CURRICULUM TRANSFORMATION USING ICT IN THE TEACHING PHYSICAL EDUCATION IN SECONDARY SCHOOLS IN ONITSHA L.G.A. OF ANAMBRA STATE

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Abstract
The study was to investigate curriculum transformation and the use of ICT in teaching physical education in secondary schools in Onitsha L .G.A of Anambra State. Descriptive survey research design was used and the population consisted of all the physical education teachers in all the 30 secondary schools in the L.G.A, hence, no sampling. Researchers made questionnaire were used for data collection and research questions were answered using mean scores. 2.50 was set as the criterion mean in the study. The results revealed the following: Use of ICT in teaching P.E improve students' skills and techniques; Assist students in the review and evaluation of their performance; Develop student's knowledge and understanding of the subject; and Develop student's understanding of the human body and health. Based on the results, the researchers recommended that Ministry of Education should map out ways to ensure that teachers integrate ICT in teaching of physical education.

Keywords: Curriculum, Transformation, Physical Education, Information and Communication Technology

Introduction

Globally, curriculum forms the bedrock of every nation's education system. Curriculum goes a long way to determine the extent of success to be attained by the educational system and the caliber of human resource to be produced in a nation. According to Longstreet (2000), curriculum is the subjects that are most useful for living in contemporary society which involves all the experience learners have under the guidance of the school. Marsh and Willis (2003) defined curriculum as the totality of learning experiences provided to students that they can attain general skills and knowledge at a variety of learning sites. Curriculum can be simply termed a brief written account of one's past history, e. g. education and many other aspects of life endeavour. Experiences of educational reform have shown that curriculum is at the same time a policy and a technical issue, a process and a product, involving a wide range of institutions and actors. Curriculum involves the courses offered by an educational institution, set of courses constituting an area of specialization. Curriculum in a nutshell, showcases the strength and weakness of an educational system. For the purpose of this paper, Marsh and Willis (2003) definition of curriculum was adopted.

Curriculum does not exist merely for its sake, according to Kelly (2009), the purpose of a curriculum include; to give both structure and direction for students learning new information as well as providing guideline for the teacher presenting the material in order to ensure that necessary information are organised and arranged ahead of time, to balance between subjects that are interesting for students and to specify the inputs required in relation to the occupational profile. Curriculum also provides guidance to both teachers and students on access requirements, linkages to other related occupations, articulation without learning pathways such as vocational qualifications obtained in education institutions, content (scope and depth), learning activities, development of learning materials and lesson plans as well as assessment requirements (Kelly, 2009). Curriculum is imbedded with learning experiences that reflects the needs of a nation and the best possible ways to fulfill them through producing capable human resources via education at all levels.

Physical Education

Generally, physical education is that aspect of education gained through organised physical activities. It is concerned with the total process of child's training and development. According to Bucher (1975), physical education is a phase of the total education process that has as its aim the development of physically, mentally, emotionally and socially fit citizens through the medium of

physical activities that have been selected with a view to realizing these outcomes. Atom (2011) defined physical education as a process of learning through physical activities designed to improve physical fitness, develop motor skills, knowledge and behaviour of healthy and active living, sportsmanship and emotional intelligence. Thus, physical education is not only aimed at physical development but also includes the development of the individual as a whole.

Physical education is also described as a process of education through physical activity; the goal is the development of individuals which is acquired through experience of motion. Physical education is a means to encourage the development of motors skills, physical abilities, knowledge, reasoning, appreciation of value (attitude-mental-emotion-spiritual-social), and habituation of healthy lifestyle that leads to stimulate growth and balanced development. The aim of physical education, like general education is to develop human personality in its totality through well planned activity programmes. Physical education goal is to develop all personality of an individual or wholesome development of human personality and it includes; physical, mental, social, emotional and moral aspects to make an individual a good citizen who is able to make contribution in process of nation building in one's own way. Thus, the objectives of physical education which are:

- The objective of physical fitness
  This refers to the state where an individual has developed great endurance, flexibility, speed, agility, strength and coordination. Physical fitness is essential to leading a happy, vigorous and abundant life.
- The objective of social efficiency
  This is concerned with one's proper adaption to group living. Physical education activities provides ample opportunities to develop traits such as cooperation, respect to others, loyalty, sportsmanship and self confidence. All these qualities help an individual to make him a good citizen.
- The objective of culture
  This aims at developing an understanding and appreciation of one's own local environment as well as the environment which is world-wide in scope. By participating in various physical education activities such as dance, sports and games, a person fully understand the history, culture, tradition, religious practices, and the aesthetic values associated with these activities.

