# AL-HIKMAH JOURNAL OF EDUCATION

# ATTITUDE AND PERCEPTION OF SECONDARY SCHOOL TEACHERS TOWARDS THE USE OF MOBILE TECHNOLOGY DEVICES FOR TEACHING

## A. I. ISSA, R. O. KOLAWOLE, M. R. ABDULRAHMAN, E. D. SALIHU & G. A. ALADESUSI

**Abstract**

*Teaching and learning in 21ᵗ century is undergoing a rapid paradigm shift as there has been a great clamoring for the introduction of Mobile Technologies into the teaching and learning process. The study was geared towards investigation of secondary school teachers' attitude and perception towards the use of mobile technology for teaching and learning. Survey research design was adopted. The sample comprised Seventy Five (75)teachers. A structured questionnaire was utilized in collecting data while percentage, mean and standard deviation were used to analyze the data collected. The results of the study indicated that secondary school teachers in Adavi Local Government Area, Kogi State only have access to few mobile technology facilities while the majority and the most important ones are partially accessible. Also, they have positive attitude and perception towards the use of mobile technology for teaching and learning. It was therefore, observed that there was significant difference on teachers' attitude towards the use of mobile technology devices for teaching based on their areas of specialization. No significant difference existed in the teachers' perception based on their gender. It was recommended that school proprietors should provide adequate mobile technology devices for the teachers to enhance continuous training on the use of mobile technology for teaching in Kogi-State.*

**Keywords:** *Teachers, Attitude and Perception, Mobile Technology*

## Introduction

Worldwide, educational system has been influenced positively by a rapid change in technology as it is elevating teaching and learning. Mode of instruction would, therefore, be subjected to challenges with the use of technologies in secondary schools and higher education system. This is due to the fact that, the insufficient infrastructural facilities in the schools are the major constraint in Nigerian educational sector. To achieve success in an educational system in terms of good quality education depends to a large extent on the provision of infrastructural facilities and adequate quantity and quality. The importance of technology in achieving modern educational demand can only be acquired if the secondary school teachers' attitude and perceptions are adequately developed towards the use of technology for teaching and learning process.

Knowledge is indispensable and it is true that education is fundamental to the development of a dynamic labour force capable of accessing and integrating knowledge into social and economic activities and participating in today's contemporary global economy. With the evolution of Information and Communication Technology (ICT),the delivery of education and training is changing. Sequentially, ICTs is influencing the life of every individual in today's modern ways of acquiring knowledge. ICT can be seen as a process, which is a set of

activities facilitated by electronic means: the capturing, storage, processing, transmission, and display of information. While as a product it covers the hardware and software, the network, and several other devices that convert information into digital form (Curtin, 2002; Moursund & Bilefeldt, 1999). ICT tools are many and still expanding. They include traditional hardware and software such as radio, television, motion picture projectors, camcorders, radio players, photography cameras, to mention a few. They also cover established and emerging hardware and software like computers, note books, mobile phones, mp3, e-book readers, personal digital assistant, interactive white board, e-mail, video conferencing, and many more (Anderson, 2010; Curtin, 2002; Moursund & Bilefeldt, 1999). ICTs have the potential to increase access, improve the relevance and quality of education in developing countries.

ICTs can be used to provide educational opportunities to people who previously had no access to education, such as scattered and rural populations, groups traditionally excluded from education because of cultural or social reasons, persons with disabilities and the elderly. This is possible because such technologies allow asynchronous learning, which is characterized by a time lag between the delivery of instruction and its reception by learners. ICTs, such as teleconferencing and mobile technologies make it possible for multiple, geographically dispersed learners to receive instruction simultaneously. The internet and the World Wide Web also provide access to learning materials in almost every subject and in a variety of media anywhere at any time of the day and to an unlimited number of people.

Naser, Abdelgawy, Ahmed andRaftama (2011) noted that internet and other technology devices have gained much popularity in the field of education. These technologies have been quickly adopted and are becoming mainstream methods. One of these technologies is modern mobile phones with software. There have been an extensive number of technologies springing up to enhance the quality of education. New technologies are mainly developed and being built up to improve the process of teaching and learning. Some educators suggested that the use of mobile technology is not as new in education and could have a particularly significant role to play in learning process accurately and effectively. And with the development of modern mobile phones, learners can have access to the web-based content, remix it, share it, collaborate with others, and create media-rich deliverable for the classroom teacher as well as a global audience (Alexander, 2004; Ferry, 2009; & Traxler, 2005).

