EFFECT OF M-LEARNING ON STUDENTS' ACADEMIC PERFORMANCE IN INTEGRATED SCIENCE IN COLLEGE OF EDUCATION, AFAHA NSIT.

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Abstract

This study investigated Effect of M-Learning on students' academic performance in Integrated science in College of Education, Afaha Nsit. The researcher adopted a quasi-experimental research design. A sample of one hundred and twenty four Integrated Science students formed the sample size of the study. This was done with the use of Purposive sampling technique. Integrated science Performance test was the instrument for data collection. With the reliability of 0.76, the instrument was content validated with the use of test blue print. Data collect were analysed using mean, standard deviation and independent t-test statistics. The result showed that students taught with M-learning performed better than those taught with lecture method. With this, it was concluded that M-learning improved students' academic performance and there was no significant effect on gender. It recommended that for maximal academic performance of Integrated science students, M-learning approach should be used.

Keyword: Effect, M-Learning, Students', Academic Performance, Integrated Science.

BACKGROUND TO THE STUDY

Teacher education involve policies, procedures and design to foster teachers with skills , attitudes, behavior required to deliver stated content objectives in the classroom or community In a classroom setting, teacher education is seen as the most anchored point where the community, state or a nation depend upon. According to UNESCO (2015) teacher education addresses environmental, social and economic context to create locally relevant and culturally appropriate teacher education programme for both pre-service and in-service teachers. Perraton (2020) stressed that teacher education generally includes four elements, improving educational attainment of trainee teachers, increasing their knowledge an understanding of subject matter and improving the pedagogy skills and competences.

Tertiary institutions, secondary and primary schools teacher education should be considered very important. There is a popular saying "no nation can grow beyond her system of education", this is because teacher education has been recognized as the key to national development and modernization of a country. Due to the paradigm shift from the traditional ways

of teaching to the modern ways, Basic science as a branch of science is very important in order to embrace amidst the use of emerging technologies in teachers education for global competitiveness. Basic science education formally called integrated science education mostly has to do with the strategies of teaching science concepts .Basic science is the study of Integral sciences (Kofi, 2016). Integrated science involve the study of Biology , Physics , Chemistry and other science to make a whole. Integrated science is taught at junior secondary schools, senior secondary , colleges and universities to achieve common educational goals.

According to the Nigerian Integrated Science Project (1970), Integrated principles are intended to produce, among other things a course which:

(a) is relevant to student-needs and experiences;

(b) stresses the fundamental unity of science;

(c) lays adequate foundation of subsequent specialist study; and

(d) adds a cultural dimension to science education.

Based on these objectives and the tenets of integrated science discussed earlier, students should be made to master the following skills:

(i) Observing carefully and thoroughly;

(ii) Reporting completely and accurately what is observed;

(iii) Organizing information acquired by the above processes;

(iv) Generalising on the basis of acquired information;

(v) Predicting as a result of these generalisations;

(vi) Designing experiments (including controls where necessary) to check these predictions;

(vii) Using models to explain phenomena where appropriate;

(viii) Continuing the process of inquiry when new data do not conform to predictions.

SOME PROBLEMS OF INTEGRATED SCIENCE AND WHY IT IS A FAILED DISCIPLINE IN NIGERIA

Aside from the enormous objective and skilled derived from leaning integrated in schools there are some problem of Integrated Science Learner's Readiness. The state of integrated science teaching/learning is fast deteriorating in our secondary schools. This view is attested to by the abysmally low rate of enrolment of students in core science subjects like physics, chemistry and biology. Consequently, students become disenchanted and apathetic towards science. Some

measures must be taken to reverse the negative attitude of our students toward integrated science. It seems that we need to reappraise integrated science curriculum objectives vice versa the intellectual status of the average learner at the secondary school level by bringing in emerging technologies in teacher education for global Competitiveness.
For maximum outcome of Basic science related expectations , there should be a continued expansion of teacher training opportunities, continuous programme of enhanced status and professionalism for tertiary institution teachers through training and retraining review of current remunerations packages and enhanced carrier opportunities, programme designed to address the capacity needs of school and educational management, building the capacity of the inspectorates services to improve quality (National policy on Education,2004), improving condition of service improving professionalism in teaching, helping teachers to fit into social life of the community, to produce highly motivated concernscious and efficient classroom teacher for tertiary institutions as well as improving knowledge and use of information communication technology for teachers .

