COMPUTER–BASED TRAINING AND WEB-BASED LEARNING STRATEGIES NEEDED FOR EFFECTIVE TEACHING AND LEARNING OF PHYSICAL EDUCATION IN SECONDARY SCHOOLS IN NSUKKA LOCAL GOVERNMENT

BY

EZEUGWU, JOSEPH AGU
DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION ENUGU STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY, ENUGU

Abstract

Technology innovations have facilitated the instructional delivery system of imparting knowledge and dissemination of information in ways that were not previously possible. This study was therefore designed to identify the e-learning strategies needed for effective teaching and learning of Physical Education in secondary schools. The study was carried out in Nsukka local government area of Enugu state. Descriptive survey research design was adopted for the study. The sample population for the study was 24 Physical Education teachers. Questionnaire, validated by 3 experts knowledgeable in e-learning was used for data collection. Using Pearson Product moment correlation method/ an internal consistency coefficient of 0.78 was obtained. Mean score was used in data analysis. The results of the study revealed that the 22 e-learning strategies are needed for effective teaching and learning of Physical Education in secondary schools. It was therefore recommended that Physical Education teachers should adopt the e-learning strategies needed for effective teaching and learning of Physical Education among others. Key words: Secondary school, physical education, e-learning and strategy.

Introduction

Information communication technology (ICT) is a set of technology tools and resources (computer, modem, television, internet and digital technology) used to communicate, create, disseminate, store and manage information. It enables the use of internet, e-mail, discussion forums and collaborative software for teacher to student and student to student interaction through which electronic learning is facilitated (Njoku, 2000, Chim & Aderson, 2005).

E-learning, as a concept, emerged in response to the global demand for qualitative education that is learner centered. E-leaning is one of the approaches teachers can utilize in facilitating students' learning at all levels of education, including secondary schools. Feng (2005) stated that e-learning is designed to facilitate and enhance learning through the use of personal computer, CD Rom, digital television and other e-learning devices. E-learning is learning through the internet and computer. The tools and techniques are used to provide teaching and learning in an electronic environment (Feng, 2005).

Electronic learning (e-learning) involves the passing of structured materials from repository to the learner. It adopts the product of information technology and the availability of cheap web browsers to make information (Farrell, 2000). In the words of Brock (2002), e-learning is the application of the internet to support the

delivery of learning skills and knowledge in a wholistic approach not limited to a particular subject or course or infrastructure. It provides flexibility enabling prompt training when and where they are needed. This is integrated into work place for relevance, access to experts and collaboration for team work. Hedge & Harywood (2004) defined e-learning as an innovative approach for delivering electronically mediated, well designed leaner-centered and interactive learning environments to anyone, any place, any time by utilizing the internet and digital technology concerned with instructional design principles. In the words of Isah (2010), e-learning brings proven benefits to students and teachers in terms of cost effectiveness and efficiency, encouraging students to take responsibilities of their own learning which will be of benefits to them. E-learning brings learning to people, reduces cost of learning experiences and helps to develop creativity on the art of the students. Kurtus (2004) stated that the advantages of e-learning include that e-learning provides the students or learners with information that can be accessed in a setting free from time and place constraints, that is, the students can go through the lessons at their own pace. The progress and achievement of the students can be accessed in e-learning with custom feedback and evaluation available in an interactive environment.

As inferred by O'Brien (2002), e-learning has all the characteristics of conventional learning and the interaction of traditional classroom exist except physical interaction which is mediated by computer software instead of classroom – student- interaction. This shifts from teacher-centered instruction to learner centered instruction which is needed to enable students acquire the new twenty first century knowledge and skill (Nwafor, 2007). Shifting the emphasis from teaching to learning can create a more interactive and engaging learning environment for teachers and learners. The new environment also involves a change in the role of both the teachers and the learners. The role of the teacher will change from knowledge transmitter to learning facilitator and co-learner with the learners. The new role does not diminish the importance of the teacher, but requires new knowledge and skills based on this, the learner will have greater responsibility for their own learning as they seek out, synthesize and share their knowledge with others (Nwafor, 2007).