Inherent in physical education are learning experiences that reflects the desires of a nation and the various ways to accomplish them through the production of able human resources through education institutions, thus the need for periodic changes of the physical education curriculum to meet the revolving demands of the society.

Curriculum Transformation

According to Douglas (2004), transformation is the act of making changes for better. America Heritage (2009) defined transformation as the process that involves change, especially, to a better form. Transformation cuts across all areas, organization and institutions. Curriculum transformation according to Anderson (2004) is a process whereby faculty in colleges, universities and secondary schools study existing stated learning experiences with the aim of modifying it to meet the needs of the learners and the society at large. Schenfeld (2010) defined curriculum transformation as changes which goes beyond creating a course or module, which aims to ensure that learning experiences are up to date and flexible, allowing for ongoing innovation and change. Curriculum transformation globally is a periodic change which is geared at phasing out some learning experiences and making positive input in the curriculum in order to cater for the societal, individual and educational needs of the populace. Curriculum transformation is a gradual process without hurry, in order to be able to cover the society demands and produce better learning experiences for the students.

Curriculum transformation is synonymous with injection of new ideas, methods and techniques or strategies into educational system so as to improve both internal and external efficiency arrangement of the system and more of development such as social, cultural, political, economic and technological, (Adepoju and Olaniyi, 1999). Curriculum transformation implies bringing about a change in the status quo. It is being described as a new dispensation to meet the challenges posed by new technological development and improve the quality of educational system. According to Vince (2006), curriculum

changes typically revolve around three (3) models which are infusion, integration and specialization. Infusion involves the content to pen in the curriculum to permeate and alter it in a way that affects all students. The content finds its way into the existing aspect of the curriculum, including programme and course objectives, subject areas, reading assignments and categories for assessment of outcomes. Integration aims to coordinate or unite aging content with the rest of the curriculum. It is not so persuasion as infused curriculum, rather aims to place aging content in strategic locations in the curriculum. This adds discussion and readings, but do not fundamentally alter the students' learning experiences. The focus of integration is on specific course content other than on students' long term learning outcomes. On the other hand, specialization refers to graduate advanced learning that builds on foundation content, with strong links to the advanced practicum placements and research in the field. Although specialization is often a desirable direction for graduation students, it can also result in segregation or isolating aging content from the rest of the curriculum or creating separate course that compete with one another for students which may transcend to having little or no knowledge of the aging content. Generally, the main aim of curriculum transformation is to improve standard of education and equip the learners adequately to meet the challenges of the society in the chosen area of specialization. Therefore, this paper defines curriculum transformation as the changes in physical education learning experiences which are geared towards providing learning experiences for all through information communication technology.

Information and Communication Technology (ICT)

It is extremely difficult nowadays to discuss education at any level in isolation with changes, reform and innovations, especially in this period of globalization and information and communication technology development, when teaching and learning activities are more of learners-centered rather than instructors-centered. To ensure that educational system is structured and made much more relevant to the needs and aspirations of the society, new and relevant ideas and approaches must be injected into the system.

Information and communication technology is an umbrella term that includes any communication device or application, encompassing; radio, television, cellular phones, computer and network hardware and software, satellite and others, as well as the various services and applications associated with them such as videoconferencing and distance learning. Information and communication technology is also defined as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information. The technologies include; computers, the internet, broadcasting technologies (radio and television) and telephone. In recent years, there has been a groundswell of interest in how computers and the internet can best be harnessed to improve the efficiency and effectiveness of education at all levels and in both formal and informal setting.

