Asynchronous Learning and Academic Performance of Students in Social Studies in Abak Local Government Area, Akwalbom State

Nsikan Etukudo Akpanumo and Mfoniso Edet Tom
Department of Social Studies, College of Education
Afaha Nsit
chiefakpanumo@gmail.com (08068246557)

Abstract

The study determined the difference in academic performance of students in Social Studies based on the adoption of asynchronous instruction in Abak Local Government Area, AkwaIbomState.Three research questions and hypotheses guided the study. The study adopted the descriptive survey design.Thepopulation of the study comprised of all the 2,501 Junior Secondary Two (JSII) students in the ten (10) public secondary schools that make up the study area.A sample of 250 JSII students which represents 10 percent of the study population was selected for the study. Also, a systematic random sampling technique was used to select 5 public secondary schools out of which 50 JSII students were randomly selected from each of the 5 sampled schools. The researcher developed questionnaire titled "Adoption of Asynchronous Instruction and Social Studies Performance Questionnaire(AAISSPQ)"was used for data collection. Mean and standard deviation statistics was used in answering the research questions, while Independent t-test was used to test the null hypotheses at 0.05 level of significance and at 248 degree of freedom. Findings of the study showed a significant difference in students' academic performance in social studies based on availability, accessibility and utilization of e-learning technologies. Conclusion was drawn from the findings and the study recommended among other things that, efforts should be made by the governments at all levels and other stakeholders in education to make adequate provision of computers and other e-learning facilities required for effective asynchronous learning in secondary schools. This will help to improve students' performance in school subjects including social studies.

Keyword: Asynchronous Instruction, Academic Performance, Social Studies, E-learning Technologies.

Background of the Study

Asynchronous learning is a student-centred learning that uses online resources to facilitate information- sharing outside the constraints of time and place among a network of people. It is an approach that emphasizes the importance of peer to peer interactions. This approach combines self study with asynchronous interactions towards the promotion of learning through networking. Fundamentally, the use of asynchronous learning in teaching activities involves all forms of electronically assisted teaching and learning. The information and communication system serves as a specific media to implement the learning process

(Tavanagerian. Leyphold. Nolting and Roser, 2004). Students need to know the use of various technologies to communicate with the teachers and how to use a microphone, and how to post information to a bulletin board. They also need to know and understand communication etiquette in accordance with the instrument demands in an online learning environment. The materials to be used must be prepared in advance by the subject teachers' while students must understand what is expected of them in terms of a response (Heinich, Molenda, Reussel and Smaldino. 2002).

Social studies as an integrated subject need to be approached with more teaching materials that require information around the globe. Social studies nurtures responsible citizenship in the students. According to Edinyang (2012), teaching is part of the educational process aimed at giving to the learner some skills, competences, and intellectual capacity necessary for individual and societal growth. This implies that in this modern dispensation is facilitated through the application ICT. It should be noted however that the primary purpose of social studies education is to help the youths develop the ability to make informed and reasonable decisions. ICT which is the component of asynchronous learning should therefore be applied to the teaching and learning of social studies education.

The systematic use of ICT tools in classroom instruction makes the teaching and learning process more effective and highly interactive. According to Sudipta (2015), the effective and efficient use of ICT in asynchronous Instruction depends on technical competence teachers (ICT literacy of teachers), effective use of ICT hardware and software for teaching-learning activities, ICT-based pedagogy, online support, networking and management and adoption of best innovative practices in the use of ICT). Various ICT tools use for asynchronous instruction are Computer-Aided Instruction (CAI), Computer-Assisted Learning (CAL), LCD projector, Power Point Presentation, Smart Board, E-mail, Discussion forum, Wikis, Blogs Social Media, YouTube, CCTV, Video-conferencing, Teleconferencing, Google earth, Goodle Maps, Flicker, among others (Sudipta, 2015).

Asynchronous activities are conducted with participants providing input at different times and use technologies such as blogs, wikis, discussion forum, and e-mail. According to Alabi (2001), discussion forum is oftenused for general class discussions and for small group discussions. E-mail act as the workhorse for communication in online courses while the wiki has a number of asynchronous functions for asynchronous purposes. These include being a collaboration tool for student workgroups, a communications device similar to a threaded and an automatic e-mail reporting system to monitor student activity finally, the wiki has a variety of analytics tools that objectively measures and document student activities such as revision.