Mobile technologies are used in a variety of educational settings for a several purposes and educational goals. While the claim about the positive impact of the use of mobile technologies in different aspects of education are compelling, data on how these technologies support, for example, the understanding of complex concepts or the development of learning skills that enable students to think critically and solve problems are limited. Mobile technology refers to any device that you can carry with you to perform a wide variety of "tasks". It is technology that allows those tasks to be performed via cellular phone, PDA, laptops, among others. A standard mobile technology has gone from being no more than a simple two-way pager to being a cellular phone, a GPS navigation system, a web browser, and instant messenger system, a video gaming system, and much more. It includes the use of a variety of transmission media such as: radio wave, microwave, infra-red, GPS

and Bluetooth to allow for the transfer of data via voice, text, video, 2-dimensional barcodes and more .

During the past few years there have been tremendous strides in the advancement of technology with the rise of mobile technology leading to an era characterized by the instant access to and mobility of information. Mobile technologies such as cellular phones, personal audio players, personal digital assistants, and portable computers have reshaped and redefined the ways in which information is constructed, accessed, and communicated among individuals and societies. As these mobile devices converge and wireless connectivity becomes more prevalent, remarkable technical capabilities are offered and profound innovative learning possibilities are now made feasible .

We are beginning to see significant adoption of these technologies in secondary and higher education, within individual and the communities, and in training and updating. They are having an impact on teaching, learning, and on the connections between formal and informal learning. Researchers have argued that these technologies have the potential to improve efficiency and effectiveness on teaching and learning and to challenge the essence of face-to-face teaching and learning (Dubendorf, 2003; Kukulska-Hulme, 2005). In examining the benefits of mobile technologies in education Kim; Mims; and Holmes (2006) summarized as follows: *mobility,* which is associated with the advantage of accessing information anytime, anywhere; *information management capacity,* which is associated with the digitization of information and electronic-based management; and *beaming capability* which allows the sharing of files instantly and in real time.

However, the value about the use of these technologies for education is that tool that first existed only on expensive desktop machines is now available on inexpensive handheld units . Examples of such tools are representation tools, communication tools, graphing calculators and tools for mapping concepts, running simulations, gathering data, and so forth. Certain characteristics of handhelds in particular, are seen as positive indicators of potential effective use in education. These characteristics are associated with portability given their small size, the cost advantage and longer better life over laptops, and the case of synchronization and sharing of data through wireless hotspot or Bluetooth. The issue of affordability is, in fact, one of the main advantages of handheld devices, at the same time, handheld devices are simple to maintain and generally they do not require technical support. Other arguments favouring the use of handheld technology in education, Zurita and Nussbaum (2004) suggested that handheld devices "support constructivist educational activities through collaborative groups, increasing motivation, promoting interactive learning, developing cognitive skills and facilitating the control of the learning process and its relationship with the real world.

Traditional teaching and learning methods that are at present in existence in most of our institutions of learning will not go away. They will still be necessary to provide research-based knowledge, structure, and social context for learning. The new technologies will not replace traditional learning but complement it. The history of technology shows us that few technologies have replaced previous technologies; instead they emerge to coexist and complement them. Television did not kill radio or movies. The internet has not replaced

books. As the capacity of the internet evolves and expands, the potential for online teaching and learning also evolves and expands. Therefore, the shift occurs in the web from a static content environment where end users are the recipients of information-defined as web 2.0. (Consumers) that is where e-resources are mostly freely available Information and learning resources on the internet are available for access by teachers and learners for instruction.

We are in the midst of a global technological boom that has, in the words of Freidman (2007), flattened the world. Because of the flattened, connectivity to people and places all over the world is possible. Students alike are now able to get instant information about happenings all over the world, which is a far cry from simply relying on information that was printed in textbooks years ago. Many young people today have become masters of manipulating technology that far surpasses the knowledge of most adults. Students have learnt how to type papers while listening to MP3 players and at the same time send text messages to friends on their cell phones. Many students have been exposed to the world of technology at an early age. Secondary school administrators now face the challenges of students using technologies to record as they deal with difficult situations in their classrooms. These recordings can either be posted on social websites such as YouTube, face book and Myspace, or simply submitted to the press.

Mobile technologies are being used in the classroom and in distance education to reach our to students, in order to deliver learning materials to students. Teachers can record their lectures and make them available for students to listen whenever they like. Providing teaching and learning materials in audio format are important for some subject areas such as when learning a language and English Literature. The mobile technologies are also used to connect to students to inform them when subject requirements are due and informing them on updates to each subjects. Mobile technologies can be used in any discipline that can be broken down into small segments of instruction.

