PERCEPTION OF SECONDARY SCHOOL TEACHERS ON UTILIZATION OF MOBILE APPLICATIONS FOR INSTRUCION IN MINNA METROPOLIS.

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2018/3/74350BT

A RESEARCH PROJECT SUMMITED TO THE DEPARTMENT OF EDUCATIONAL TECHNOLOGY FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE. IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF TECHNOLOGY (B. TECH) IN EDUCATRIONAL TECHNOLOGY

APRIL, 2023

ABSTRACT

This study examined perception of secondary school teachers on utilization of Mobile applications for instruction in Minna metropolis. The specific purpose of the study was to:(i) Examine the mobile applications teachers utilizes, (ii) Determine secondary school teachers' perception on utilization of mobile Application for instruction, (iii) Examine the influence of gender on secondary school teachers' perception on utilization of mobile Application for instruction, and (iv) Determine the influence of experience on secondary school teachers' perception on utilization of mobile Application for instruction.

The descriptive survey method was adopted for the study. The population consisted of all teachers in Minna metropolis. A total of 150 respondents (teachers) were drawn from the population using random sampling technique. The researcher structured questionnaire was used to gather data. The reliability level of the instrument was established through test re-test method using Pearson Product Moment Correlation. A correlation coefficient of .70r was obtained. The instrument was administered by the researcher and two trained research assistants. The data collected were analyzed using both percentage, frequency inferential statistics of chi-square and regression analysis to test the corresponding hypotheses set for the study at 0.05 alpha level of significance.

The findings from this study revealed that:

Teachers' perception on the use of mobile App for teaching in Minna metropolis is positive.

There is significance difference between teachers' perception in Various Secondary Schools on the Use of Mobile Application for learning in Minna Metropolis

There is no significant difference between experienced and less experienced teachers in their perception on the use of mobile App for teaching

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Education in the 21st is that which students require skills to enable them succeed in the new world, and also have confidence to practice these skills. These skills involve communication and collaboration among learners. García, and Kleifgen, (2018) posited that the ability to think critically and creatively, to collaborate, and to communicate clearly among peers give room for successful career life and opportunities to lead effectively.

The world had changed, thus, in order to prepare young mind for 21st century Education, teachers and administrators need to cultivate and maintain the student's interest in the instructional material by showing how knowledge applies in the real world. Teachers should also try to increase student's curiosity, which will help in becoming a lifelong learner. flexibility on how to teach and give learners the resources to continue learning outside of school should also be visible. Sir ken Robinson (2017)

Kesh Rana & Karna Rana (2020) defined Information communication and technologies (ICTs) have become commonplace entities in all aspects of life. Adaptability, complex communication, skills, non-routine, problem solving, self-management, and systems-thinking are essential skills in the 21st century workforce. Susan Rundell Singer (2020). According to Lynne Munson (2018) defined 21stcentury learning as 20th (or even 19th) century learning but with better tools. Students in the

contemporary world are fortunate to have powerful learning tools at their disposal and even create knowledge much more quickly than their predecessors. Students in the 21st century learn in a classroom and it's not necessarily within four walls. Finding information by accessing the internet through cellphones, or chatting with friends on a social networking site are more inclined. Similarly, many teachers are monitoring and issuing assignments via virtual classrooms. Keith Moore October (2018).

Information Communication and Technology (ICTs) can be defined as a diverse set of technological instruments and resources used to communicate, to create, disseminate, store, and manage information (Meenakshi, 2019). ICT permeates the business environment, it under pins the success of modern corporations, and it provides governments with an efficient infrastructure. At the same time, ICT adds value to the processes of learning, and in the organization and management of learning institutions. Meenakshi (2018) and Curtin (2020) defined ICT as a set of activities that facilitate electronic means, the capturing, storage, processing, transmission and display of information. ICT equally opined by United Nations Development Program (UNDP) as information handling tools; a varied set of goods, applications and services that are to produce, store, and process, distribute and exchange information (Gabriel, 2017).

Euridice (2020) stated that Information Communication and Technology (ICT) is the technology used for handling information, including multimedia, internet, and devices such as camera,video and mobile telephone. ICT is transferring to Personal Computer (PC) or laptop, with many potential functions and uses, and attached to the internet which provides access to large quality of information and enables the PC to be used as

a communication medium. ICT includes other devices such as digital still cameras, video cameras and others, which are used in education and mobile telephones seemingly best known in education for their nuisance value

ICT tends to expand access to education. Through ICT, learning can occur anytime and anywhere. Online course materials, for example, can be accessible twenty four hours a day 7days a week. Teleconferencing classrooms allow both learner and teacher to interact simultaneously with ease and convenience. Based on ICT, learning and teaching no longer depend exclusively on printed materials, Jo Shan Fu (2018). Multiple resources are abundant on the internet, and knowledge can be acquired through video clips, audio sounds, visual presentation and among others. Current research has indicated that ICT assists in transforming teaching environment into a learner-centered one (Castro,Sánchez&Alemán2019).

However, Information Communication and Technology (ICT) is the combination of the potentials of computer telecommunication and electronic media using the digital technology. ICT has impacted positively on every aspect of human existence, thereby creating a powerful force for changes in how human beings live, convey information, processing formation, and conduct business, and in fact, determined the status of the nations. Information technology has potential not only in introducing new teaching and learning practices, but also for acting as a catalyst to revolution in the education system. It can be a power teachers to learners and promote the growth of skills necessary for 21st century workplace (Tricano, 2020).

