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Teachers' Attitude on the Use of Smartphones in the Development of Incipient Literacy, Pronunciation and Numeracy Skills of Pre-Primary School Pupils in Katsina Local Government Area, Katsina State

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Abstract

*The study investigated teachers 'attitude on the use of smartphones in the development of incipient literacy, pronunciation and numeracy skills of pre-primary school pupils in katsina local government area. A structured questionnaire with the title "Literacy, Pronunciation and Numeracy Skills Questionnaire (*LIPNUSQ*)" validated at 0.74 Cronbach's level was used to gather data for the study. The research employed descriptive survey design and analysis were run accordingly using simple statistical analysis of SPSS. The study covered 49 primary schools with a sample size of 40 schools and 1490 teachers with a sample of 302 in Katsina Local Government Area. The year in focus (2018) had about 103,028 pupil's enrolment at pre-primary and primary levels with 51,465 boys and 51,563 girls. The class size versus the teacher therefore is 1:69. Information source was from Katsina Local Education Authority, Katsina State. A structured questionnaire for the teachers based on four points rating scale of Strongly Agreed (SA=4), Agree (A=3), Disagree (D=2) to Strongly Disagree (SD=1) was used. One of the major findings in the study was that primary age pupils have the skills to operate smart phones, therefore it is not advisable to leave them with smart phones unchecked rather it must be monitored accordingly by elders.*

Keywords: Smart phone, literacy, pronunciation, numeracy, pre-primary education, Information and communication technology

Introduction

When God created man, the first thing he implanted inside him was power of identification and recognition which formed the basis of all knowledge (Qur'an 2 v 31). It is after that man continued to identify, know, explore, describe and list things around him which led to permanent behavioural change or what is appropriately called "learning." Learning is in various forms such as traditional and scientific knowledge (Khadka, 2017). Learning is a process under education which manifests when an organism has received information and makes use of it. According to Schunk (2012), learning is an enduring change in behaviour, or is the capacity to behave in a given fashion, which results from practice or other forms of experience. Human organism is the most advanced among all creatures therefore he designs means of facilitating what, how and when to get new and improve knowledge.

Information communication and technology is an integral part of schooling process all over the world.ICTs greatly facilitate the acquisition and absorption of knowledge, offering developing countries unprecedented opportunities to enhance educational systems, improve policy formulation and execution, and widen the range of opportunities for business, (Mikre, 2011). He added that ICTs have revolutionized the way people work today and are now transforming education systems. As a result, if schools train children in yesterday's skills and technologies they may not be effective and fit in today's or tomorrow's world. This is a sufficient reason for ICTs to win global recognition and attention. For instance, ICTs are dependable tools in facilitating the attainment of one of the Millennium Development Goals (MDGs), which is achievement of universal primary education by the year 2015. According to Kofi Anan (2015), we must ensure that information and communication technologies (ICTs) unlock the door of education systems.

The new tools coming onstream include mobile phones which in many developing countries are more pervasive than PCs. Trials in schools in India reveal that these can play a valuable role in basic learning, calculation, referencing, documentation, recording of visual data, project work, peer-to-peer learning and home-to-school communications, (Latchem, 2010).

Nigerian education is designed to include basic levels (giving at the age of 0-15 years), post-basic and career development, mass and nomadic education, tertiary and open and distance education systems (NPE, 2013). Each level has goals and objectives to attain.

The attention of this paper is specifically on pre-primary education system focusing on the objectives therein in relation to how smartphones could be used to achieve a long-lasting literacy, pronunciation and numeracy skills in the public-school children of the 21st century. All these are embodied in educational technology. To understand what the term, Clark (undated) and Daramola (2015) while citing from AECT (2004), educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources.

With the above definitions we can understand that educational technology only considered the utilisation of rightful and appropriate technological tools and resources in easing teaching and learning while at the sametime discarding away those that are inappropriate or unethical. In the 21st century world the most appropriate, fundamental, and pertinent resources in use is the ICT. According to Egomo, Anyi&Tah (2012), Information and Communication Technology (ICT) is an indispensable part of the contemporary world. According to UNDP in UNESCO article (2008), ICTs re defined as the "information handling tools-a varied set of goods, applications and services that are used to produce, store, process, distribute and exchange information. In the views of Mavellas, Wellington and Samuel (2016), ICT tools can be grouped into three namely, input source, output and others. The inputs ICTs are personal computers, smart phone/tablets, applications software, student response systems, and visualiser or document cameras. Output sources include such devices as projectors, interactive boards, monitors, display, and television. While others include digital cameras, digital recorders, switchers and other technologies. This paper therefore investigated the perceived influence of smartphones on basic level education students, for enhanced letter and number recognition and identification as well as word pronunciation, most especially personal computers, smart phone/tablets and other portable tools that are available to the through their parents, siblings and even teachers.

