academic performance of physical and health education students in Secondary Schools in Udi Local Government Area, Enugu State.

Statement of the Problem

The prevailing problem in Secondary schools in Udi Local Government Area is that resources for teaching Physical education are declining steadily without the school administrators giving attention to it. This unfortunate development has become a source of worry and many stakeholders in the teaching of Physical education in schools in the area. The average Physical and health education teacher is faced with a lot of challenges like lack of space to practice physical activities, low turn up of students in teaching not only because of the increased number of students but also as a result of the scanty and often poorly maintained Physical and health education facilities, equipment and supplies in the schools. The downward trend in sports and Physical education instructional materials and equipment in schools have continued unabated from onset.

Observation by the researcher indicates that in schools where there are no physical education teachers or there is inadequate numbers of physical education teachers, non-physical education teachers in Physical Education or teachers that studied other subjects teach physical

education. Such arrangement may affect the utilization of the available physical education facilities, equipment and supplies in the schools. Observation by the researcher indicates that many physical education teachers in schools in Udi also find it difficult to demonstrate certain skills in different games and sports such as soccer, hockey, handball among others owing to non-availability of necessary facilities and equipment. Secondary schools require a variety of sports and physical education facilities, equipment and supplies to meet the teachers and students needs. Besides, the non-availability, inadequacy and non-utilization of facilities, equipment and supplies for teaching the subject may be a factor in the inability of the few teachers in the schools to sustain students' interest, leading to poor performance in the subject. Also very few and in most cases no student offers the subject in Senior School Certificate Examination (SSCE) in secondary schools in Enugu State. Based on the fore mentioned problems the study intends to determine influence of physical activity on academic performance of physical and health education students in secondary schools in Udi L.G.A, Enugu State.

Purpose of the Study

The main purpose of the study was to identify influence of physical activity on academic performance of physical and health education students in secondary schools in Udi L.G.A, Enugu State. Specifically, the study intends to:

1. examine influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive development.
2. examine influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain.

Research Questions

The following research Questions are been developed to guide the study:

1. What are the influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive development?
2. What are the influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain?

Hypotheses

The following hypotheses were developed at 0.05 alpha level and guided the study.

1. There is no significant relationship between the mean rating score of teachers and students on the influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive development
2. There is no significant relationship between the mean rating score of teachers and students on the influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain.

METHOD

The research design adopted for this study was a survey design. Survey design according to Iketaku (2018) it is one in which a group of people or items are studied by collecting and analyzing data from only a few items considered to be representative of the entire group. The study was carried in Udi Local Government Area of Enugu State. The choice of the area was because of its geographical location and low educational development. The population of the study consist of all the Secondary schools in Udi local government area. The population for

the study was 13,462 teachers and students in the 25 Secondary schools in Udi local government area. The simple random sampling procedure was adopted for the study to sample 240 government secondary school students in Udi Local Government by simple random sample techniques, 240 (40 teachers and 180 students) Secondary School teachers and students were selected from the selected five schools for the sampling, 8 teachers and 36 students each were selected from each of the selected school. It is obtained by random sampling techniques the method is balloting without replacement. The instruments for data collection are the questionnaire. The questionnaire is simple, clear and specific with two sections. The biographic data of the respondents and the questionnaire items. The questionnaire is a four point rating scale viz strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree (1). The instrument used was validated by three experts two of them in from the school of Human Kinetics education and one expert in the department of Mathematics and Computer Science Education (measurement and evaluation), all in Enugu State University of Science and Technology, Enugu. The data collected from the questionnaire was collated and analyzed using Crombach Alpha. Crombach Alpha was used to measure the internal consistency coefficient of the questionnaire. The rationale for the use of Crombach Alpha was informed by the fact that the items had no right or wrong answers as they will not be scored dichotomously. Again, it was considered appropriate as it ensured the homogeneity of items on the questionnaires. The correlation co-efficient obtained using the Cronbach method of estimating reliability was 0.75 this indicates that the instrument has a high level of reliability.

The questionnaires were administered personally to (20) teachers and students by the researcher to the respondent in order to retrieve a maximum number of the questionnaire issued out. At the end the research, the researcher collected back the 20 questionnaires issued out to the respondents from their different schools. Mean statistic was used for data analysis, In order to determine the degree of respondent's agreement/ disagreement on each of the scaling statement in the questionnaire, nominal values were assigned to different scaling statement. The decision rule will be that any of the responses therefore that have mean score of 2.5 and above were regarded as agree while any value below 2.5 was regarded as disagree. For the research hypotheses; the decision rule is that if the calculated t-value is greater than or equal to the table value (t-value), the null hypothesis was rejected. If on the other hand, the calculated t-value is less than the table t-value, the null hypothesis was not rejected.

RESULTS

Research Question 1:What are the influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive development?

Table 1: Mean response on influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive development.

S/ ITEMS	SA	A	D	SD	N	ΣF	X	Remark
N	4	3	2	1		X	mea n	

1	Engaging in physical activities improves my memory capacity	15	70	10	10	240	840	3.5	Agree
2	Engaging in physical related activities improves students' self esteem	10	20	80	130	240	390	1.6	Disagree
3	It reduces academic stress	13	90	10	10	240	820	3.4	Agree
4	Physical activities improve self-worth	30	50	40	120	240	470	1.9	Disagree
5	It increases students' chances of achieving wider academic task.	18	10	30	20	240	630	2.6	Agree
Grand Mean								2.60	Agree

From the computed mean in table 1: it was found that the mean of item (1, 3 and 5) Were above the cut- off point of 2.5 and therefore agreeing that influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive development. Items (1,4) was below the cut- off point and therefore not agreeing on the influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive development.