In this study, the researcher focused on mobile learning otherwise called M-learning. M-learning or mobile learning, is a form of approach where learners use phones to learn anywhere and anytime (Crescente and Lee, 2011). The portability that mobile devices provide allows for learning anywhere, hence the term "mobile" in mobile learning. M-learning devices include computers, MP3 players, mobile phones, and tablets. M-learning can be an important part of informal learning (Trentin & Repetto, 2013). M-learning is convenient in that it is accessible virtually anywhere. It allows for the instant sharing of feedback and tips since mobile devices are often connected to the internet. M-learning also offers strong portability by replacing books and notes with small devices filled with tailored learning content. Moreover, it has the added benefit of being cost-effective, as the price of digital content on tablets is falling sharply compared to traditional media such as books, CDs, DVDs, etc. For example, a digital textbook costs one-third to half the price of a paper textbook, with zero marginal cost (UNESCO, 2015).

STATEMENT OF PROBLEM

Despite the role of science in the development of any nation , Basic Science Education tends to be overlooked. Researchers have identified some possible ways of making learning meaningful and their emphasis were on students related issues and their academic performance in science subjects such as integrated science , Biology, chemistry, physics and others in West African Examination Council (WAEC) and National Examination Council (NECO).Hence, this study Effect of M-learning on academic performance of Integrated science students in College of Education, Afaha Nsit. Akwa Ibom state for global competitiveness.

PURPOSE OF THE STUDY

The purpose of the study is to examine the effect of M-learning on academic performance of integrated Science students in College of Education, Afaha Nsit.

Specifically, the study seeks to;

1. Examine the effect of M-learning on integrated science academic performance in college of education, Afaha Nsit.

2. Examine the effect of M-learning on integrated science student's gender in college of education, Afaha Nsit.

SIGNIFICANCE OF THE STUDY

- The study will be benefit to the policies makers, educational service providers and curriculum planners as such will provide them with necessary information required for improving integrated science learning.

- The result of the study will be a solution to students' performance in integrated science performance and with this; government will provide more mobile equipment for students with the study area.

- The study will also make government, non-governmental agencies, and companies to sponsor integrated science teachers on effective use of M-learning approaches.

RESEARCH HYPOTHESES

The following research hypotheses were formulated to guide the researcher;

1. There is no significant effect of M-learning and lecture method on students' academic performance in integrated science in College of Education, Afaha Nsit.

2. There is no significant effect of M-learning on male and female students' academic performance in integrated science in College of Education , Afaha Nsit.

Keywords

1. Teacher education; this refers to the training of integrated science teachers in higher institutions .

2. M-learning ; An act of learning where students used mobile phones or M-equipment.

METHODOLOGY

DESIGN

The design adopted for the study was a quasi-experimental research design. This design was suitable as the researcher manipulated the students' academic performance.

AREA OF THE STUDY

The study was conducted in the department of integrated science, Akwa Ibom State college of Education, Afaha Nsit.

POPULATION OF THE STUDY

Population of the study comprised of all integrated science student in 300 level (N.C.E programme), Akwa Ibom State College of education, Afaha Nsit.

SAMPLE AND SAMPLING TECHNIQUE

A sample of One hundred and twenty four Integrated science was used for the study. The sample was obtained using purposive sampling technique.

INSTRUMENTATION

Major instrument for data collection was Integrated science performance test (ISPT).The instrument has two sections that is section A and B. The section A contain demographic information while section B contain twenty multiple choice item test with A-D options. The test was developed in the concept of reproduction in Integrated science .