These portable devices have in them incorporated learning applications which are inbuilt or internet downloaded items which the child accesses and utilise in one way or the other thereby becoming enlightened either intentionally or unintentionally, like through game plays. This help in improving the child's ability to recognise alphabetical and numerical expressions, animal names, plant names, car names and other things effectively with the guidance and assistance of an elder.

Inbuilt Apps and Web Learning Devices for the Child in the 21st century

Varied devices or materials are discussed which help children in learning new ways of identification of wide range of educative materials. We shall understand that today's child is different from that of yesterday's child; they are digital natives, meaning that they have an intuitive mastery of informatics, computers, electronic devices, and mobile equipment. They don't need to read the user manual and they don't ask for lessons on how to use a computer (Bernard, 2011).

Inbuilt and Online or web incorporated learning tools could be found in almost all the available personal computers and smart phones/tablets which are liable for update, example include the Hp System, Lenovo, Compaq, Samsung, Toshiba, Apples, Nokia, Motorola, Gionee models, Techno, Blackberry, LG, Xiomi, Samsung, Leagoo, Letv, Generic, Duai, Infinix, Blackview, Injoo etc, with wide range of available applications. In Nigeria, some of these tools include 9IJAKIDS, ClassNotes, ULesson, Teachme.ng etc, Edusko (2020).

Smartphone, according to Merriam-Webster's dictionary, is a mobile telephone that can be used to send and receive e-mail, connect to the internet, take photographs and other functions. It also sees tablets as a mobile computing device that has a flat, rectangular form like that of a magazine or pad of paper, that is usually controlled by means of touch screen, and that is typically used for accessing the internet, watching videos, reading electronic books, etc. and personal computer is a small computer designed for use by one person at home or in an office. According to Jones (2013), mobile devices have learning resources which children could access apart from the normal traditional books or classrooms. She further gave examples of such resources like dictionaries, encyclopaedia, educational applications and augmented reality flash cards, which can be regularly updated online to add new information.

Moreover, Jones (2013) added the followings as the benefits on how a Smartphone is beneficial to kids or primary school children, thus: it is an added dimension to learning, a homework help, for keeping in touch and locating the child, in navigation, for playtime. Note that it is also important to be strict about their usage by setting a maximum time they should spend with their own or parent's smartphones. That's the reason why Silverstone (2018) recommends that children between the ages of 2 to 5 can have an hour screen time per day (HSPD), while less than that ages should not even be allowed to use Smart phone/tablet or tablets except if it is for video calls. For further understanding, this paper listed out some important online tools which students of primary schools can utilise for good, thus:

Pattern of Web and Apps Tools for Children Education

It is not every web address or material a child or young student should be allowed to surf, browse or access for morality and character development. The following points proposed by Sangeeta and Karnam (2016) are salient tools which could help children to develop their literacy, pronunciation and numeracy skills: Duolingo, Lingvist, Bussu ,Livemocha, Geogebra, TouchCounts, DragonBox Algebra, Code.org, Hopscotch, Daisy the Dinosaur, Minecraft, Sugar Labs and s many others.

Pre-Primary Education System (Early Childhood Education) and ICT Policy in Nigeria

In the work of Ejieh (2006), Early childhood education in the form of nursery school or pre-primary education as we know ittoday in Nigeria is largely a post-colonial development. The semblances of it during the colonial era were the kindergarten and infant classes, which consisted of groups of children considered not yetready for primary education. As grouping for instruction in schools was not age-based during thatperiod, some children aged six or even more, could be found in some of the infant classes. With the phasing out of infant classes, some parents began to feel the need for nursery schools. He further added that the demandfor nursery education was, however, very low until recent times. This was not so, however, as Nigerian educational administrators, policy makers as the then military government of Nigeria had realised the need for it in the country and gave it official recognition in the National Policy on Education in 1977.

In the current National Policy on Education (Federal Republic of Nigeria, 1998) earlychildhood education is labelled as pre-primary education and is defined as the education given in aneducational institution to children aged three to five plus prior to their entering the primary school. Asstated in the policy document, the purpose of pre-primary education includes, among others: Providing a smooth transition from the home to the school; preparing the child for the primary level of education; providing adequate care and supervision for the children while their parents are at work; inculcating in the child the spirit of enquiry and creativity through the exploration ofnature, and the local environment, playing with toys, artistic and musical activities, etc. teaching the rudiments of numbers, letters, colours, shapes forms, etc. through play, and inculcating social norms.