Hence, it will allow students to complete one segment at a time. In addition to playing a supportive role in classroom instruction, mobile technologies can play a major role in distance education by delivering instruction anywhere and at any time. Books and course information would have to be formatted or read on computer and mobile devices screens. A good example of how this is being realized in the screen on the one hundred dollar laptop Information on the screen can be read in daylight as well as in the dark. The small screens on the mobile technologies are becoming more advanced for reading. As with the development of the virtual screen, students will be able to project information and images on a surface that in the same size as a regular computer screen. Because of the feature of portability, mobile technologies offer continuous accessibility to learners, who can view the learning resources or take notes conveniently.

Mobile technologies are increasingly equipped with capabilities that can communicate easily with each other through radio waves or Wi-Fi rather than traditional cables or wires, consequently, learners can easily share information, access network resources, or interact with others. The wireless feature enables learners to keep contact with each other no matter the distance. As a result, collaborative learning is more likely to occur with the support of wireless technology. Mobile technologies can have a far-reaching effect on how teacher and learners learn. The ability to harness these technologies in the design of online

classrooms can impact the engagement of teaching and learning by creating more options for learners to connect with course content as well as to other learners.

Perception is a process of translating sensory impressions into a coherent and unified view of the world around with the present situation based on incomplete and unverified information. Perception is equated with reality for most practical purposes and guides human behaviour in general. Perception can be seen as a way of understanding issues and the psychological ability to process or use information received. Perception is an act of perceiving; cognizance by the senses or intellect; apprehension by the bodily organs; or by the mind, of what is presented to them; or discernment; apprehension; cognition . Perception has been reported to depend heavily on the background knowledge .

Literatures have established a strong connection between individuals' perception and attitude towards a particular issue, event, or object. The behavioural end of perception is that of reaction or response, whether overt or covert, which is necessary if perception is to be considered a behavioural event and thus a psychological process. As a result of perception, an employee may move rapidly or slowly or develop an attitude towards an object .Someone's perception is his/her reality. Perception in communication determines how one will communicate and how they will receive information from another person. Perception in communication is based on three elements.

Gender is a factor in every aspect of human endeavor and has an import on all sectors of life. Mobile technologies refer to those new discoveries and new ways of doing things in a better perspective. Gender and mobile technologies therefore connote the gender relation (man or woman) as they react to the existence or discoveries of new technologies in the improvement of teaching and learning process . Daramola (2011) refers to gender as a social attribute and opportunity associated with being male and female. The mutual relationship which is constructed and is learned through socialization process and technology is modifying nature to meet their needs. Studies over the years have suggested that there is a technological gender gap between males and females, with female subject falling behind their male peers in the use of computers and other affiliates.

### Statement of the Problem

Mobile technology devices are not the only effective teaching tools. The application of mobile devices for learning, particularly in Nigeria secondary school is still at its infancy. The majority of Nigerian secondary school teachers are neither familiar, nor skillful in employing these tools in the process of teaching. It is of high importance that the traditional teaching method should be supplemented with mobile devices which can stimulate and arouse students' interest to learn effectively, which will greatly influence their academic performance positively and consequently facilitate learning. Most Nigerian secondary school teachers and student with possession of these mobile devices utilize them for entertainment purposes (listening to music, chatting on social media sites) which may not have any positive impact on both the teacher and the learner.

In Nigerian secondary schools, much has not been done in employing mobile devices as a supplementing tools for teaching. To the best knowledge of the researcher, there are dearth

of studies on how online devices can be utilized for teaching and how it can affect student learning rate. It is in the light of this that this study attempts to investigate the attitude and perception of secondary school teachers' towards the use of mobile technology devices for teaching in Kogi State.

## Methodology

A descriptive research of the survey type was used for this study. It was targeted at secondary school teachers' attitude and perception towards the use of mobile technologies for instruction in Kogi State. This method was deemed the most appropriate design for this study because it involves selecting a chosen sample from a large population. The target population for the study comprise all the teachers in the selected secondary schools in Adavi Local Government Area, Kogi State. However, 10 teachers were selected randomly from 10 selected Secondary Schools. While, stratified random sampling was used to classify the teachers' based on their Gender and Area of specialization. The questionnaire was validated by three lecturers from the Department of Educational Technology, Faculty of Education, University of Ilorin. The experts made necessary corrections and constructive criticisms which were useful in the preparation of the final draft of the questionnaire. The research instrument was tested for validity and reliability using split half method. The researcher personally administered 100 questionnaires to the respondents and was able to retrieve 75 that is 75% (75) of the questionnaire from the respondents. The obtained data was analyzed using descriptive and inferential statistics. Descriptive statistics such as simple percentage, mean and standard deviation was employed to answer the research questions while t-test was used to test hypothesis 1 and one way Analysis of variance (ANOVA) was used to hypotheses 2.