This prompted the need for teachers in secondary schools especially physical education teachers to adopt the new technology and internet to change and revolutionize the ways Physical Education and other subjects are taught in schools. This is very necessary because the Federal Republic of Nigeria (FRN, 2013) provided for compulsory Health and Physical Education at junior secondary school and optional at senior secondary school and this may attract a large class size at a time. In most cases, this subject physical Education is not clearly and adequately taught due to lack and inadequate facilities, equipment, and enabling or conducive environment for effective study and practice. This generally affects the acquisition of the needed Physical Education skills and knowledge by the learners. This scenario also tends to run down the major objectives of Physical Education in secondary schools which according to Yaman (2007), is knowledge and skill development to be used in the society and solve problems. Other challenges, however, in the use of traditional teaching method in teaching Physical Education in secondary schools is the difficulty in funding the appropriate

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Research Questions

1. What are the Computer-based training strategies needed for effective teaching and learning of Physical Education in Secondary Schools?

2. What are the Web-based learning strategies needed for effective teaching and learning of Physical Education in Secondary Schools?

Method

The design adopted for this study was descriptive survey research design. The design was considered appropriate because Ali (2006) stated that it describes a setting or situation in its natural condition. The study was carried out in Secondary Schools in Nsukka Local Government Area of Enugu State. The population of the study comprised of 24 Physical Education teachers in Secondary Schools in Nsukka Local Government Area (PPSMB, Nsukka Zonal Office, statistics and record unit 2015/2016). The entire population of 24 Physical Education teachers was used as sample for the study as it is manageable. They are made up of 17 males and 7 female teachers. A questionnaire, developed by computer experts was used for data collection. The questionnaire was based on the two research questions posed for the study. The questionnaire was made up of 24 items rated on 4 point scale of Highly Needed (HN), Needed (N), slightly Needed (SN) and Not Needed (NN) with a weighting of 4, 3, 2, and 1 points respectively. The questionnaire was face validated by three experts. Pearson Product moment technique was used to determine the internal consistency of the questionnaire items. It yielded a coefficient of 0.72. The instrument was administered by the researcher to the 24 Physical Education teachers. All were retrieved and analyzed.

The weighted mean with standard deviation were used to answer the research questions. The mean of the scale of items is 2.50. Any item with a weighted mean value of 2.50 and above was regarded as an e-learning strategy needed for effective teaching and learning of Physical Education in secondary school, while any item with a mean value below 2.50 was not regarded as a good strategy for effective teaching and learning of Physical Education in secondary school. The standard deviation was used to determine the closeness or variation of the responses of the respondents from the mean. Any item with a low standard deviation indicated that there were less variations in the responses of the respondents, indicating that the mean values of the items were valid.

Results

The results are presented in tables according to the research questions that guided the study.

Research Question One

What are the Computer-Based Training strategies need for effective teaching and learning of Physical Education in Secondary School?

Table 1: Mean ratings of the Computer-based training strategies needed for effective teaching and learning of Physical Education in secondary school.

N = 24

S/N	Computer-Based Training Strategies	Mean (x)	Standard deviation (SD)	Decision
1	Use of simulation in teaching	3.16	0.51	Needed
2	Use of animation in teaching	3.25	0.75	Needed
3	Use of guided drill and practice method in teaching	3.33	0.41	Needed
4	Use of the gamming method in teaching	3.50	0.51	Needed
5	Use of video conferencing in teaching	3.41	0.77	Needed
6	Use of message board forums	3.33	0.41	Needed
7	Use of interaction through electronic mails to teach	3.25	0.75	Needed
8	Use of software in CD Rom in teaching	3.08	0.61	Needed
9	Use of interactive training	3.33	0.41	Needed
10	Use of multimedia computer projectors in teaching	2.08	0.56	Not Needed
11	Use of audio/visuals in teaching	3.41	0.77	Needed
12	Use of smart boars in teaching	2.75	0.90	Needed
13	Use of training software that adopt to learners individuals needs	3.41	0.77	Needed

The data presented in table 1 revealed that 12 items had their mean values ranged from 2.75 – 3.50. This showed that the means were above the benchmark of 2.50 indicating that all the items are computer-based training strategies needed for effective teaching and learning of Physical Education in secondary schools. One item had a mean value of 2.08 lower than 2.50 indicating that it is not a computer-based training strategies needed for effective teaching and learning Physical Education in secondary school.