The broad goals of education should guide the choice of technologies that will be used and their modalities of use. The potential of each technology varies according to how it is used. Haddled and Oraxter (2008) identified five levels of technology use in education and they include; presentation, demonstration, drill and practice, interaction and collaboration. Each of the different ICTs; print, audio/video cassettes, radio and television broadcasts, computers or the internet may be used for presentation and demonstration, which are the basic of all the five levels. Except for video technologies, drill and practice may likely be performed using the whole range of technologies. On the other hand, networked computers and the internet are the ICTs that enable interactive and collaborative learning best, their full potentials as educational tools will remain unrealized if they are used merely for presentation and demonstration.

Teaching Physical Education Using Information and Communication Technology

Physical education activity plays an important role in people's daily habitual life. There is an increasing awareness of the importance of health and fitness, as well as the influences brought by physical activity from school-life to adulthood. Physical education is a discipline that does not rely heavily on written discourse; rather, it is where multiple presentations are needed for the construction of understanding. Within the broad areas of sport, physical activity and health, technologies are widely used as educational tools, to collect data as a basis for the development of better coaching methods and performance techniques, (Lockyer, 2007). ICT has the potential to offer in exciting and challenging environment, through which to enhance learning, (Hall, 2001). However, it is imperative that physical

activity focus is maintained. Physical education must endeavour to use technologies if such integration would promote learning within the activity context.

In the assertion of Matos (2005) ICT motivate learners and keep them engaged in learning, improve attainment levels and raise standards, personalize learning and give learners a voice, make difficult and abstract concepts in physical education easier to explain, saves time and more efficient in teaching practical topics and make learners partners in their formal learning. Furthermore, Matos (2005) enumerated ICT that enhance teaching and learning of physical education and they include; video cameras, motion analysis software, film editing in P.E, voice projection system, games consoles, pedometers, video conferencing and you-tube. According to Papastergious (2011), video cameras can provide footage of experienced performers in action and can be used to inspire, demonstrate correct techniques and develop pupils' understanding of physical education; motion analysis software helps in the evaluation of pupil performance and enhances learning while film editing in physical education enables teachers and pupils to study individual and team performance across a range of activities. Equally, voice projection system is used in P.E to amplify, enhance speech frequencies and broadcasts the voice of teachers from speakers to the whole class; games consoles are used to encourage disaffected pupils in P.E lessons in order to increase fitness levels; pedometers can be used to record pupils walking, running or jumping as well as measures the distance travelled, calories burnt and total time of active minutes by clipping it to the shoes of the pupils while video conferencing can provide pupil with the opportunity to learn in different ways which might include a focus on a particular topic being covered in physical education at examination level and you-tube enables physical education teacher wishing to visually describe a sport, an action, a skill or technique to a class to do so without much explanation and difficulty (Papastergious, 2011).

Within physical education according to Hall (2001), ICT has the potentials to contribute at various stages which include;

- Improve student's skills and techniques.
- Assist students in the review and evaluation of their performances.
- Develop student's knowledge and understanding of the subject.
- Develop student's understanding of the human body, physiology and health.

The study therefore seek to ascertain how the use of ICT in teaching P.E in secondary schools in Onitsha L.G.A. of Anambra State would achieve same potentials in the students as stated by Hall (2001).

The use of ICT in teaching physical education brings enthusiasm and motivation for the teachers and students, enables students to review their work and modify it to improve the quality (Richney, 2008). Richney (2008) further stated that ICT can be valuable to motivate students to improve their techniques as it provides opportunities to give feedback and create ideal situation for assessment of students learning. According to Papastergious (2011), blogs are utilized by physical education students as means to reflect on and showcase their performances of specific skills, through creating multimedia posts on the skills and receiving comments from the instructors, peers and external experts.

The use of ICT in teaching physical education also assists students in reviewing their performances in activities and aid in the evaluation too. According to Kirschner and Sellingger (2003), ICT allows pupils to use data-loggers to measure effort expanded in different activities and to record improvement in fitness level. In the opinion of Dates (2005) ICT enables physical education teachers to have split screen in order to compare two performances and from watching video clips of performances, the students evaluate their performances and learn how to improve their techniques.