The ICT policy of the federal government is meant to be implemented by all public and private schools across the country which is aimed at transforming the environment to a learner-centered one, assist in improving the quality of education and training by increasing learner's motivation and engagement as well as facilitating the acquisition of basic skills (Agbetuyi&Oluwatayo, 2012). The intended results of the ICT remained elusive particularly in Katsina local government and even beyond which slowed down the proper use and engagement of students with smartphones and other ICT facilities. Among the identified factors responsible for the slow deployment and use of ICT tools as identified by Agbetuyi&Oluwatayo (2012), include insufficient number of computers, epileptic power supply, problem of internet network failure etc. all these factors could affect smart-phone utilisation by students at schools or homes. Most time again, high cost of data has threatened the passionate freedom and access of smartphones by children to their parents' devices.

A theory is a scientifically acceptable set of principles offered to explain a phenomenon, (Schunk, 2012). This study is based upon the theory of Associationism which is the learning principle that states that ideas and experiences reinforce each other and can be mentally linked to one another. In a nutshell, it means our brains were not designed to recall information in isolation; instead information is grouped together into one associative memory (Associative Learning: Definition, Theory & Examples, 2015).

Problem Statement

The advent of ICT has opened up opportunities beyond imagination which otherwise could not have been possible most especially in accessing new information and its storage. Students have been empowered adequately to take on the challenges of teaching themselves new knowledge without waiting for the teacher, as such independent learning is emphasised at both schools and homes. Prior to this moment, it is not uncommon to meet a pre-primary school pupil or primary pupil who could not identify letters from A-Z talk less of adding numbers from 1-100. This is as a result of poor education background couple with lack of accessibility to new form of education facilitating resources like the ICT. The use of ICT, preferably smartphones, in creating concrete experience among pupils is a fantastic beginning as it will help in introducing new concept before the actual start up and the actual lessons in the class. Opportunities could be availed to the pupil thereafter to be appreciated right at home and in the school. The problems related to exposing pupils to ICT tools which include unwarranted accessing of vulgar sites, too much playing of games, unnecessary chatting and video watching which took a sizeable amount of pupils' time, remained a reason why most parents are adamant in allowing their children freehand to handle ICT tools or smartphones. With the anticipation of these negativities, parents and teachers and even other stakeholders in child upbringing downgraded the relevance of smartphones in child's life. These assumptions have resulted in loss of interest by parents in allowing their wards to manipulate smartphones and teachers have no concern in encouraging parents to allow students an opportunity to tap those benefits which these technologies carry. This study investigates those laying issues and proffer possible way outs.

Research Question

How can smartphones help to achieve literacy, numeracy and pronunciation skills in pre-primary school pupils?

Methodology

The research study adopted a descriptive survey design using a structured questionnaire with the title "Literacy, Pronunciation and Numeracy Skills Questionnaire (LIPNUSQ)"validated at 0.74 Cronbach's level to gather data for the study by experts from the department of education foundation, Federal University, Dutsin-ma. The result of the test (0.74) suggests a reliable estimate of the level of internal consistency of the information contained in the responses gathered from the questionnaire. The study covered 40 primary schools out of the 49 schools, 1490 teachers with a sample of 302, in line with

Krejcie and Morgan (1970) principles of sample selection, in the local government area. The research covered those schools in order to get the opinion of the teachers on allowing students/children engaging in activities with smart phones at both school and home.

The year in focus, 2018 had about 103,028 pupil's enrolment at pre-primary and primary levels with 51465 Males and 51563 Females. The class size versus the teacher was 1:69. Vast information used here was obtained from the Department of Local Education Authority, Katsina Local Government Area. A structured questionnaire for the teachers of the selected schools based on four points (4-points) rating scale of Strongly Agreed (SA=4), Agree (A=3), Disagree (D=2) to Strongly Disagree (SD=1) was used. The use of 4-points rating scale is supported by the advice giving by Emaikwu (2013), which said that the use of Undecided (U) in a five point rating scale could cause problem and confusion since the position of the respondent is never clear. A bench mark or decision mean of 2.50 was used to establish acceptability or rejection of response. Also, a standard deviation using SPSS was calculated to help the research in vindicating the level at which the responses deviate from the normal mean of 2.50. The questionnaire was distributed to the teachers through the Headmasters during classes in order to avoid any loss whatsoever and a successful retrieval was recorded. The data on the demography of the respondents was analysed using the frequency and percentages. A total of three hundred and two (302) questionnaires were randomly administered to staff (teaching staff) with a response rate of 100 percent obtained from the retrieved questionnaires and analysed using Likert scale rating system, mean and standard deviation.