S/N	Web-Based Training Strategies	Mean (x)	Standard deviation (SD)	Decision
14	Use of chat software for discussion class	3.58	0.49	Needed
15	Use of synchronous ca mera for mentor/mentee discussion to enhance mentoring	2.83	0.67	Needed
16	Use of digital drop boxes for file sharing and written critique/data	3.25	0.75	Needed
17	Use of discussion board for students team debates on the subject issues presented in the course of study	2.91	0.96	Needed

18	Use of e-mail for learning through role playing	3.58	0.58	Needed
19	Use of on -line spreadsheets and data analysis software for sharing and analyzing data	2.33	0.99	Needed
20	Use of server space to do assignments and class work	2.87	0.69	Needed
21	Using online expedition data for learning purpose	2.75	0.66	Needed
22	Use of scavenger hunting to seek, collect, organize and synthesize online information	3.41	0.77	Needed
23	Use virtual simulation in teaching	3.41	0.77	Needed
24	Accessing class work, exercises and questions through online drill and practice	3.16	0.59	Needed

Table 2 revealed that 10 items had their mean values ranged from 2.75 – 3.58. This showed that the means were above the cut off point of 2.50, indicating that all the items are Web-based learning strategies needed for effective teaching and learning of Physical Education in secondary schools. One item had a mean value of 2.33 below the cut off point of 2.50 indicating that it is not a strategy needed for effective teaching and learning of Physical Education in secondary schools.

Discussion

The results of table 1 revealed that 12 computer-based training strategies are needed for effective teaching and learning of Physical Education in secondary school. The findings are in agreement with the view of Nwafor (2007) who stated that recent advances in computer-Based Training simulations can allow one to teach Physical skills using specifically designed CBT programs.

The findings are also in agreement with Levi and Conrad (2000) who stated that CBT and Video can clearly show the action especially when learners need to master both theory and practices as in Physical Education, teaching can be augmented to portray motion. The findings also agrees with Moore (2005) who stated that well designed CBT will provide follow-up instructions appropriate to students responses which adapts instruction to students grasp of the knowledge of the subject matter. It is best at providing immediate feed-back. This is a very important strategy to use because when immediate feedback is given on students performance it will keep them from going about under misperceptions.

It is shown in the result of table 2 that 10 Web-based learning strategies are needed for effective teaching and learning Physical Education in secondary school. The findings are in agreement with the view of Brock (2002) that teaching strategies that utilize Web could include relating and comparing perspectives with other students and classrooms using e-mails, discussion boards or chat software. The findings also agree with Farrell (2000) that using synchronous camera, chat rooms with white boards or digital drop boxes for file sharing in mentor/mentee discussions can help students receive critiques from their mentors or facilitators and that can enable them partner with and help one another succeed and learn more. It could be multi-directional, school to school or student to student or school to students and facilitators. The findings are also in consonance with the idea of Feng (2005) that teaching strategies that involve scavenger hunt, online expedition and

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The statements, views and opinions of the authors helped to validate the findings of the study on e-learning strategies needed for effective teaching and learning of Physical Education in secondary school. This therefore, implies that the identified e-learning strategies for teaching and learning could be adopted for teaching and learning Physical Education in Secondary School.

Conclusion

E-learning is an essential tool in development of quality teaching and learning in our educational system and secondary school level in particular. Physical Education as an integral part of general education is affected or influenced with limited teachers. This study was therefore set out to identify e-learning strategies that are needed for effective teaching and learning of Physical Education in secondary school. However, the study has identified some Computer-Based Training strategies needed to include: Use of simulation in teaching, Use of video conferencing in teaching, use of user interactive training software in teaching and use of multimedia computer projectors in teaching among others while the Web-Based Learning strategies needed include: Use of chat software for

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