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The Influence of Age and Educational Qualification on Stakeholders Perception of Integrating Mobile Technology into Basic Education in Nigeria

Adedoja, Gloria
Department of Teacher Education
Educational Technology Unit
University of Ibadan, Ibadan
E-mail: sadedoja@yahoo.com

Abstract

Policy makers, teachers, students and members of the society are normally referred to as major stakeholders in education. The role of stakeholders in facilitating decisions that affect educational policies cannot be undermined. Although technology is considered a veritable platform for enhancing the teaching-learning process, nevertheless the operators of this process are crucial to the strategic integration of this innovative tool to effective instructional delivery. The benefits accruable in the interface between mobile technology and basic education can only be fully harnessed when the views of stakeholders are given due consideration. It is against this background that this study interrogates how stakeholders in education perceive the integration of mobile technology into basic education in Nigeria. Two hundred and fifty-eight stakeholders in

education were selected as participants for the study. The findings revealed that stakeholders in education perceive, in positive light, the adoption of mobile technology as an invaluable driver of basic education in Nigeria. Stakeholders in this paper refer to as teachers at the basic level of education.

Key Words: Education Stakeholders, Perception, Mobile Technology and Basic Education

Introduction

The primary goal of basic education in Nigeria is to ensure the acquisition of appropriate levels of literacy, numeracy, communicative and life-long skills that would enable students to function effectively in the society as well as contribute to national development. The obvious challenge of the digital age is that it has become increasingly gruelling to execute any task without being sufficiently adept in the use of the Information and Communication Technology (ICT) tools.

The Universal Basic Education is an education reform programme of the Federal Government of Nigerian which provides free, compulsory and continuous 9-year education at two levels: 6 years of primary and 3 years of junior secondary education for all school-aged children (FRN, 2006). It can be inferred from this policy that beyond increasing access to education for all students, ensuring quality is a central goal of basic education in Nigeria. This is why scholars have consistently advocated for the need to integrate technology to basic education in order to ensure that students are exposed to appropriate digital and literacy skills that would adequately equip them to face the challenges of the modern society.

ICTs are generally considered as key tools in acquiring, processing and disseminating information especially at the basic level of education. This is as a result of the fact that they offer limitless possibilities for codification and interpretation of knowledge about teaching activities. Also, this technological innovation has made possible the delivery of content from anywhere and at any time. In other words, the constraints of time and space have been taken care of with the emergence of technology (Adedoyin, Akinnuwesi & Adegoke 2008). In addition, Yusuf (2005a) asserts that ICT has revolutionized the quality and quantity of teaching, learning and research processes in conventional classroom practices through the provision of flexible, collaborative and engaging learning

content as well as the provision of real opportunities for individualized instruction.

The realisation of the inherent potentials of integrating ICT tools into basic education in Nigeria has been reiterated in the National Policy on Education. According to the policy document: "in recognition of prominent role of Information and Communication Technology in advancing knowledge and skills necessary for effective functioning in the modern world, there is urgent need to integrate Information and Communication Technology (ICT) into basic education in Nigeria. Government shall therefore provide basic infrastructure and training for the realization of this goal at the primary school level" ((FRN, 2006, p.10, 4th edition). This implies that at the basic level of education, technological devices have the capabilities to: arouse the interest of pupils in the teaching-learning process; engage restless learners; induce learners' curiosity and problem-solving skills; foster active participation and; engender creativity in classroom activities.

One technological tool that has the capacity to effectively engage the minds of the digital learners at the basic education level is the mobile device. Mobile technology offers ubiquitous wireless devices that could enhance capabilities of students and educators in effective decision-making process. Also, it provides opportunities for effective interaction between teacher and learners wherever they are. Barkham (2012) notes that "it would not be a viable decision for schools that cannot afford modern ICT facilities to ignore powerful ICT gadgets in every pupil's pocket." Hence, the use of mobile devices emphasises the idea of learning as meaning-making by allowing students to learn with tools they are well familiar with, and create contexts that could appropriately replace the passive transfer of knowledge, which is still prominent in the conventional method of teaching (Bachmair et al. 2011). Grunwald Associates (2013) in their report reveal that more than half of parents believe that schools should make more use of mobile devices in teaching pupils at the basic level of education. Therefore, they practically rely on teachers and schools for guidance on helping their children use mobiles phones and applications for educational purposes. The mobile devices have been recognised as appropriate learning tools for instructional delivery especially in the developing countries where cell phones remain the only computing technology they have ready

access to. This makes mobile phones a potential alternative for computer-related learning at all levels of education (Kam et al., 2009).