Results

Table 1: Demography of the Respondents

VARIABLES	FREQ. OF RESPONDENTS	PERCENTAGE (%)
1. **GENDER**		
Male	101	33.44
Female	201	66.56
2. **MARITAL STATUS**		
Single	5	1.66
Married	297	98.34
3. **NATURE OF JOB**		
Permanent	290	66.67
Contract (Ad hoc Appointment)	12	33.33
4. QUALIFICATION		
B. Ed	20	6.62
N.C.E.	282	93.38
YEARS OF TEACHING EXPERIENCE		
1-5 Years	75	24.83
5-10 Years	227	75.17
5. ACCESSIBILITY AND HELD ICT DEVICES		
Regularly	300	99.34
Irregularly	2	0.66
TOTAL	**302**	**100**

Source: Field Study, 2018

Table 1 show that the population of female (66.56%) staff is bigger than the male (33.33%). It is evident that female teachers have more commitment to the pupils than the males. Also, the majority of the respondents are married as such seen to be more responsible. The majority of the staffs are permanent

in nature (66.67%), and they regularly access and utilise handheld devices (99.34)which means they understand the benefits of the smart-phone devices. In terms of qualifications, majority of the responded were found to be NCE holders which call for qualification upgrade in order to fill the gap created as a result of low Bachelor's degree holders.

Table 2:

How can smartphones help to achieve literacy, pronunciation and numeracy skills by pre-primary school pupils?

Variables	**N**	**Mean**	**Std. Deviation**	**Remarks/Decision**
ITEM1	302	1.64	0.62	Disagree
ITEM2	302	1.61	0.49	Disagree
ITEM3	302	1.76	0.76	Disagree
ITEM4	302	1.50	0.50	Disagree
ITEM5	302	1.75	0.75	Disagree
ITEM6	302	2.18	1.07	Disagree
ITEM7	302	1.51	0.62	Disagree
ITEM8	302	3.05	0.84	Agree
ITEM9	302	1.79	0.81	Disagree
ITEM10	302	2.71	0.96	Agree
ITEM11	302	1.57	0.63	Disagree
ITEM12	302	2.91	0.89	Agree
ITEM13	302	3.01	0.79	Agree
ITEM14	302	2.93	0.91	Agree
Cumulative mean	**2.14**			
Decision mean	**2.50**			

Discussion of Findings

From the findings of the research the it is disagreed that Nigerian Primary Education is an ICT and technology compliant (ITEM1) as such there is inadequate or none existence of ICT centre(s) where young learners access those resources. This is consistent with the findings of Iboro (2016), who asserted "that social studies teachers show noncompliance attitudes towards ICT, measured in terms of acceptance of ICT training, and accessing ICT resources". On the home background, it is likely to play a role on the pupil's intellectual development. Furthermore, the research found that teachers do not support allowing children to access smartphones anytime they like instead it should be controlled for proper up-bringing. The opinion above may be similar to that of other parents who care much about the negative roles such type of media play in the life of today's children. It is also disagreed to availing pupils or children with portable ICT devices such as the smart phones (ITEM7) which link users with the global community. Most of the fear is that it could lead to exposure of the child to unwarranted and violent sites, also it could lead to decay of minds which could affect intelligence as a result of less-useful game addictions, it is a confirmation of the verdicts projected by Unwin (2017). No age limit was accepted for the children to be allowed access to such devices but if it is for educational purpose most respondents do accepts that because of other belief that it can help the child to think independently which could help n future by making the child independent problem solution expert (ITEM8). Despite the rejections in some quota, still the respondent (ITEM10) agreed that there are vital components in the smart phone which can facilitate child's learning abilities and Teachers can be able to utilize smartphones to display and explain concepts to students. Some concepts that are abstract may simply be displayed to the children in a more fashionable manner and could arouse their interest to education. The results additionally expatiated that public primary school pupils are not adequately prepared for the challenges of the 21st century in spite of their abilities to manipulate smartphones which helps students in their homework. And in keeping in touch and locating the child's whereabouts and for playtime which call for painstaking efforts by all so that the future will be a great one.

Conclusion

Based on the raised objective and research question, the study was able to discover that the advantages of allowing pupils to have access to smartphones far exceed the disadvantages of disallowing them as such proposed that it is not a wise idea to leave a pre-primary school pupils with smartphones unchecked rather it should be monitored. It is through the monitoring that the confidence of students would will be lifted higher thus effectively enabling them to tap more benefits from the use of smartphones. Researches across the globe have indicated that the use of smartphones or modern ICT resources, play a valuable role on basic learning, peer-to-peer learning calculations and home-to-school communications, which help in the development of the young learners. This was supported by Resilient Educator (2020) which adduced why smartphones should be allowed in schools thus, it allowed students learn in a way they are comfortable. It enables students to get answer quickly. Also, audio and video can bring learning to life. It allows access to educational apps. And smartphones allow for social learning. With these and other literatures, smartphones could be attributed to be an important tool for preparing pupils on the challenges of learning new things ahead.

Recommendations

Based on the findings so far, the study recommends that:

Teachers and parents need proper orientation through PTA meetings and other seminars, on the importance of allowing pupils an access to smartphone devices so that those incorporated useful sites or applications could be used to strengthen their ability in identifying living and non-living objects, as well as numbers, and pronunciation, etc all through monitoring at both homes and schools.

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