

The Influence of Mobile Phone on Colleges of Education Students' Interest on Basic General Mathematics

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Abstract

The study examined the influence of mobile phone on students' interest in basic general mathematics colleges of education in Enugu state. Three research questions were posed to guide the study. The study adopted survey research design. All the NCE 1 students of government owned colleges of education in Enugu state form the population of the study. Sixty students (60) were sampled from the population using multistage sampling technique. The study sample was exposed to learning basic general mathematics (GSS 122) through mobile phone for period of three weeks. The instrument for collecting data was Basic General Mathematics Interest Questionnaire (BGMIQ) with reliability coefficient of 0.89 obtained from Cronbach alpha. Descriptive Statistic of mean and standard deviation was used to answer the research questions. It was found among others that the learning of basic general through the mobile phone develops the interest of the students in three main constructs (namely: tested, leisure and career). It was recommended among others that lecturers should be encouraged to integrate mobile phone for teaching basic general mathematics so as stimulate the interest of the students thereby improve their achievement in the course.

Keywords: Influence • Mobile phone • Education • Basic general mathematics

Introduction

The college of education system is one of the tripods of tertiary education in Nigeria. It has the primary role of training teachers who will be awarded the minimum national teaching qualification (The Nigeria Certificate in Education (NCE)). The certificate qualifies one to teach in primary schools and junior Secondary Schools (JSS) in Nigeria and it takes three years to complete the training. Basic General Mathematics is one of the courses in General Studies Education (GSE) offered by all NCE students which is designed to expose students to a variety of knowledge across disciplines (NCCE minimum standard, 2015). It equips prospective NCE teachers with the necessary skills to cope with elementary/primary mathematics, irrespective of course of the specialization. Basic General Mathematics cuts across elementary mathematics concepts in algebra, geometry, trigonometry, and statistics [1].

In the Nigerian national policy on education, Federal Republic of Nigeria is stipulated that education is a tool for the development of the individual into a morally sound, patriotic, and effective citizen [2]. It is an instrument for national development and social change. The speed of development of any nation is determined by the level of educational advancement, especially in Mathematics. It is one of the subjects that were highly addressed in the National Policy on Education by the Federal Ministry of Education. Mathematics is a subject in the school system because of its importance in national development. Steen opined that mathematics is the bedrock of science and technology, without which there shall be no development [3]. It has been described as a model of thinking, which encourages learners to observe, reflect and reason logically about a problem and in communicating ideas, making it the central intellectual

discipline and a vital tool in science, commerce, and technology [4]. Salman defined mathematics as a precursor of scientific discoveries and inventions [5].

Mobile phones have become property owned by the rich, average, poor, young, old, and students respectively in Nigeria and it has several relevant roles to play in the education of the 21st century. Observations made by researchers confirmed that mobile phones have the potential of improving the teaching and learning processes because they are cheaper, mostly owned and used by tutors and learners. Onasanya, et al. opined that mobile phones have been seen as the most popular among younger and adult learners, and probably the most widely handheld device in Nigeria [6].

It has been noted that mobile devices can be an effective educational platform. According to Nasser, et al., this is because mobile devices are easily accessible by students and provide adequate support for standard internet technologies [7]. Using modern methods and techniques integrated with M-learning can help to make the learning of students to be more interesting, interactive, widely available, and flexible. M-learning is a cost-efficient style that can help students to learn more without traditional restrictions. Alsadi and Abushawar opined that mobile devices enable educators to deliver material to students based on their needs and preferences [6]. Mobile devices used for education can provide the opportunity to transmit instructions in a learning environment where teachers and students are separated by time or space or both, wherein the teacher provides the course content through course management applications, multimedia resources, the internet, videoconferencing, and so on. Some of the expected benefits of mobile learning include but are not limited to the following; continuous, ongoing, flexible, enables time for reflection, informal and formal learning, personalization, readily available (ubiquitous), contextual, and relevant.

One of the common goals of all mathematics teachers at all levels of education is that, students should understand and learn mathematics. Various factors are involved in shaping the understanding and learning of mathematics. However, one of the important prerequisite to understanding mathematics is interest. Interest is the feeling of intentness, concern or curiosity about an object. It is also regarded as condition of wanting to know or learn about some objects [9]. Interest is a strong factor in the teaching and learning of mathematics. Wang defined interest as a feeling that prompts us to spontaneous activity. It is a motivating force that impels us to attend to a person, a thing, or an activity as well as effective experience that has been stimulated by the activity itself [10].