The use of ICT in the teaching physical education helps in the development of learner's insight on the subject. Cuckle and Clarke (2002) stated that through video conferencing technology students from different locations see and discuss areas of difficulty in physical education which aids better understanding of the topics. Equally, ICT enables students to carry out independent research on a topic they do not understand (Cuckle and Clarke, 2002). In the assertion of Brits and Duarte (2005), video cameras can provide footage of experienced performance in action and can be used to inspire, demonstrate correct techniques and to develop pupils' understanding and knowledge of the subject. ICT provides opportunities to learn that might not readily learn in any other way. By reviewing their own actions, for example; pupils can evaluate and improve their own games strategies, gymnastics

sequences, trampoling routines or dance compositions, particularly if they are able to look at their performances in slow motion or from a different viewing angle (Vikram, 2009).

Also, ICT enables learners to learn more about the human body and how it responds to physical activities. In the view of Matos (2005), the use of fitness monitoring equipment such as specific fitness machines, monitoring blood pressure, heart rate and training zone helps students to understand ways to improve their health and wellness. According to Nye (2007), the use of ICT in physical education makes the science of sport come to life by linking both physical and mental activity, helps to create full-fledged students who are able to concentrate better on both practical and theoretical work and help students to develop a better understanding of their own body parts and that of the human body in general. Also, ICT raises the profile of physical education within the establishment by making the subject not only interesting but also attractive and effective where students can learn healthy lifestyles and consequences of unhealthy lifestyles (Nye, 2007).

Generally, ICT plays significant role in making the teaching of physical education activities more lively, interesting and easier to learn. ICT helps students to carry out research on their own especially in areas of interest and difficulty. In numerous ways, ICT aid the teaching of physical education in schools, the researchers deemed it proper to carry out the present research so as to ascertain the use of ICT in the teaching of physical education in secondary schools in Onistha L.G.A. of Anambra State.

Research Questions

1. How does ICT improve student's skills and techniques?
2. How does ICT assist students in the review and evaluation of their performances?
3. How does ICT develop student's knowledge and understanding of the subject?
4. How does ICT develop student's understanding of the human body and health?

Methods

Descriptive survey research design is a research design that is used to obtain information concerning the current status of the phenomena to describe 'what exists' with respect to variables or situations (Sheilds and Rangarjan, 2013). All the 30 secondary school physical education teachers in Onitsha were used for the study, hence, no sampling. Questionnaire was used for data collection and the validity of the instrument was established by five experts in the Department of Health and Physical Education, UNN. Data were analyzed using Statistical Package for Social Sciences (SPSS) batch system and mean scores were used to answer the research questions and 2.50 was set as the criterion mean.

Table 1: Improving student's skills and techniques through the use of ICT (n=30)

Items	SA	A	D	SD	Mean
1. ICT helps students perform activities properly	12	14	2	0	3.20
2. ICT helps students to understand steps in activities	14	15	1	0	3.25
3. ICT helps students to step up their performance	9	20	1	0	3.27
4. ICT helps students to perfect their skills	17	13	0	0	3.57
	Grand mean = 3.32				

Table 1 reveals a grand mean of 3.32 which is greater than the criterion mean of 2.50. Therefore, the result shows that ICT help students to improve their skills and techniques. The result shows that ICT help students perform activities properly (3.20), understand steps in activities (3.25), step up their performance (3.27) and perfect their skills (3.57).

Table 2: Assisting students in the review and evaluation of their performance through the use of ICT (n=30)

Items	SA	A	D	SD	Mean
5. ICT helps students to examine activities	20	9	1	0	3.27
6. ICT helps students to assess their activities	7	23	0	0	3.77
7. ICT helps students to grade their actions	14	12	4	0	3.27
8. ICT enables students to examine difference in actions	9	20	1	0	3.27
Grand mean = 3.39					

Table 2 recorded a grand mean score of 3.39 which is greater than the criterion mean of 2.50. This implies that ICT assist students to review and evaluate their performances. Results from the table shows that ICT help students to examine activities (3.27), assess their activities (3.77), grade their actions (3.27) and examine difference in actions (3.27).

Table 3: Developing student's knowledge and understanding of the subject through ICT (n=30)

Items	SA	A	D	SD	Mean
9. ICT assists students to get more information about P.E	10	20	0	0	2.70
10. ICT helps students to be aware of new innovations in P.E	19	11	0	0	3.63
11. ICT helps students to gain insight on P.E activities	22	7	1	0	3.77
12. ICT helps students to interprete sequence of activities	21	9	0	0	3.77
Grand mean = 3.46					

Table 3 reveals a grand mean score of 3.46 which is greater than the criterion mean of 2.50 and this implies that ICT helps develop student's understanding and knowledge of the subject. The result shows that ICT assist students to get more information about P.E. (2.70), be aware of new innovations in P.E. (3.63), gain insight on P.E. activities (3.77) and interprete sequence of activities (3.77).