The ultimate aim of asynchronous learning is to make learning a robust, viable, user-friendly training platform. Its appropriateness thus informs the choice of a particular tool to the intended content and learners involved. The type of asynchronous learning appropriate for secondary school education is blended learning. Blended learning refers to learning that involves a combination of face-to-face classroom time interspersed with computer access, use of school networked computers, and use of students own mobile phones and personal computers (Bayode, 2012). These tools are advocated to facilitate effective learning and performance in school subjects among students.

Certain factors in asynchronous learning may influence students' academic performance in social studies. One of the factors is availability of e-learning technologies. Such technologies involve both out-of-classroom and in-classroom educational experiences via technology applications and processes such as web-based learning, computer-based learning, virtual education opportunities and digital collaboration (Keane, 2010). Subject content is delivered via the internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM. It can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio. In a study conducted by Amos, Adelani and Adebola (2015) the author found that students' academic performance in school subjects significantly differ based on availability of asynchronous learning technologies. Eboka (2011) also added that availability asynchronous learning technologies in learning enhance students' positive performance in school subjects.

Also, the accessibility and utilization of e-learning technologies in the teaching and learning process could significantly determine the level of performance of students in school subjects. According to Gabadeen, Alabi and Akinnubi (2015), students' academic performance in school subjects could be hampered if asynchronous learning (the use of e-learning technological tools) is not carried out adequately. In a study conducted by Gabadeen et al. (2015) on availability, accessibility and utilization of asynchronous learning technologies for sustainable secondary education in Federal Capital Territory, Abuja-Nigeria, the authors found a significant difference in students' academic performance based on accessibility and utilization of e-learning technologies (asynchronous learning).

Ugwanyi (2011), also found a significant difference in students' performance in economics based on accessibility of asynchronous learning technologies. Niederhauser, and Stoddart (2011) also found that students' performance in school subjects seem to be improved if asynchronous learning is implemented by the teachers through effective utilization of e-learning technologies. This shows that adoption of asynchronous instruction may enhance improvement in students' performance in social studies.

Statement of the Problem

The use of asynchronous instruction remains central in facilitating students' academic performance in social studies. ICT provides a window of opportunity for educational institutions to harness and use technology to complement and support the teaching and learning process. However, despite the advocacy of asynchronous learning in education, the researcher observed that in Abak Local Government Area, most public secondary school do not have ICT facilities where asynchronous learning could be adequately carried out. Most teacher and students are not effective and efficient in the use of ICT in learning instruction. Effective integration of asynchronous learning would call for schools to be networked in other to ensure access to multi-media and learning-rich resource via the schools intranet and internet wherever students and teacher are. The opposite seem to be the case in most public secondary schools, whereby computer labs, social networking tools and classroom computers are not sufficient and readily accessible. A wide range of peripheral and remote working devices including video-conferencing are not readily available and accessible for usage.

It therefore appears that the curricular orientation of secondary school does not adequately cater for the implementation of asynchronouslearning,thereby affecting students' performance in social studies. Therefore the present study sought to examine the differences in academic performance of Junior Secondary Two (JSII) Students in Social Studies based on the adoption of asynchronous instruction in Abak Local Government Area, Akwa Ibom State.

Research Questions

The following research questions were raised to guide the study:

(1) What is the difference in academic performance of Junior Secondary Two (JSII) Students in Social Studies based on availability of asynchronous learning technologies?

(2) What is the different in academic performance of Junior Secondary Two (JSII) Students in Social Studies based on accessibility of asynchronous learning technologies?

(3) What is the difference in academic performance of Junior Secondary Two (JSII) Students' in Social Studies based on utilization of asynchronous learning technologies?

Research Hypotheses

The following research hypotheses were formulated to guide the study:

(1) Students' academic performance in Social Studies does not significantly differ based on availability of asynchronous learning technologies.

(2) Students' academic performance in Social Studies does not significantly differ based on accessibility of asynchronous learning technologies.

(3) Students' academic performance in Social Studies does not significantly differ based on utilization of asynchronous learning technologies.

Design of the Study

The study adopted the descriptive survey design. The descriptive survey design is a design which describes the present condition of a particular event. It is a self-report research that enabled a researcher to collect data from respondents through the use of questionnaire. Nworgu (2006) asserted that descriptive survey design is the one in which group of people are studied by collecting and analyzing data from a representative sample of people or items considered for the entire group. This design is relevant to this work as it enabled the researcher to evaluate how academic performance of student's in social studies differ based on the adoption of asynchronous instruction in Abak Local Government Area, Akwalbom State.