Hypothesis 1

There is no significant relationship between the mean rating score of teachers and students on the influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive development.

Table 2: t-test analysis of the mean score of teachers and students on the influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive development

	N	Mean	SD	Degree of freedom	t-cal	t-crit	Decision
Teachers	40	2.73	0.87	238	8.57	1.68	S
Students	180	2.63	0.97				Reject Ho ₂

From the table response above, mean score of teachers' response was 2.73, while SD was 0.87. The total number of teachers was 40. Students have a mean score of 2.63 and SD = 0.97. Total number of students was 180. From the analysis, t-calculated is 8.57 and t-critical is 1.68. From this result, the null hypothesis that there is no significant difference between teachers' and students on influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive developments rejected. This is because calculated value 8.57 is outside the acceptable region 1.96 for a normal distribution of a one tailed test. Thus, there is a significant difference between mean score of teachers and students on influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive development.

Research Question 2: What are the influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain?

Table 3: Mean response on influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain

S/N	ITEMS	SA	A	D	SD	N	Σ FX	X mean	Remark
6	Students who partake in physical activities use to be calm in class work	100	80	20	40	240	740	3.1	Agree
7	Physical activities improve students' attention span	120	60	30	30	240	850	3.5	Agree
8	It inculcates the spirit of discipline in students	170	40	10	10	240	830	3.5	Agree
9	Students make less noise in the class after a long work	120	70	25	25	240	765	3.2	Agree
10	Many students who partake in physical activity related jobs are time managers and character modifiers.	40	50	40	110	240	500	2.1	Disagree
Grand Mean								3.08	Agree

From the computed mean in table 3: it was found that the mean of item (1,2,3,4) Were above the cut- off point of 2.5 and therefore agreeing on influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain. While Items (5) did not agree on influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain.

Hypothesis 2

There is no significant relationship between the mean rating score of teachers and students on the influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain.

Table 4: Summary table of t-test of mean scores of teachers and students on the influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain.

Gender	N	$\bar{x}$	SD	Df	t-cal	t-cirt	Decision
Teachers	40	3.33	0.77	238	0.054	1.96	Sig
Students	180	3.32	0.71				
Total	240						

Table 4 above shows that, the calculated t-value at 0.05 level of significance and 338 degree of freedom was 0.054; while the critical t-value under the same condition was 1.96. Since, the calculated t-value is less than the table value, the null hypothesis was therefore not significant. This invariably means that, teachers and students in Udi Local Government Area did not differ significantly in their mean scores on the influence of physical activity on academic performance of physical and health education students.

Summary of Findings

From the above study, the following findings were discovered:

1. Respondents agreed that physical activities have influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive domain.
2. Findings of the study agreed that physical activities have influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain.
3. There is a significance differences between teachers and students on the influence of physical activities on students' cognitive domain
4. There is no significance difference between teachers and students on the influence of physical activities on students' effective domain.
- 5.

Discussion of Findings

The study s ought to find out the computed mean in table 1: it was found that the mean of item (1,3 and 5) Were above the cut- off point of 2.5 and therefore agreeing that physical activity have a positive influence academic performance of physical and health education students in secondary schools, it was discovered that engaging in physical activities improves students memory capacity, it reduces academic stress and increases students chances of achieving wider academic task. Items (2 and 4) was below the cut- off point and therefore not agreeing on the influence of physical activity on academic performance of physical and health education students in secondary schools based on cognitive development in Udi Local Government Area, Enugu State. This is in line with the work of Wuest and Bucher (2016) who asserted that it is the education process that uses Physical activities as a means to help individuals acquire skills, fitness, knowledge and attitude that contribute to their optimal development and well-being.

From the computed mean in table 2: it was found that the mean of item (6,7,8 and 9) Were above the cut- off point of 2.5 and therefore agreeing on influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain. The study revealed that Students who partake in physical activities use to be calm in class work, Physical activities improve students attention span, physical activities inculcate the spirit of discipline in students and reduces noise making among other in the classroom. While Items (10) did not agree on the influence of physical activity on academic performance of physical and health education students in secondary schools based on effective domain. This study is in line with the study of Ahamed, (2018) who revealed that School-based physical activities (PA) is part of the normal physical education classes (PE) and extracurricular activities are often the only stable access to PA for many children, and have shown to provide a significant impact on classroom behavior, self-esteem, self-image, and cognitive function.

Conclusion

Physical education can influence the three domains of learning (Cognitive, Psychomotor and Affective domain). Physical activities in health education improves physical activities improves memory capacity, reduces academic stress and increases students' chances of achieving wider academic task. It also facilitates positive attitude towards individual persons. Physical activities improve students' attention span; physical activities inculcate the spirit of discipline in students and reduces noise making among other in the classroom. The study also revealed that physical activities does not have influence on student's affective domain. It is obliged that physical educators should aspire involves developing creative, well-planned, engaging and responsibility-focused lessons, and the confidence and ability to do so is recognised by many teachers as a challenging barrier to their own teaching. Although there are both differences and similarities between the experiences of primary and secondary physical education teachers, an increased awareness of these barriers among teachers at both levels and among practising and pre-service teachers is of vital importance. This awareness will support the continuing development of quality physical education programs, teaching strategies and teaching skills to overcome these barriers, both now and into the future.

Recommendations

From the findings, the following recommendations were made;

- Teachers should develop the capacity to draw on diverse models of teaching to provide positive and active learning opportunities for students that cater for all learning styles and develop the cognitive, affective and the psychomotor domains.
- Teachers should also provide instructional materials invariable this should enhance teaching of physical education; effective teaching and learning process encourage parents to send their children to school.

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