Interest is an important variable in learning because when one becomes interested in an activity, one is likely to be more deeply involved in that activity

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[4]. It is a subjective feeling of concentration or curiosity over something. It is preference for particular types of activities. It could be expressed through simple statements made by individual of their likes and dislikes. Interest plays crucial roles in the teaching and learning process. At the classroom level and beyond, learning can be meaningfully achieved within the context of optimal disposition of the learner of the tasks in question. This means that the learner needs to be psychologically present and attentive towards the learning tasks. Anigbo identified seven factors that were effective in predicting student’s interest in learning mathematics (teacher’s factor, student’s factor, instructional strategy, mathematics anxiety, infrastructural problem, class size and government factor) [11].

The major difference between mobile learning and traditional classroom lecture form of learning is that the former is learner-centered as opposed to classroom lecture form of learning which is teacher-centered. The traditional forms of learning could require learners to be present in one fixed location, whereas, with mobile learning, students can be anywhere as long as there is access to internet connectivity. Mobile phones solve this problem and promote learning anytime and everywhere [12]. By this assertion, mobile learning could present an opportunity where learners will be privileged to achieve learning via the use of smart or hand-held phones which they might consider as a great advantage. Hence, this study is therefore designed to examine the influence of mobile learning package on students’ interest in Basic Mathematics in colleges of education in Enugu state.

Statement of the problem

There have been wide concerned over students’ failure in Basic General Mathematics over the years across Colleges of Education in Nigeria. Notable scholars were attributing the failure to lack of infrastructural facilities, inconducive environment, and teachers’ ill equipped, poor method of teaching, negative attitude of the students, poor interest of the students’ and so on. It is therefore very pertinent for students to change their interest towards the course so as to meet up with the present challenges in education sector. Students are important tool towards any national development and this cannot be achieved without sound education. Education cannot be attained without proper cultivating good study interest among students. It is on this note that the present study would investigate the influence of mobile learning on students’ interest in basic general mathematics in colleges of education in Enugu state.

Research questions

Three research questions were posed to guide the study. They are:

- To what extent does mobile learning develop tested interest of students in learning basic general mathematics?
- Does mobile learning influence the leisure interest of students in learning basic general mathematics?
- Does college of education students’ career interest was developed through learning basic general mathematics through mobile phone?

Methods

The study adopted a descriptive survey design. Survey design was used because the population is large such that the study was limited to a sample size. Moreover, it sought and elicited opinion of the subjects on the issue under discussion. The population of the study comprised all NCE 1 students (both males and females) in government owned colleges of education in Enugu state. The sample size was made up of sixty NCE 1 students. Multi- stage sampling technique was used to select study sample. In the first stage, toss of the coin was used to draw one college of education out of two colleges of education in Enugu state. In the second stage simple random sampling technique was used to select one school from the drawn college of education. All the names of the schools in the drawn college were written in pieces of papers, folded and put in a basket. The names were properly shuffled and one name was picked at random. In the third stage purposive sampling technique was used

to drawn 60 students from the drawn school based on the students that have android mobile phone that can be utilized for basic general mathematics mobile learning package.

The research instrument for the study is basic general mathematics interest questionnaire (BGMIQ). The BGMIQ was administered by the researcher assistants to the students three weeks after they were exposed to learning basic general mathematics through mobile phone. The BGMIQ contains two sections which solicits for information on influence of mobile phone on students’ interest in basic general mathematics. Items in the questionnaire are such that it includes only positive statements. The questionnaire is on four-point likert scale (Strongly Agreed, Agreed, Disagreed and Strongly Disagreed). An item with a mean value of 2.5 above is agreed, while a mean value below 2.5 implies disagreement to the item statement. The instrument for this study was validated by subjecting the questionnaire to two experts in measurement and evaluation. The reliability co-efficient of 0.89 was obtained for the instrument using Cronbach Alpha. Data obtained from the study was analysed using descriptive statistics of mean and standard deviation.

Results

Research question 1

To what extent does mobile learning develop tested interest of students in learning basic general mathematics? (Table 1).