VALIDATION

Content validation of the Integrated science performance test (ISPT) item was ensured with the use of test blue print and was face validated by two experts from department of educational foundation , college of Education , Afaha Nsit.

RELIABILITY OF THE INSTRUMENT

The reliability of Integrated science performance test (ISPT) was 0.76. The reliability value was obtained using split half and Pearson Product Moment Correlation Coefficient PPMC

METHOD OF DATA ANALYSIS

Data collected from the respondents were analysed using, mean, standard deviation and independent t-test analysis .

RESULT OF FINDINGS

RESEARCH HYPOTHESIS 1.

There is no significant effect of M-learning and lecture method on students academic performance in integrated science in College of Education , Afaha Nsit.

To answer the hypothesis 1 , mean, standard deviation and independent t-test .

Table 1

Mean scores of students taught with M-learning and lecture method in integrated science .

Variables	N	$\overline{x}$	SD	DF	t-cal	t-crit	Decision
Students with M-learning	80	18.21	2.16	122	4.32	1.96	Significant
Students with lecture method	24	14.36	1.87				

In Table 1, the calculated t-value is greater than the critical t- value at 0.05 level of significance. Therefore, the null hypothesis stating no significant effect of M-learning and lecture method on students' academic performance in integrated science in College of Education , Afaha Nsit is

rejected. Hence, there was significant effect of M-learning and lecture method on students' academic performance in integrated science in College of Education , Afaha Nsit .

Research Hypothesis 2.

There is no significant effect of M-learning on male and female students' academic performance in integrated science in College of Education , Afaha Nsit.

To answer the hypothesis 2 , mean, standard deviation and independent t-test .

Table 2

Mean scores of male and female students taught with M-learning in integrated science .

M-learning	N	$\overline{x}$	DF	t-cal	t-crit	Decision
Male M-learning	30	17.31	2.11	0.62	1.96	not significant
Female M-learning	50	17.38	2.02			

In Table 2, the calculated t-value is not greater than the critical t- value at 0.05 level of significance. Therefore, the null hypothesis stating no significant effect of M-learning on male and female students' academic performance in integrated science in College of Education , Afaha Nsit is accepted . Hence, there was no significant effect of M-learning male and female students academic performance in integrated science in College of Education , Afaha Nsit .

Discussion of Findings

Effect of M-Learning on Students' Academic Performance

In Table 1. There is a significant effect of M-learning and lecture method on academic performance of students in integrated science in favour of M-learning group . The differences in the academic performance could be as the result M-learning capable of improving and making learning real for the students anytime any day they wanted to learn. This was possible because the integrated science content taught stimulated the sense of sight, hearing , touching and also cause the students to performed better . This result is in line with finding made by Kadir and Ercan (2018) who examined the effect of mobile learning applications on undergraduate students' academic achievement, attitudes toward mobile learning and animation development levels. Their results had it that M-learning promoted academic performance of students.

Effect of M-Learning on Male and Female Students Academic Performance

In Table 2. There is no significant mean differences between the academic performance of male and female students taught with M-learning approach . The insignificant differences in the academic performance of male and female students could be as the result of M-learning capable of improving and making learning real for both gender. This was possible because both gender could learn the content anytime any day improve their academic performance in Integrated science . This result is in line with finding made by Nissreen, Alam-Elhuda and Elhadi

(2021) who investigated effect of mobile learning on academic achievement and attitude of Sudanese dental students.
Their result had a positive performance in medical science . This mean that, M-learning is a gender friendly approach .

CONCLUSION

Based on the findings, it was concluded that M-learning promote students' academic performance irrespective of gender in Integrated Science in College of Education , Afaha Nsit.

RECOMMENDATIONS

Based on the findings, the researcher wishes to recommend that;
For better academic performance of integrated Science , bile learning should be adopted .

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