Mobile application is a form of technology that is mostly used in cellular communication and other related aspects. It uses a form of platform where by many transmitters have the ability to send data at the same time on a single channel. This platform is called Code Division Multiple Access (CDMA). The platform allows many users to make use of single frequencies because it restricts the likelihood of interference of frequencies from two or more sources. The mobile technology is rapidly evolving over the years, its uses are becoming diverse and gradually replacing some similar sources in the market that are also used for communication e.g. post office and lines. Adewa- Oguiebgen and Iyamu(2020).

The mobile application has improved from simple device use for phone call and messaging into a multi-tasking device use for GPS navigation, internet browsing, gaming and instant messaging tool. professionals argue with the trend that the future of computer technology is rest on wireless networking and mobile computing. Mobile technology through tablets and portable computers are becoming more and more popular. When the mobile was first introduced, it used to be basically for SMS, calls and games. However, it has made life, business and education much easier. Mobile allows transfer of files through Bluetooth and Wi-Fi. Urvish Macwan (2017).

Mobile application allows form or effective way to increase student involvement and build better interaction skills. Learners who hardly ever raise a hand in class may feel more comfortable on mobile applications like Face book, Twitter, or YouTube among others. These applications enable instructors to identify “backchannels” that promote conversation and surface ideas that students are too shy or nervous to speak out in

class. Today's students arrive at school, fluent in Web and social networking technologies. Teachers can make use of this knowledge to enhance opportunities to learn. With social media, teachers can promote cooperation and discussion, create meaningful conversation, exchange ideas, and boost student interaction (David, 2019).

As educators look for ways to engage and motivate students, social media technologies are becoming a viable supplement to the traditional learning environment (Ebner,Lienhardt, Rohs, &Meyer, 2020). Also, educators are examining the combination of distance education delivery with instructional mobile application, thus, providing new approaches to teaching and learning that blend pedagogy and technology (Brady, Holcomb, &Smith, 2020; Lee & McLoughlin, 2020; Veletsianos & Navarrete, 2019).

In addition, mobile applications have the capability to improve interaction among learners and teachers. Teachers can respond to students' questions, post home work assignments and lesson plans, send messages and updates, schedule or announce upcoming event, and share interesting Websites and multimedia content. Students can use mobile applications to get help from teachers or other students. A great way for teachers to give participation points in addition to classroom participation is by having students tweet about something that was discussed in class. Students entering the work force can use mobile application sites to network and find employment. With mobile applications, older students can establish a professional web presence, post a resume, research a target company or school, and connect with other job seekers and employers. Career centers

and alumni associations are using mobile applications to broad cast job openings and internships. Students should follow businesses or professional organizations on mobile applications to stay updated on new opportunities and important developments in their field (Mathias, 2019).

1.2 Statement of the Research Problem

Mobile applications and technologies are becoming a viable supplement to the traditional learning environment (Ebner, Lienhardt, Rohs, & Meyer, 2020). Also, teachers are examining the combination of distance education delivery with instructional mobile app,thus, providing new approaches to teaching and learning that blend pedagogy and technology Brady, Holcomb, & Smith, (2020), Lee &McLoughlin, (2020),Veletsianos&Navarrete, (2019).

Most of the earlier studies focused on Teachers' readiness to use mobile applications for teaching in schools. Among these, Yusuf (2017) investigated the Readiness of teachers to the use of mobile app for teaching students and pupils in Minna metropolis, Nigeria. The study, therefore, seeking to determine the perception of secondary school teachers on the use of mobile app for instruction in Minna metropolis, Nigeria. Also, the study will consider the gender and instruction experience of teachers as it affects their perception on the use of mobile application for instruction in Minna metropolis.

1.3 Significance of the Study

The result of the study would be of great benefits and relevant to; teachers, future researchers, Government, curriculum developers and planners, ICT providers, private and public school owners, students and parents.

Teachers would immensely benefit from this study by being enlightened on the relevance of improving the quality of instruction delivery in classroom and ways to improve their teaching abilities most especially in using ICT tools in the teaching and learning process. Teachers most especially could also see the need to go for knowledge and change their perception about the use of these tools, they could also be aware that these tools make their teaching job easier and not as the teachers' replacement. Researchers might benefit immensely from the outcome of this study because it would add to the pool of information that is already in existence in this area. And researcher might consequently fall back on information gathered here by repeating this study in another setting and environment.

The outcome of this study would also guide policy-makers, stakeholders, and decision makers to make well-informed resolutions about policies and investment in ICT with respect to education at the secondary school level by gaining more understanding into the perception of teachers in line with the use of available ICT tools in knowledge delivery in the classroom.

Finally, the knowledge gain from this study would enable parents and Non-Governmental Organization (NGOs) to consider investment in ICT as a priority for timely and efficient delivery of services. Ministries of Eduction and curriculum planners could be guided as to what to be considered relevance for addition in the

curriculum. Periodic assessment might be viewed necessary to be carried out on effective use of various mobile application

1.4 Aim and Objectives

The main purpose of the study was to examine the perception of secondary school teachers on utilization of Mobile applications for instruction in Minna metropolis. Specifically, the study examined;

i. Examine the mobile applications teachers utilizes
ii. Determine secondary school teachers' perception on utilization of mobile Application for instruction.
iii. Examine the influence of gender on secondary school teachers' perception on utilization of mobile Application for instruction.
iv. Determine the influence of experience on secondary school teachers' perception on utilization of mobile Application for instruction.