Despite the unprecedented instructional gains that are derivable from the incorporation of technology into educational programmes, especially at the basic level, several factors hinder the seamless integration of technological tools to enhance teaching-learning process. The perception of stakeholders in education remains a critical factor that determines the extent of technology integration in instructional delivery. Adebayo (2013) defines education stakeholders as group of individuals who have vested interest in the education sector and are concerned with the administration, welfare, success and progress of an institution and its students in delivering intended outcomes and maintaining the viability of the school's services. Stakeholders' perception and participation in policy decisions and implementation has been identified as an effective instrument in ensuring educational quality and development. Hence, stakeholders are identified as Head-Teachers/Principals, Teachers, Students, Parents, Parents Teachers Association, School Management Committee, Community Members, Elected Officials, Non-Governmental Organizations (NGO's) and Ministry of Education (Helle, Letshego & Marinda, 2011).

It should be noted that the involvement of governments all over the world in educational policy implementation and decision making is gradually reducing with the effective partnership with relevant stakeholders in school management and administration. These actors perform critical functions by collaborating with the government to ensure effective realization of educational aims and objectives. The roles performed by education stakeholders include: advisory roles by developing strategies to train and retrain staff and leaders; linking products from academic research with the industries that would utilize the output and production of reliable leaders and; training of teachers to improve teachers' integrity and professional practices (Brussels, 2011). Also, Kamba, (2010) observes that "involving relevant stakeholders in managing the affairs of education improves the quality of educational system." Thus, education stakeholders are often viewed as critical contributory factors in ensuring educational quality, accessibility and development.

Cope and Ward (2002) reiterate that successful integration of learning technologies into classroom instructions is likely to be a function of perception

of education stakeholders such as teachers, administrators, principals and other actors. They further note that successful integration is more likely to occur when "teachers perceive learning technologies as part of a student-centred teaching approach that could effectively engage learners in classroom activities." When stakeholders in education collaborate on decision-making and policy implementation, the resultant effect is an improvement in school administration and quality output in the system. Based on their strategic roles in school management, the perception of the stakeholders needs to be critically examined while considering integration of technology, especially, mobile phones in facilitating classroom activities at the basic level of education.

Teachers' factors remain critical parameters in determining successful integration of technology across all levels of education. It should be noted that teachers' age could be a major determinant in integrating technology to instruction as young teachers who are considered as digital natives could have the technological capabilities to effectively use digital tools to facilitate classroom activities than their old counterparts. Waugh (2004) claims that integrating technology into classroom instruction is partly a function of teachers' age and technology adoption decreases as age increases. It is believed that older teachers may experience a decline in motor skills and the use of sensory organs that would be needed to operate digital devices in the classroom. Therefore, the older generation of teachers need to be specially trained to acquire necessary skills in integrating technology to instructional delivery.

Teachers' educational qualification is another factor that could hinder successful integration of technology to classroom activities. Neyland (2011), asserts that factors such as institutional support, teacher's technology skills and educational qualification influence the use digital tools for instructional delivery. Teachers' educational qualification, understanding of content knowledge and how to apply technology to support students' learning and attainment could go a long way in improving instructors' capabilities to integrate technology with classroom instruction (Lawless and Pellegrino, 2007). This study, therefore, examined the influence of age and educational qualification on stakeholders' perception of integrating mobile technology into basic education in Nigeria.