Population of the Study

The population of the study comprised of all the 2,501 Junior Secondary Two (JSII) students in the ten (10) public secondary schools that make up the study area (State Secondary Education Board, Uyo, 2020).

Sample and Sampling Technique

A sample of 250 JSII students was selected from the total population of 2,501, which represents 10 percent of the study population. This sample size was determined on the basis of the postulation of Nwana (1981), that if the population is a few thousands, a 10% sample will do; and if several thousands (10,000 and above), a 5% or less sample will be representative of the population. Also, systematic random sampling technique was used to select 5 public secondary schools out of 10. A systematic random sampling technique is one in which every second, third, fifth or tenth number is chosen from a list of or array of the populace (Udoh and Joseph, 2005). Hence, the schools were arranged numerically from 1-9; thereafter, every odd numbered Local Government Areas were selected for the study. Fifty (50) JSII students each were selected from the sampled schools, which gave a total of 250 sampled respondents.

Instrumentation

The researcher developed questionnaire titled "Adoption of Asynchronous Instruction and Social Studies Performance Questionnaire(AAISSPQ)"was used for data collection. The items were framed in line with the research questions and hypotheses. The instrument had two sections. Section (A), contained 5 items each on availability, accessibility and utilization of asynchronous learning technologies, while section (B) contained 15 items achievement tests in Social Studies measuring the students' academic performance in social studies. The respondents were required to tick ($\surd$) from a list of options as individuals.

Instrument Administration

The research instruments were personally administered on the respondents in their respective schools by the researcher together with two research assistants. Also, permission from the respective principals were sought to allow the respondents respond to the items in the instrument. In addition to items written on the questionnaire, the subjects were given verbal instructions and clarifications where necessary.

Reliability of the Instrument

To establish the reliability of the instrument, Cronbach Alpha reliability technique was used. Here, the instrument was administered 30 JS1I students in a selected school not included in the population sample. The instrument was administered and data were collated. Data was subjected to correlation and Cronbach Alpha statistics was applied for test of internal consistency of the instrument. This yielded the overall reliability co-efficient of .68 for the adoption of asynchronous instruction and .74 for academic performance in Social Studies which were considered high enough for the study.

Method of Data Analysis

Mean and standard deviation statistics were used in answering the research questions while Independent t-test was used to test the null hypotheses at 0.05 level of significance and at 248 degree of freedom.

Data Analysis and Discussion of the Findings

Research Question 1

What is the difference in academic performance of Junior Secondary Two (JSII) students in Social Studies based on availability of asynchronous learning technologies?

Table 1: Mean and standard deviation analysis of the difference in students' academic performance in social studies based on availability of asynchronous learning technologies

Availability of Asynchronous Learning Technologies	n	Mean	SD
Available	119	12.78	1.63
Not Available	131	10.38	1.01

Data obtained in Table 1 shows the mean academic performance of 12.78 for schools with available asynchronous learning technologies and 10.38 for schools with inadequate asynchronous learning technologies. The standard deviation values for adequate and inadequate groups are 1.63 and 1.01 respectively. This shows a difference in the mean scores of students who have asynchronous learning technologies around them.

Research Question 2

What is the difference in academic performance of Junior Secondary Two (JSII) student's in Social Studies based on accessibility of asynchronous learning technologies?

Table 2: Mean and standard deviation values of students' academic performance in social studies based on accessibility of asynchronous learning technologies

Accessibility of Asynchronous Learning Technologies	n	Mean	SD
Accessible	57	13.91	0.97
Not Accessible	62	11.74	1.00

Data obtained in Table 3 shows the mean performance score of 14.74 and a standard deviation of 0.92 for students who effectively utilize asynchronous learning technologies and 11.58 with a standard deviation of 1.37 for students who do not effectively utilize asynchronous learning technologies. This shows that students academic performance in social studies differs based on utilization of asynchronous learning technologies. The inference drawn is that utilization of asynchronous learning technologies enhances students' performance in school subjects and vice versa.

Hypothesis 1

Students' academic performance in Social Studies does not significantly differ based on availability of asynchronous learning technologies.

Table 4: Summary of independent t-test analysis of students' academic performance in social studies based on availability of asynchronous learning technologies

Availability of Asynchronous Learning Technologies	n	Mean	SD	t - cal	t- crit	Decision
Available	119	12.78	1.63	14.12*	1.96	S
Not Available	131	10.38	1.01			

S = significant at P<.05, df = 248; n = 250

The result on Table 4 indicates that the calculated t-value of 14.12 is greater than the critical t-value of 1.96 at the degree of freedom of 248 and at .05 level of significance. Hence, the null hypothesis is rejected, while the alternate hypothesis is retained. This means that, student academic performance in social studies significantly differ based on availability of asynchronous learning technologies.