1.5 Research Questions

The study provided answer to the following research questions:

i. What is the perception of teachers on the utilization of mobile application for instruction?

ii. What is the influence of gender on secondary school teachers' perception on the utilization of mobile application for instruction?

iii. What is the influence of experience of secondary school teachers' perception on the utilization of mobile application?

1.6 Research Hypotheses

The following research hypotheses will be tested at 0.05 level of significance.

Ho1: There is no significant difference between male and female secondary school teacher's perception in various secondary schools on the use of mobile Application for teaching in Minna metropolis, Nigeria.

Ho2: There is no significant difference between experienced and less experienced secondary school teachers' perception on the utilization of mobile Application for instruction

1.7 Scope of the Study

Perception of secondary school teachers on utilization of mobile applications for instruction in minna metropolis This study was carried out in Minna, Niger State, in which teachers across the secondary schools in the city participated. This was due to the fact that teachers in these schools have access to mobile Application in one way or the other which makes it possible for integration into teaching and learning processes.

Mobile application such as, Edmodo, Google classroom, Telegram, Google form were used in the study. The scope of this study was on Perception of Secondary School Teachers on the Use of mobile application for instruction in Minna Metropolis, Niger State, investigate the type of mobile application frequently use by teachers, the amount of time and interest they put into it and how positively mobile application can improve instruction, all these was used to gather information on the relationship among the variables that were stated in the study (perception, frequency of use,). Personal attributes such as experience is included, but this study shall be limited to secondary schools in Minna metropolis, Nigeria.

1.8 Clarification of Major Terms and Variables

The following terms and variables are operationally defined for this study.

Mobile application: mobile app is a software application developed specifically for use on small, wireless computing, such as smartphones and tablets, rather than desktop or laptop computers.

Experienced Teachers: Teachers with teaching experience of above five years

Less-experienced Teachers: Teachers with less than five years of experience

Perception: It connotes teachers' understanding on the use of mobile app for teaching

Influence: It cannot teachers' power to affect the use of mobile App for teaching

CHAPTER TWO

2.0 LITERATURE REVIEW

This research is reviewing previous researchers that has been done that which examines the perception of secondary school teacher on utilization of mobile application for utilization. Numerous research pieces were examined. Throughout existing years, various studies were taken to investigate whether or not there is positive or negative outcome on teachers utilization.

Thus, this chapter therefore focuses on reviewing related literatures to this study, which throws more light on the problem under investigation. It is categorized into these sections;

- Conceptual framework
- Theoretical framework

- Empirical studies
- Summary of literature review

2.1 Conceptual Framework

In the conceptual framework, the researcher desires that it is necessary to explain some relevant terms in the topic under investigation. Which are as follows:

2.1.1 Concept of mobile application in Education

Aaron Davies(2019) defines mobile application or mobile app as software program that is designed to run on a mobile device such as a smart phone or tablet. These are individual software units that are coded to perform a particular function. Now-a-days, mobile application development have become quite an important part in most of the domains like healthcare, education, government, manufacturing, real estate, banking and financial and what not. An educational mobile app is a mobile application software that facilitate learning for students. It is very much preferred among the students in the contemporary world. Educational mobile apps are of added advantage to students as they help a student to learn anytime, anywhere.

This is the era of digital transformation, where anything and everything is powered with mobility. Mobility solutions, have simplified our daily lives, enabling ease and convenience. Everything from grocery to flight tickets is at our figure tips. Over the years, technology is influencing significantly on children and education sector. The advancement of technology has made it possible for every individual to access any type of content over the internet enabled mobile devices (Jimmie Williams, 2018).

Mobile application tools are rapidly changing the communications landscape. The emergence of mobile applications has impacted significantly how learners learn and the way teachers teach. In today higher education settings, instructors, students, and others join together on the tasks of knowledge construction (Charles, 2019). The task of knowledge construction is thus being shared among the teachers, students, and other individuals who share an interest for the subject (Charles, 2019).

As educators look for ways to engage and motivate students, mobile technologies are becoming a viable supplement to the traditional learning environment (Ebner, Lienhardt, Rohs, &Meyer, 2020).Also, educators are examining the combination of distance education delivery with instructional mobile application, thus, providing new approaches to teaching and learning that blend pedagogy and technology (Brady, Holcomb, &Smith, 2020; Lee & McLoughlin, 2020; Veletsianos and Navarrete, 2019).

Today's college students are exposed to all types of technologies in many aspects of their lives. On a daily basis they use desktop computers, laptops, e-readers, tablets, and cell phones to actively engage in social networking, text messaging, blogging, content sharing, online learning, and much more. As documented in recent research, students and faculty are using these emerging technologies and platforms in all facets of their daily lives, specifically social media; yet, allow percentage of users are engaging in such for academic practice (Guy, 2019).