Statement of the Problem

The teaching-learning process is increasingly becoming technology-driven with the use of various innovative tools that enhance instructional delivery at all levels of education. The education sector is in dire need of effective integration of appropriate technological devices to adequately prepare students for the challenges of the digital age. A number of challenges have been identified as mitigating the successful integration of technology in teaching-learning process. Generally, many scholars agreed that education stakeholders play strategic role in technology integration across all levels of education. However, there seems to be a dearth of research in the area of integrating mobile technology for teaching and learning at the basic level of education in Nigeria. Also, the perception of stakeholders in integrating mobile technology at the basic level of education has not been widely reported. Therefore, in order to close this gap in literature, this study examines the perception of stakeholders in integrating mobile technology into basic education in Nigeria.

Research Questions

1. What is the influence of age on the perception of stakeholders in integrating mobile technology into basic education in Nigeria?
2. What is the influence of educational qualification on the perception of stakeholders in integrating mobile technology into basic education in Nigeria?
3. What is the perception of stakeholders in integrating mobile technology into basic education in Nigeria?

Theoretical Framework

This study was anchored on the theory of multiple intelligences by Howard Gardner. The basic assumptions of Gardner's theory are as follows:

- All human beings possess all nine intelligences in varying degrees. Each individual has a different intelligence profile.
- Education can be improved by assessment of students' intelligence profiles and designing activities accordingly.
- Each intelligence occupies a different area of the brain.

- The nine intelligences may operate in consort or independently from one another.
- These nine intelligences may define the human species.

The theory of multiple intelligences emphasizes that individual has his or her own unique intelligence. If curriculum, instructional contents, methods, technological tools and learning environment can fit into individual student's unique intelligence, the instruction and learning will become much more effective. Research has shown that currently there are nine multiple intelligences and these are: linguistic intelligence, logic-mathematical intelligence, spatial intelligence, bodily-kinesthetic intelligence, musical intelligence, interpersonal intelligence, intrapersonal intelligence, naturalistic intelligence and existentialist intelligence.

According to Gardner, the theory of multiple intelligences appealed to educators as a result of the unique contributions it makes to the teaching-learning process. The relative strengths and weaknesses among, and between these intelligences dictate the ways in which individuals take in information, perceive the world, and learn. This apparently represents a departure from the traditional view of intelligence, which recognizes only verbal and computational ability. Gardner's theory suggests that the manner in which subject matter is conveyed will influence individual's ability to learn. Hence, teachers need to take all of these intelligences into account when planning instruction and the type of materials to be used in engaging learners in teaching-learning process. While traditional textbooks often take a primarily linguistic approach to learning, the use of mobile technology can take a variety of approaches, such as aesthetic, logical, verbal and linguistic. Undoubtedly, the use of mobile technology to aid basic education could assist in addressing the needs of a broader range of learners. These 'multiple entry points' into the content are especially valuable in a formal educational setting, as they offer greater accommodation to the multiple intelligences of a diverse group of students.

The hallmark of mobile technology is its capability of allowing learners to adequately deploy their multiple intelligences in classroom activities. In other words, mobile technology provides multi-modal capabilities to develop multiple intelligences in learners. For example, the verbal-linguistic learner

relies on reading, writing, and speaking as their dominant intelligence. Learners in this category understand the order and meaning of words and has the ability to effectively use language to express their thoughts. Traditionally, this type of learner prefers literature, poetry, discussions, debates, word games, puns, creative writing, stories, and public speaking. Mobile technology allows learners to effectively engage verbal communication and exchange of ideas with other members of the class. Also, the Intrapersonal Learner possesses the type of intelligence that appreciates self-reflection. This type of learner desires knowledge about the meaning, purpose, and significance of things. The affordances provided by mobile technology allow learners to flexibly use Web 2.0 applications on their mobile phones to share opinions and exchange ideas with the instructor and other students in the classroom.

Generally, no single technological tool could totally develop all the intelligences in learners. However, the use of mobile technology for instructional purpose could go a long way in developing variety of intelligences that would assist learners to effectively participate in classroom activities.

Methodology

Research Design: This study adopted the survey research design to examine the perception of stakeholders in integrating mobile technology into basic education in Nigeria.

Sample and Sampling Procedure: A total of two hundred and fifty-eight participants were selected across schools under Ministry of Education in Nigeria using the simple random technique to constitute data sources for the study.