## Research Questions

The following research questions were raised to guide this study:

1. How do secondary school teachers perceive the usefulness of mobile technologies for teaching?
2. Do secondary school teachers' genders influence their perceived usefulness of mobile technologies?
3. What is the attitude of secondary teachers towards the use of mobile technology for teaching?

## Research Hypotheses

Based on the research questions, the following hypothesis were tested:

Ho,: There is no significant difference between male and female teachers' perception in the usefulness of mobile technologies for teaching.

Ho,: There is no significant difference between male and female teachers attitude towards the use of mobile technology in teaching.

## Hypotheses Testing

**Hypothesis 1:** There is no significant difference between male and female teachers perception in their use of mobile technologies for teaching.

Table 1: Teachers' Perception towards the Use Mobile Technologies for Teaching Based on their Gender

| Variable | N | Mean | SD | df | t | Sig. (2tailed) | Remark |
|---|---|---|---|---|---|---|---|
| Female | 23 | 46.608 | 5.982 | | | | |
| | | | | 73 | 3.155 | 0.229 | Not Rejected |
| Male | 52 | 43.94 | 7.505 | | | | |

Table 1, reveals that df (73), t = 3.155, p = .229. This means that the hypothesis was not rejected. This was as a result of t-value of 3.155, resulting in 0.229 significant values greater than 0.05 alpha level. By implication, the stated hypothesis established that there is no significant difference between teachers' perception towards the use of mobile technologies based on their gender.

**Hypothesis 2:** There is no significant difference in the teachers area of specialization based on their perceive usefulness of mobile technology in teaching and learning.

Table 1: Teachers' Attitude towards the Use of Mobile Technologies for Teaching Based on their Area of Specialization

| | Sum of Squares | df | Mean Square | F | Sig. | Remark |
|---|---|---|---|---|---|---|
| Between Groups | 2118.312 | 26 | 77.627 | | | |
| | | | | 2.123 | .012 | Rejected |
| Within Groups | 1755.375 | 48 | 36.570 | | | |
| Total | 3873.687 | 74 | | | | |

Table 2, reveals that F (26, 48) = 2.123, p<0.05, for Teachers' Attitude towards the Use of Mobile Technologies for Teaching based on their areas of specialization. This was found to be significant, meaning that there is a significant difference in the teachers' attitude towards the use of mobile technologies for teaching. Since it was established that there was a significant difference on the teachers' attitude towards the use of mobile technology based on their areas of specialization, therefore the null hypothesis which stated that there is no significant difference in Teachers' Attitude on the Use of Mobile Technologies based on their area of Specialization is rejected.

## Discussion of Findings

The study revealed that teachers' attitude and perception towards the use of mobile technologies for academic purpose is positive and teachers moderately have access to these facilities which will enhance teaching and learning. This further implies that for the secondary school teachers to efficiently use mobile technologies for teaching there is a need for an improvement in the current level of teachers' ICT skills possessed. More so, irrespective of the teachers' area of specialization, more training is required for all teachers. This is so because the use of mobile devices cut across all the areas of specialization and their competency level goes along with the rate of adapting technology use.

Furthermore, significant difference was found between male and female teachers' Attitude towards the use of Mobile Technologies. This implies that Secondary School Teachers gender has influence on their attitude and perception in the use of mobile technologies for teaching.

### Conclusion

The use of Mobile Technologies is changing teaching in several ways. The researcher explored teachers' attitude and perception in the use of mobile technologies for teaching in Adavi Local Government Area, Kogi State. The result obtained from data gathered and analyzed in this study indicated that the attitude and perception of the teachers are positively moderate. There was no a significant difference in the teachers perception on the use of mobile technologies for teaching based on areas of specialization. Finally, there was a significant difference between Secondary Schools Teachers' Attitudes on the Use of Mobile Technologies for Teaching based on gender. The result of this study could enhance the use of mobile technologies for teaching in Nigeria secondary schools.

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