Mobile technologies offer the capability to both receive and create content with the hope that a collective intelligence emerges. The goal is to improve students' learning

experiences to prepare them to enter a workforce that is not geographically constrained and expects them to have highly developed online collaboration skills. The pursuit of such benefits drives academics to incorporate new technological approaches in their teaching methodology (Walkyria Goode and Guido Caicedo, 2020). The new technologies that are changing the way instructors teach and students learn include the following: Weblogs. Weblogs or blogs, as they are known, are easily created and updateable websites that allow authors to publish to the Internet instantly, thus allowing instructors and students to communicate easily (Yusuf, 2017).

Instructional mobile application has impacted significantly how students learn and the way instructors teach. In today higher education settings, instructors, students, and others collaborate on the tasks of knowledge construction (Charles, 2019). The task of knowledge construction is thus being shared among the instructor, students, and other individuals who share an interest for the subject (Charles, 2019).

Teachers maintain that resources like Face book and Twitter to divert students' attention away from what's happening in the class and can disrupt the learning process. A common issue among teachers is that social media is distracting in the classroom. With the possibility that the use of social media tools can be an invitation for students to play truant, teachers should make sure they won't be abused. Teachers who use social media as part of their teaching should be wary of possible risks and plan to intervene on minor incidents before they become more serious Ultimately, while the debate continues over what role social media should play in the classroom,

no one can argue the influence that social networking has on today's students. This tech-savvy generation conducts much of their life through social media channels. Not surprisingly, they're already using YouTube, Facebook, and Twitter as tools for learning and collaboration. They expect that the education will follow suit. With this in mind, it seems prudent for today's institutions to get on the social media train and find ways to successfully integrate these tools into the classroom (Mathias, 2019).

Mobile application is creating more interactive and dynamic experiences for students. Mobile application improved interaction and high engagement in educational system, students failing to engage with teachers or textbooks are likely to take more time to learn with various games like word formation, spot the difference and puzzles. These give children an opportunity to unleash creativity.

These educational application encourage systematic learning and allow students to learn with a new perspective and explore interest at own pace. Most education apps keep everything arranged and maintain a certain flow that students can follow with excitement and curiosity. Also these apps also allow educators to expand their reach and connect with students worldwide. Contributed content by Nirav Shastri (2019).

2.1.2 Potentials and Use of Mobile Application

Instructional mobile applications improve communication among learners and teachers. For example, Telegram, Google classroom and Edmodo can be used to improve interaction among learners and teachers. Teachers can respond to students' questions via a Telegram page or google classroom, post homework, assignments and lesson plans, send

messages and updates, schedule or announce upcoming events, and share interesting Websites and multimedia content. Students can use Telegram to get help from teachers or other students. A great way for teachers to give participation points in addition to class participation is by collaborating with students about something that was discussed in class (Mathias, 2019).

Mobile application constitutes an increasingly important context wherein individuals live their everyday lives. Indeed, some commentators' talk of the networked self, acknowledging the importance of mobile application as a key site of sociality and identity performance in many people's lives (Papacharissi, 2020). As such, the most immediate significance of mobile application for higher education is the apparently changing nature of the students who are entering university. In a practical sense, the highly connected, collective and creative qualities of mobile applications are seen to reflect (and to some extent drive) more flexible, fluid and accelerated ways of being. Mobile applications are therefore associated with an increased tendency for young people to multitask, to rely on a 'digital juggling' of daily activities and commitments (Subrahmanyam & Smahel, 2019). More subtly, these technologies are also associated with an enhanced social autonomy with young people now used to having increased control over the nature and form of what they do, as well as where, when and how they do it. Indeed, mobile application users are described as having an enhanced capacity to self-organize and provide for themselves (Yusuf, 2017).

A great way for teachers to give participation points in addition to classroom participation is by having students collaborate about something that was discussed in

class. Students entering the work force can use social networking sites to network and find employment. With LinkedIn, older students can establish a professional web presence, post a resume, research a target company or school, and connect with other job seekers and employers.

Higher education institutions competing for attracting students seem to be interested in the potential of the mobile application as part of communication and recruitment strategies. Understanding how future students use the Mobile application as part of daily life and as information sources forms the basis for the development of effective recruitment strategies based on these applications (Marc & Zinck, 2020). The use of mobile application implies, for example, that learners should be 'active co-producers' of knowledge rather than 'passive consumers' of content, and that learning should be a 'participatory, social process' supporting personal life goals and needs (Lee &McLoughlin, 2020).

In 2019, Facebook was the most frequently visited website, attracting an audience world wide of 606 million, and almost half of the Australian population were reported to be active users (Ryan&Xenos,2019).Social media generates great interest as much from the virtual friend as from the educator. There is a growing body of evidence (e.g. Cheung & Lee2020) suggesting that Web 2.0 and social networking have the potential to increase social connectedness and that students—secondary and university—spend a great deal of time plugged into all manner of internet services (George & Antoinette, 2019).

The challenge for teachers is how to use social media which is, after all, social to enhance learning outcomes. The use of online social networks in educational process has been supported by numerous educational technology researchers, who have highlighted the benefits of participatory technologies in adult education settings (Lee, McLoughlin,2020; Veletsianos,2019). For instance, Lee, McLoughlin (2020) suggest that online social networks enable learners and teachers to present themselves socially in an online environment and connect with one an other and this enables learners to participate in a group learning process. However, Veletsianos (2019) emphasizes that technological innovations need to be accompanied by didactical enhancements for technology-rich interventions to be successful. Researchers also recommend examining which course delivery format fits particular didactical approaches (Tallent-Runnels etal., 2019).