Research question 2

Does mobile learning influence the leisure interest of students in learning basic general mathematics? Table 2 shows that items 1, 4, 5, 6, 7 and 8 have means ranging from 2.56 to 3.01 with corresponding standard deviation of 0.72 to 1.05 while both items 2 and 3 have means 2.01 with corresponding standard deviation 1.11 and 1.02 respectively. This is an indication that mobile learning of basic general mathematics develops leisure interest of student in the course.

Research question 3

Does college of education students’ career interest was developed through learning basic general mathematics through mobile phone? Table 3 shows that items 1 to 4 have means ranging from 2.75 to 3.01 with corresponding standard deviation of 1.00 to 1.22. The analysis showed that mobile learning of basic general mathematics has the potential to develop career of college of education students.

Table 1. Mean and standard deviations of the extent to which mobile learning develop tested interest of students in learning basic general mathematics.

S. No	Items	Mean	Standard Deviation	Remark
1	Using mobile phone for learning basic general mathematics is interesting to me.	2.83	0.94	Agree
2	I find it convenient to use mobile phone for learning basic general mathematics.	2.74	1.05	Agree
3	Using mobile phone for learning basic general mathematics creates easy interaction between student-student as well as collaborators and instructor.	2.28	0.82	Disagree
4	I like discussing difficult topic on basic general mathematics through mobile learning package.	2.94	1.08	Agree
5	I rejoice whenever the tutor share ideas through forum on mobile learning package.	2.65	1.07	Agree
6	I like chatting on basic general mathematics video with my colleagues through mobile learning package.	2.34	1.79	Disagree
7	Learning basic general mathematics through mobile package solve problem of distance between tutor and students.	2.97	0.96	Agree

Table 2. Means and standard deviations of the extent to which mobile learning influence the leisure interest of students in learning basic general mathematics.

S. No	Items	Mean	Standard Deviation	Remark
1	Using mobile phone for learning basic general mathematics provides opportunity to learn anywhere at any time	2.84	1.04	Agree
2	Using mobile phone to learn basic general mathematics cannot lead to much addiction to mobile phone.	2.01	1.04	Disagree
3	Mobile learning usage for basic general mathematics distracts my attention from studying other courses.	2.01	1.11	Disagree
4	I used my personal mobile phone for learning basic general mathematics on mobile learning package.	2.56	1.02	Agree
5	I access the basic general mathematics videos on mobile learning package with ease.	2.74	0.72	Agree
6	I downloaded the basic general mathematics video on mobile learning package at my convenience.	2.67	1.00	Agree
7	I watch basic general mathematics videos anywhere at any time.	3.01	1.04	Agree
8	It costs me less to learn basic general mathematics through mobile learning package	2.89	1.05	Agree

Table 3. Mean and standard deviation of NCE 1 students' opinion toward their career development when learning basic general mathematics with mobile phone.

S. No	Items	Mean	Standard Deviation	Remark
1	I enjoy logical reasoning involving in learning basic general mathematics through mobile learning package.	2.78	1.02	Agree
2	Using mobile phone in learning basic general mathematics enhances my basic operation skills in mathematics.	2.99	1.00	Agree
3	Learning basic general mathematics with the use of mobile phone is constructive to my day to day academic life	3.01	1.07	Agree
4	Mobile usage for learning basic general mathematics changed my negative attitude towards mathematics	2.75	1.22	Agree
5	I will like to pursue mobile learning developer courses after my NCE program.	2.35	1.00	Disagree

Discussion and Conclusion

The result of the study with respect to research question 1 in Table 1 shows that NCE 1 students tested interest are motivated in learning of basic general mathematics through mobile phone. Table 2 indicates that leisure interest of student is influence through mobile learning of basic general mathematics. Also career interest of students are influence with the use mobile phone to learn basic general mathematics. It can be concluded from the study that mobile learning has the potential of stimulating students' interest in learning thereby improve their achievement in basic general mathematics.

Recommendations

The following recommendations are suggested from the study:

- Mobile learning platform should be integrated in colleges of education and other higher institution of learning for instructional delivery by lecturers to improve achievement of students.
- Government should provide all necessary facilities for the integration of mobile phone in the teaching and learning in colleges of education and other higher institutions of learning.
- Curricular developers and other stakeholders in educational should be sensitized on the need to develop a curriculum that will take care of mobile phone as a platform for teaching and learning.
- Parents should be educated on the necessity of mobile phone for their wards as a device for learning to meet up with global challenges
- Students should be encouraged as much as possible to make use of mobile phone in a positive way for learning instead of watching obnoxious film on it.

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