Research Instrument: A fifteen-item questionnaire was designed to examine the perception of stakeholders in integrating mobile technology into basic education in Nigeria. The items specifically measured the opinions and perceptions of various stakeholders on the integration of mobile technology into basic education in Nigeria.

Procedure: The researcher administered the questionnaire to the stakeholders with a view to finding out their opinions and perception on the use of mobile technology to facilitate basic education in Nigeria. The stakeholders are classroom teachers under Ministry of Education across the country who

teach at the basic level of education. The respondents were assured of the utmost confidentiality of the information provided and that data collected would be used for research purpose only.

Results and Discussions

Research Question one: What is the influence of age on the perception of stakeholders in integrating mobile technology into basic education in Nigeria?

Table 1: Influence of Age on the Perception of Stakeholders in Integrating Mobile Technology into Basic Education in Nigeria

Variable	N	Mean	Std. D	F	Df	Sig.
Perception on Mobile Tech. and Age 25-34 years	78	48.1282	6.8079	.070	(2,255)	.933
35-44 years	96	48.0208	7.3384			
45 years and above	84	47.7381	6.5842			
Total	258	47.9612	6.9152			

The result indicates that age has no significant influence on the perception of stakeholders in integrating mobile technology into basic education in Nigeria. Regardless of the age of education stakeholders, their perception of the integration of mobile technology into basic education was relatively high and positive. This, perhaps, can be adduced to the need for stakeholders (basic education teachers), regardless of their age, to harness the potentials and capabilities of technological tools to function effectively in this 21st Century society. The modern classroom environments are increasingly becoming technology-compliant and major actors in education sector need to show positive perception towards technology integration in facilitating teaching-learning process. It should be noted that even the mean value for the old people was as high as that of the young people. The implication is that the perception of stakeholders towards integrating mobile technology into basic education is not age-sensitive. This corroborates the opinion of Helsper and Enyon (2009) that the age or generation an individual belongs to, is not the only significant

variable in explaining the use of technology, rather sex, education, experience and degree of use also play important roles. Also, Orr, Allen, Poindexter, and Canning (2001) concluded that age did not have significant influence on teachers' integration of technological tools to instructional delivery. Thus, people across different ages appreciate the capabilities of mobile technology in enhancing teaching-learning process at the basic education level.

Research Question Two: What is the influence of educational qualification on the perception of stakeholders in integrating mobile technology into basic education in Nigeria?

Table 2: Influence of Educational Qualification on the Perception of Stakeholders in Integrating Mobile Technology into Basic Education in Nigeria

Variable	N	Mean	Std. D	F	Df	Sig.
Perception on Mobile Tech. and Qualification PGDE	146	47.7534	6.8113	2.660	(3, 254)	.049
Bachelor	90	49.1111	6.3200			
Masters	21	44.5238	9.0367			
PhD	1	47.0000				
Total	258	47.9612	6.9152			

Findings presented on Table 2 show a significant influence of educational qualification on the perception of stakeholders in integrating mobile technology into basic education in Nigeria. In other words, educational qualification of the stakeholders goes a long way in determining the way they will perceive the potentials of mobile technology in facilitating instructional delivery at the basic level of education. This might not be unconnected with the fact that people are bound to acquire more skills and knowledge on the intricacies of teaching and the capabilities of technology in facilitating learning as they go further in the pursuit of their education programmes. For instance, a Masters holder in the field of education must have been exposed to modern teaching strategies and application of 21st Century digital tools more than his first degree counterpart.

His/her experience and exposure would have placed him/her on a sound technologically pedestal to appreciate the enormous affordances provided by technological devices in facilitating learning. This could lead to positive perception towards integrating mobile technology into basic education programme in Nigeria. Wilson, Floden and Ferrini (2001) suggest that even with the challenges in training pre-service teachers in Universities and Colleges of Education, fully prepared and certified teachers are more successful with teaching students with technology than teachers without adequate preparation and training.

Research Question Three: What is the perception of stakeholders in integrating mobile technology into basic education in Nigeria?