Students can easily access information and courses related to their study through YouTube. Utilizing this service is free and it connects students to larger communities of people with similar interests. It is in such environments that the individual student or groups of students can decide what they want to discuss and who they want to work with to achieve their educational goals.

Many studies investigating Facebook (e.g. Roblyeretal. 2020) concentrate on enhancing student outcomes, ability to demonstrate understanding of the unit material, for example, and developing student-centered practices learners constructing knowledge for themselves—for a day (or on- campus) cohort. Facebook seems to be

privileged as the social site to which educators turn to develop social connectedness with their students. As such, it is an adjunct to presumed face- to- face teaching, enhancing inks built in a physical or actual place (Roblyer2020). Thus, the sense of community being formed through Facebook is enacted on and offline. Although many studies identify great potential for the widening of student networks, more recent studies (e.g. Subrahmanyam. 2018) have suggested that, infact, a student's Facebook community is limited (with rare exception) to pre-established peer-groups. Thus, the friend son- line are known off-line (George & Antoinette, 2018).

Wikis are another kind of service which allows information sharing through building of a corpus of knowledge within a set of inter linked web pages .A wikis software for creating and editing inter linked web pages is one of the more popular wiki applications, with its reputation for ease of use and varied pricing models, from free to Private Label. Wikis promote collaborative learning and information sharing because any one with rights can add content to the system. There are a number of educational institutions that have utilized the wikis system to assist their students to work together in order to interpret texts, to author articles and essays, to improve their research and communication skills and to share ideas collectively (Liu, 2020).

Lee, McLoughlin (2020) also propose that the inherent design of social media supports the development of learner self- directedness, a capability that is essential in preparing life long learners for the complexities of today's workforce. Social media also brings with it the freedom for learners to connect and collaborate outside of

institutional boundaries, as well as to gain practical experience for the work force. By using social media, learners also have an opportunity to manage their own learning environments and thus become more independent, life long learners (Rahimi,vandenBergand Veen 2019).

Online communities a real so helping the students in education. These provide instant communications between the members. The Connected Educators research, supports and extends earlier findings that suggest that active participation in online communities of practice can produce significant value for educators, students, schools, and district. The members in the online communities help other members with their knowledge by answering the questions to the other members (Sreeja&Jithin, 2019).

2.1.3 The Use of mobile applications in Secondary School Classroom

Several educators welcome mobile application into the classroom because of many benefits that technology tools and instructional mobile application offer to students (Marwick, 2018). Smith (2018) wrote that most schools have banned students from using smart phones. However, progressive educators claimed that banning smartphones from the classroom represents a major disconnect with the world that awaits students outside the school walls (Smith, 2019; cited by Johnson 2018). Educators also claimed that use of smart phones enabled learners to see how social network can influence the school activities and gave learners a real-world perspective of how to collaborate and remain engaged in the classroom and learning activities

(Franklin, 2019). Educators promoted and embraced smart phones because it did not replace the existing curriculum, but rather transformed it (Matei, 2020).

After utilizing a wide variety of face-to-face traditional teaching methods, it is time to integrate technology into teaching to enhance teaching and learning (Nilson, 2020). This approach of integration of technology and mobile application in secondary schools seems to be less argumentative and confrontational. Rather, it presents a common denominator to remove or refine major real or perceived dangers of integrating mobile learning into teaching and learning. Inherent in the statement is that technology is ubiquitous, universal, and futuristic and must be worked somehow into the present scheme of educating students (Johnson, 2018).

Redecker, Ala-Mutka, and Punie (2020) as cited by Johnson (2019) asserted that smart mobile phones offer a broad variety of versatile tools which address different channels and involve learners more actively in constructing their own learning process, allowing more effective learning strategies to be implemented. One not-so obvious advantage is that social networking media can actively support lifelong learning.

This is accomplished by offering accessible, flexible, and dynamic learning environments that can both complement and supplement initial learning (Williams, 2019). The evolving world of Internet communication is of much interest to researchers.

2.1.4 Teachers' Perception on the use of Mobile Application for Teaching

Teachers' Perception on the use of mobile application based learning for teaching is based on planning, adequacy and teaching methodology of the teachers and supply and reserve of support service or systems to enhance the use of mobile application for teaching.

Merely introducing new practices, such as using mobile application for instruction, does not automatically ensure they are successful. Research has been conducted into the introduction of digital technology and ICT within educational environments, and they perceived benefits and barriers to the success (Coleman, 2019; Livingstone, 2019; Perrotta, 2019). While some educators believe that ICT or technology has many benefits for learners, there are also others who are reluctant to incorporate it into their teaching methodology. This indicates that some teachers are more adaptable and ready for change than others or, as Lloyd and Yelland (2020) found, some teachers, when faced with the introduction of new technology, can display coping behaviors best defined as "adaptation" or "avoidance." How ready teachers are, within an organization, to embrace and incorporate change by introducing new technology, can impact student engagement (Yusuf, 2017).

Some researchers assert that the use of social media and smart cell phones is both the current and future mode of communication and that teachers would do well to embrace these technology tools in the classroom, maintaining correct use of the social media networking, or digital citizenship (Smith, 2017). Other researchers maintain that social media networking through mobile devices promotes use of abbreviations, shortcuts, idioms and slang through chat acronyms (Johnson, 2018). Social media networking

can inspire students to manipulate language and can also encourage student engagement in the classroom (Kolb, 2020).