Hypothesis 2

Students' academic performance in Social Studies does not significantly differ based on accessibility of asynchronous learning technologies.

Table 5: Summary of independent t-test analysis of students' academic performance in social studies based on accessibility of asynchronous learning technologies

Accessibility of Asynchronous Learning Technologies	n	Mean	SD	t - cal	t- crit	Decision
Accessible	57	13.91	0.97	11.92*	1.658	S
Not Accessible	62	11.74	1.00			

S = significant at P<.05, df = 117; n = 119

The result on Table 5 indicates that the calculated t-value of 11.92 is greater than the critical t-value of 1.658 at the degree of freedom of 117 and at .05 level of significance. Hence, the null hypothesis is rejected, while the alternate hypothesis is retained. This means that students' academic performance in social studies significantly differs based on accessibility of asynchronous learning technologies.

Hypothesis 3

Students' academic performance in Social Studies does not significantly differ based on utilization of asynchronous learning technologies

Table 6: Summary of independent t-test analysis of students' academic performance in social studies based on utilization of asynchronous learning technologies

Utilization of Asynchronous Learning Technologies	n	Mean	SD	t - cal	t- crit	Decision
Effectively Utilized	45	14.74	0.92	13.65*	1.658	S
Not effectively utilized	74	11.58	1.37			

S= significant at P< .05, df = 117; n = 119

The result on Table 6 indicates that the calculated t-value of 13.65 is greater than the critical t-value of 1.658 at the degree of freedom of 117 and at .05 significant levels. Hence, the null hypothesis is rejected, while the alternate hypothesis is retained. This means that, students' academic performance in social studies significantly differ based on utilization of asynchronous learning technologies.

Discussion of Findings

Result from this study shows that students' academic performance in Social Studies significantly differ based on availability of asynchronous learning technologies in Abak Local Government Area, Akwalbom State. This finding is in agreement with the finding of the study conducted by Amos, Adelani and Adebola (2015), which found that students' academic performance in school subjects significantly differ based on availability of asynchronous learning technologies. This finding is also in line with that of Eboka (2011), who found that availability of asynchronous learning technologies in learning enhances students' positive performance in school subjects. This result implies that availability of asynchronous learning technologies has positive impact on students' performance in school subjects.

Result also shows that students' academic performance in Social Studies significantly differs based on accessibility of asynchronous learning technologies in Abak Local Government Area, Akwalbom State. This finding is in agreement with the findings of the study conducted by Gabadeen, Alabi and Akinnubi (2015), which found a significant difference in students' academic performance based on accessibility and utilization of asynchronous learning technologies. This finding is also in tandem with the finding of the study conducted by Ugwanyi (2011), who found a significant difference in students' performance in economics based on accessibility of asynchronous learning technologies. This finding implies that accessibility of asynchronous learning technologies have significant impact on students' academic performance in school subjects.

From further findings of this study, students' academic performance in Social Studies significantly differ based on utilization of asynchronous learning technologies in Abak Local Government Area. Akwalbom State. This finding is in agreement with the finding of the study conducted by Niederhauser, and Stoddart (2011), which found that students' performance in school subjects seem to be improved if asynchronous learning is implemented by the teachers through effective utilization of e-learning technologies. This finding implies that adoption of asynchronous instruction may enhance improvement in students' performance in social studies and other subjects.

Conclusion

From the above findings, it is a truism to conclude that availability, accessibility and utilization of asynchronous learning technologies in secondary schools will enhance performance among students in Social Studies and indeed many other school subjects.

Recommendations

The following recommendations were drawn from the findings:

1. Efforts should be made by the governments at all levels and other stakeholders in education to make adequate provision for computers and other e-learning facilities required for effective asynchronous learning in secondary schools. This will help to improve students' performance in school subjects including social studies.
2. Teachers and students should be sensitized through seminars and workshops on the need to maximally utilize available asynchronous learning technologies in secondary schools so as to upgrade students' academic performance.
3. Stakeholders in education, such as Ministry of Education and non-governmental agencies should formulate, legalize and implement specific ICT policies on asynchronous learning technologies for the Nigerian secondary educational system.

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