Table 4: Developing student's understanding of the human body and health (n=30)

Items	SA	A	D	SD	Mean
13. ICT assists students to know organs of human body	9	20	1	0	3.27
14. ICT enables students to understand mechanism of the body	14	15	1	0	3.43
15. ICT helps students to know healthy lifestyles	13	15	2	0	3.20
16. ICT helps students to know the importance of cleanliness	13	17	0	0	3.57
Grand mean = 3.36					

Table 4 shows a grand mean score of 3.36. The criterion mean is less than the grand mean which implies that through ICT students develop understanding of the human body and health. Equally, the result shows that ICT assist students to know organs of human body (3.27), understand mechanism of the body (3.43), know healthy lifestyles (3.20) and know the importance of cleanliness (3.57).

Discussions

Findings in table 1 shows a grand mean score of 3.32 which is greater than the criterion mean of 2.50. This indicated that through ICT students improve their skills and techniques in physical education activities. The finding in line with Richney (2008) who asserted that using ICT in teaching physical education brings enthusiasm and motivation for the teachers and enable students to review their work and modify it to improve the quality. With the use of ICT in teaching practical activities in physical education, students have the opportunity of improving their skills and techniques after viewing their performances against that of elite athletes. According to Papastergious (2011), blogs are utilized by

physical education students as means to reflect on and showcase their performances of specific skills, through creating multimedia posts on the skills and receiving comments from the instructors, peers and external experts.

Results in table 2 recorded a grand mean score of 3.39 which is greater than the criterion mean of 2.50. This shows that ICT assist students in the review and evaluation of their performance. The result agreed with the assertion of Kirschner and Sellingger (2003) that ICT allows pupils to use data-loggers to measure effort expanded in different activities and to record improvement in fitness level. In the opinion of Dates (2005) ICT enables physical education teachers to have split screen in order to compare two performances and from watching video clips of performances, the students evaluate their performances and learn how to improve their techniques.

Results in table 3 recorded the grand mean score of 3.46 which is greater than the criterion mean of 2.50. This indicated that through the use of ICT in teaching physical education, students develop knowledge and understanding of the subject. The result is in line with Brits and Duarte (2005) who stated that video cameras can provide footage of experienced performances in action and can be used to inspire, demonstrate correct techniques and develop pupils' understanding and knowledge of the subject. By reviewing their own actions, for example; pupils can evaluate and improve their own games strategies, gymnastics sequences, trampoling routines or dance compositions, particularly if they are able to look at their performances in slow motion or from a different viewing angle (Vikram, 2009).

Findings in table 4 recorded a grand mean score of 3.36 which is greater than the criterion mean of 2.50. This indicated that ICT helps students to develop understanding of the human body and health. Through the use of ICT in teaching physical education, students have clear view of the human body, how it functions and healthy lifestyles. The result agrees with the opinion of Nye (2007) that the use of ICT in physical education makes the science of sport come to life by linking both physical and mental activity, helps to create full-fledged students who are able to concentrate better on both practical and theoretical work and help students to develop a better understanding of their own body parts and that of the human body in general. Also, ICT raises the profile of physical education within the establishment by making the subject not only interesting but also attractive and effective where students can learn healthy lifestyles and consequences of unhealthy lifestyles (Nye, 2007).

Conclusions

The following conclusions were drawn from the study:

1. Through the use of ICT in teaching physical education students improve their skills and techniques.
2. The use of ICT in teaching physical education assists students to review and evaluate their performances.
3. The use of ICT in teaching physical education develops students' knowledge and understanding of the human body.
4. Teaching physical education using ICT develops students' understanding of the human body and health.

Recommendation

From the results of the study, the researchers recommend that Ministry of Education should map out modalities to ensure that physical education teachers are taught how to integrate ICT in their classes through workshops and seminars in order to enhance the effective learning of the subject.

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