2.2 Theoretical Framework

A large number of studies have explored factors that influence human attitudes toward using and accepting new technologies. Researchers have employed well-established theory's and theories to undertake increasingly in-depth investigations. This includes the theory of reasoned action (TRA) by Ajzenand Madden (2019); the technology acceptance theory (TAM), which was put forward by (Davis ,2019); Ajzen's theory of planned behavior (TPB), (Ajzen, 2019) and the unified theory of acceptance and use of technology (UTAUT), put forth by Venkatesh(2019). Huetand Tcheng (2020) explained the acceptance of m-learning and integrated TAM using perceived enjoyment from the motivational theory, and perceived mobility value, as external variables of perceived usefulness. The study found that perceived usefulness and perceived ease of use positively influence students' attitudes toward m-learning. Wei-Han Tan (2019) developed a conceptual theory to examine factors that affect intentions to adopt mobile related learning in Malaysia. The findings indicated that perceived usefulness, perceived ease of use, and subjective norms can affect one's intention to use mobile learning; gender factors did not appear to show any effects on M-learning usage.

Further, Wang (2020) extended the UTAUT theory by including perceived playfulness, which is the individual's tendency to interact with the computers, and self-management of learning. The results showed that performance expectancy, effort expectancy, social influence, perceived playfulness and self-management of learning all had effects on behavioral intention to use mobile learning. Moreover, they also found that age differences moderate the effects of effort expectancy and social influence on using mobile learning, and that gender differences moderate the effects of social influence and self-management of using m-learning.

In addition, Jairak. (2019) focused on assessing the acceptance of m-learning in higher education. The results show that only effort expectations and social influences affect students' intention to use m-learning. They also found that performance expectations, effort expectation, and social influences affect the attitudes of students regarding mobile learning. Kamaruzaman and Zainol (2019) focused on behavioral responses among secondary school students. The authors of the study developed a mobile learning application to teach English. They found that this technology can improve the encouragement and performance of students when they learn English through the use of mobile devices. They also found that the functionality of the m-learning application used, the layout design, the content, and personal motivation all influence behavior positively Shams(2019) explored the factors that influence the behavior of learners towards the use of m-learning applications.

However, the result of this study showed the important relationship between the utility of m-learning, ease in m-learning, and self-management of the learner, and behavior towards the actual use of m-learning applications. The usability of mobile learning applications includes some features that differ from other computer systems. These include the mobile context, connectivity, screen size, and different display resolutions. These features can influence usability factors such as effectiveness, efficiency, satisfaction, learn ability, memorability, errors, and the cognitive load Harrison,(2018). Another factor that is affected by m-learning applications is learner performance. A study by Vogel.(2017) aimed to explore the impact on learning performance. The results of this study showed positive support for learner performance enhancement, with support for constructive alignment as a moderate variable for students who use m-learning technology.

Moreover, an experiment by Hamdan and Ben-Chabane (2019) discussed how to improve students' personal skills and performance by using mobile learning applications. They performed the experiment with IT students at UAE University. They found that using mobile learning technology can improve student performance in the educational process. In addition, user satisfaction is influenced by many environmental and individual factors. A study by Hassan in (2020) focused only on factors facilitating student satisfaction with mobile learning. The study presented a theory of student satisfaction with mobile learning, showing that both external and

internal facilitating factors associated with the mobile learner can influence students' satisfaction with this technology.

2.2.1 Information and Communication Technology in Education

Information and Communication Technologies (ICT) have become common place entities in all aspects of life, especially more so in learning. Across the past twenty years the use of ICT has fundamentally changed the procedures and practices of nearly all forms of endeavor within business and governance. The integration of ICT in education lends itself to more student-centered learning settings. But with the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more essential and this will continue to grow and develop in the 21st century (Noor-Ul-Amin, 2020; cited by Yusuf, 2017).

As Brush, Glazewski and Hew (2018) have stated, ICT is used as a tool for students to discover learning topics, solve problems, and provide solutions to the problems in the learning process. ICT makes knowledge acquisition more accessible, and concepts in learning areas are understood while engaging students in the application of ICT (Jo, 2019).

Watts-Taffe. (2019) found that teachers can act as catalysts for the integration of technology through ICT. If the encouragement, equipment, and necessary technological support are available from institutes for the teachers, developing an ICT class will be easier for them. The main responsibilities of these teachers will be changing their course format, creating and explaining the new assignments, and

arranging for the computer lab through their technology- learning specialists or assistants. In sum, as Reid (2020) has indicated, ICT offers students more time to explore beyond the mechanics of course content allowing them to better understand concepts. The use of ICT also changes the teaching and learning relationship. Based on the findings of Reid's study, teachers reported that the relationship between teacher and learners sometimes reversed with regards to information technology. This relationship boosts students' confidence when they are able to help teachers with technical issues in the classroom. Therefore, ICT changes the traditional teacher- centered approach, and requires teachers to be more creative in customizing and adapting to materials. While ICT is changing teaching and learning for the better in several ways, the existing literature has also identified some barriers. In the following sections, these barriers are classified into four categories based on the perspectives of students, teachers, administrators, and ICT infrastructure (Jo, 2019).