Table 3: Perception of Stakeholders in Integrating Mobile technology into Basic Education in Nigeria

S/N	ITEMS	SA	A	D	SD	MEAN	SD
1.	I am well informed of the opportunities that mobile technology provides in instructional development.	45.7%	48.5%	4.3%	1.6%	3.3837	.6453
2.	If mobile technology is integrated, it will aid the performance of curriculum implementers.	32.9%	58.5%	5.4%	3.1%	3.2132	.6813
3.	I perceive that using mobile technology makes it easier reach instructional resources.	44.6%	47.7%	5.0%	2.7%	3.3411	.7002
4.	I am informed that the use of mobile phone increases students' interest.	39.1%	51.6%	8.1%	1.2%	3.2868	.6624
5.	I am aware that integrating mobile technology to basic education makes learning effective.	36.4%	54.7%	6.6%	2.3%	3.2519	.6794
6.	If mobile technology is integrated, it will foster	34.5%	55.4%	8.9%	.8%	3.2287	.6704

	efficiency in basic education.						
7.	I perceive that mobile technology will provide learners with easy access to information.	43.8%	49.2%	5.8%	1.2%	3.3566	.6458
8.	I perceive that integrating mobile technology into basic education will enhance learners' problem solving skills.	31.8%	53.9%	11.6%	2.7%	3.1473	.7232
9.	I believe that using mobile technology makes it easier to disseminate information.	37.6%	55.0%	5.0%	2.3%	3.2791	.6658
10.	I do not perceive mobile technology as necessary in basic education system.	10.1%	16.3%	47.3%	26.4%	2.8992	.9069
11.	If mobile technology is integrated into basic education, productivity will be increased.	32.2%	57.4%	8.9%	1.6%	3.2016	.6587
12.	I perceive mobile technology as an effective tool in basic education.	30.6%	58.5%	8.5%	2.3%	3.1744	.6752
13.	Mobile technology will enhance the performance in basic education.	30.6%	58.1%	8.9%	2.3%	3.1705	.6790
14.	Teaching-learning process could be augmented through mobile technology.	24.4%	62.4%	10.1%	3.1%	3.0814	.6813
15.	I perceive that mobile technology could lead to effective use of class time.	23.6%	53.5%	16.7%	6.2%	2.9457	.8067

Table 3 shows the degree to which stakeholders' perception of integrating mobile technology into basic education in Nigeria. The result indicates that major stakeholders in education sector perceived mobile phone as a viable tool that should be appropriately integrated into basic education in Nigeria. For instance, 89.1% of the respondents perceived mobile technology

as an effective tool in basic education programme. Also, 88.7% of the teachers believed that integrating mobile technology will enhance the performance of learners at basic education level. Findings by Zhu, Valcke, Schellens, and Li (2009) revealed that the use of technological tools for educational purposes is influenced by the perceptions of the teachers and other education stakeholders. Generally, the result reveals that the perception of education stakeholders towards integration of mobile technology into basic education is relatively high and positive. This could be due to the widespread influence of mobile phones on different categories of people in the society. Regardless of status and level of literacy, people now use mobile phones to accomplish major tasks in all sectors of our national life. Unarguably, the affordances provided by mobile technology in terms of flexibility and ease of access are well appreciated by all the major stakeholders in education sector. Huber and Ebner (2013) note that mobile devices can stimulate a level of reach, scope and immediacy that is largely invisible and unattainable in the conventional classroom environments. Since mobile phones are common 21st century tools that could effectively be used for computer-based learning, it is only logical and rational for stakeholders to consider mobile technology as a viable device to enhance teaching-learning process, especially, at the basic education level.

Conclusion

Education is too important a business to be entirely left in the hands of the government. Therefore, it is crucial that relevant stakeholders collaborate with governments at all levels to realise educational aims and objectives, especially at the basic education stage. Accommodating these stakeholders are invaluable to the effective day-to-day running of the school system. Their roles in policy implementation and decision-making cannot be over-emphasised. Therefore, inferring from the findings of the study, there is a nexus between stakeholders' perception and the successful integration of any form of technology in the education sector. Education stakeholders are, thus, considered strategic actors in integrating mobile technology into basic education in Nigeria.

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