The main purpose of the Strategy for Information and Communication Technology Implementation in Education is to provide the prospects and trends of integrating information and communication technology (ICT) into the general educational activities. There are some unavoidable fact in the modern education; first, the ICT has been developing very rapidly nowadays Therefore, in order to balance it, the whole educational system should be reformed and ICT should be integrated into educational activities. Second, the influence of ICT, especially internet (open source tool) cannot be ignored in our student's lives. So, the learning activities should be reoriented and reformulated, from the manuals our reentered to the open

source ones. In this case the widely use of internet access has been an unavoidable policy that should be anticipated by school's authorities (Meenakshi, 2018).

ICT can be used to prepare the workforce for the information society and the new global economy (Kozma,2020). The use of ICT can improve performance, teaching, administration, and develop relevant skills in the disadvantaged communities (Bottino, 2018 & Sharma, 2019). It also improves the quality of education by facilitating learning by doing, real time conversation, delayed time conversation, directed instruction, self-learning, problem solving, information seeking and analysis, and critical thinking, as well as the ability to communicate, collaborate and learn (Yuen, Law, & Wong, 2020). A great deal of research has proven its benefits to the teaching and learning (Al-Ansari 2018). Hepp, Hinostroza, Laval and Rehbein (2019) state that there are many unsubstantiated claims about the revolutionary potential of ICTs to improve the quality of education. They also note that some claims are now deferred to a near future when hardware will be presumably more affordable and software will become, at last, an effective learning tool (Yusuf, 2017).

Koc (2019) mentioned that using ICT enables students to communicate, share, and work collaboratively anywhere, anytime. For instance, a teleconferencing classroom could invite students around the world to gather together simultaneously for a topic discussion. They may have the opportunity to analyze problems and explore ideas as well as to develop concepts. They may further evaluate ICT learning solutions. Students not only acquire knowledge together, but also share diverse learning

experiences from one another in order to express themselves and reflect on their learning (Jo, 2019).

2.2.2 Empirical Studies

Despite their increased accessibility and interactivity, research on the potential benefit of mobile apps as pedagogical tools in secondary education is largely understudied. We located only a couple of empirical study that investigated the educational value of mobile apps. In this study, Burgess and Murray (2019) compared the use of app-based flashcards and traditional flashcards for studying outside on student exam performance and overall grade point average. According to the researchers, the advantages of the app-based flashcards were that they were portable, immediately accessible, and had the potential to increase study time outside the class across multiple settings. The instructors provided their students with either app-based or traditional flashcards of key terms and corresponding definitions from the course text. Although the use of flashcards increased across exams, Burgess and Murray concluded that this result was mainly due to the use of the traditional, rather than app-based, flashcards.

However, the use of flashcards decreased significantly when the instructor no longer supplied the flashcards (Burgess & Murray, 2019). Furthermore, while the instructor's

learning objective may have been for students to learn vocabulary, both the app-based and the traditional flashcards may also have encouraged a shallow level of processing, in the form of memorization, rather than a deeper and more conceptual level of processing. This explanation could account for the failure to find significant differences in performance across class exams. An article by Smith (2017) provides a framework for using social networking technology in the classroom for learning as well as instruction. The study reminds readers that social networking is not just for podcasts, social blogs, flirting, tags and file swapping. Social genres offer students radically new ways to research, create, engage, and shape the way they learn, similar to various learning styles (Livingstone, 2018). Media-driven knowledge is here to stay and continues to advance each day (Marwick, 2018). The study emphasized the importance of schools' encouraging students to use modern technology since schools should reflect the world in which people live today (Zhang, 2022). Schools must continue to monitor mobile application use by keeping students from wasting time chatting and sneaking into inappropriate sites (Kuloweic, 2019).

Johnson, (2019) investigated 'teachers' perception on the use of mobile application via mobile devices in grades 9-12 classrooms and found out that The majority of the respondents agreed that their students would be likely to participate, engage in class discussions inside and outside class, ask for help, view course work, download mobile applications and participate in discussion forums. While they agreed that mobile devices are valuable tools, they disagreed that students should be able to take quizzes

using their mobile devices. Previous studies by Pollara (2019) focused on college students and college faculty, whereby the majority of students and professors agreed to being quizzed by use of mobile devices. As a result of these positive findings, more schools are rethinking the bans on cell phones (Johnson, 2020).

Teachers perceived that the use of social networking via mobile devices would improve student engagement in learning activities as the mobile devices would motivate the disengaged student by addressing differentiated learning, vary learning styles and promote collaboration in the classroom. The perception of the teachers is that students already know how to download applications, calculate problems, research, email, and text on mobile devices enabling easy access to learning anytime, anywhere (Johnson, 2019).

2.3 Summary of literature review

One major gap in the literary review of this research is the lack of accessible study despite the enormous influence the subject matter contributes to the academic sphere generally. Also, the literary studies have paid a lot of attention to the existing phenomenon of mobile apps usage among schools and have paid little attention to the peculiarity of secondary school students, that is, the positives and negatives impact it has on them.

Researchers suggested that there may be benefits for teachers and learners who use mobile Application properly and appropriately as it has been of help in the delivery of instruction and also in achieving a better grade, researchers also suggested in their

study that there may be clear risks involved when students become too consumed with the Internet and social media. It was discovered that mobile Application are commonly used among students; they engage themselves with one activity or the other on day to day activities.

Also in this chapter, the use of mobile Application in the classroom is discussed and how it has given teachers extra time to teach in classroom and review in the mobile Application. Teachers can now interact with students beyond the classroom wall and students are now motivated to read. Also in this chapter, the gender influence of teachers on the use of mobile App is discussed.

Hence, for the purposes of this research project, the researcher will examine the level at which some teachers rely on the use of mobile Application for teaching, the popular mobile App they are exposed to, how often they use them, and its influence on the delivery of instruction.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the methodology that will use in conducting this research. The chapter contains the following: Research Design, Sample and Sampling Techniques, Research Instrument, Validation of Research Instruments, Procedure for Data Collection and Data Analysis Techniques. This chapter also presents the method and procedures that will use in this study to gather and analyze the data that collected.

3.1 Research Design

The study is a descriptive research of the survey type. This method allowed the researcher to have a description of the perception of teachers on the use of mobile App for teaching. A researcher designed questionnaire was used to collect information from teachers in secondary schools on their perception on the use of mobile applications for teaching in Minna metropolis.

3.2 Population, Sample and Sampling Techniques

The populations for this study comprised of 150 teachers from all Secondary Schools in Minna metropolis. A random sampling technique was used among the schools, where 150 questionnaires were administered to the male and female teachers given the opportunity to participate. Meanwhile, the sample of the study was based only on the selected secondary school teachers in Minna metropolis.

3.3 Research Instrument

The instrument that was used for data collection for this study is questionnaire which was developed by the researcher with the title "Perception of Secondary School

Teachers on the use of mobile App for Instruction in Minna Metropolis, Nigeria" and it contains three sections. Section ‘A’ contains background information on respondent's gender, years of experience in which respondent's response is to thick as appropriate. Section ‘B’ contains table to measure the frequency of the use of social media of the respondent in which respondent’s respond is to thick as appropriate. Section 'C' contains questions seeking information regarding teacher’s perception, response mode shall be Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD).

3.4 Validation of Research Instrument

After the questionnaire had been drafted, the research instrument was given to the researcher’s supervisor and two other lecturers in the department of educational technology, Federal University of Technology Minna to determine the relevance and measure the face validity of the instrument. Also the appropriateness of the questionnaire was chosen in terms of clarity, simplicity and suitability for teachers according to their status. The experts’ suggestions were used to improve the instrument. All corrections made were effected immediately to ensure that the instrument remain valid.

3.5 Procedure for Data Collection

The researcher obtained an introduction letter from the researcher’s supervisor to the selected secondary schools for their cooperation. The researcher visited the teachers in respective schools; sought for cooperation and sincere participation in the study. The

researcher then distributed copies of questionnaire to the teachers. The researcher collected back the copies of the questionnaire after it has been filled and collated it for analysis.

3.6 Data Analysis Techniques

The result of the administered researcher-designed questionnaire was subjected to inferential and descriptive statistics, coded and analyzed using Statistical Package for Social Science (SPSS) version 20.0 for windows. The statistical tests used descriptive analysis involving the percentage for demographic table. Research questions 1 to 4 were analyzed using mean, percentages and t-test for research hypotheses 1 and 2.

CHAPTER FOUR

4.0 RESULT AND DISCUSSION

Introduction

This chapter focuses on the data analysis and interpretation of the gathered research results from respondents via survey questionnaire. Information gathered were statistically analyzed through SPSS to have a scientific interpretation of data. The data were analyzed in a tabular form and interpreted thereafter. The discussion of findings ended the chapter.

4.1 Data Analysis and Presentation

Table 1

Socio-Economic and Utilization of Mobile Application Frequency Distribution of Respondents

Variable		Frequency	Percentage(%)
Gender	Male	73	48.7
	Female	77	51.3
Department	Science	74	49.3
	Social Science	39	26
	Art	37	24.3
Working Experience	<5years	51	34
	6-10years	73	48.7
	>10years	26	17.3

Source: Field Survey, 2021

The above table 1 shows the gender distribution of respondents via questionnaire shared as it reveals that the male respondents were 48.7% while the female respondents were 51.7% of the total respondents. In essence, there were more female respondents in the course of the research compare to male.

Also, it indicates the department frequency distribution of respondents as we have 49.7% of science respondents, 26% of social science respondents and 24% of art respondents who are teachers of the different field of academic departments of the respondents. This illustrate that there are more science department respondents of the research. Lastly, as indicated in the table is the frequency distribution of respondents based on work experience. Teachers who have between 5-10years are most with 48.7% while the least among the respondent are the most experienced who have above

10years working experience with 17.3% of them constituting the respondents number for this research.

Research Question 1: How often Secondary School Teachers Utilizes Mobile Application

Table 2: Respondents Frequency Distribution on Different Mobile Application Utilization

S/N	Variable		Frequency	Perc(%)
	Telegram	Everyday	106	70.7
		Once a Week	24	16.0
		Once a Month	11	7.3
		Never	9	6.0
	Google Classroom	Everyday	92	61.3
		Once a week	35	23.3
		Once a Month	15	10.0
		Never	8	5.3
	Edmodo	Everyday	41	27.3
		Once a Week	44	29.3
		Once a Month	22	14.7
		Never	43	28.7
	Google Meet	Everyday	43	28.7
		Once a Week	44	29.3
		Once a Month	25	16.7
		Never	38	25.3

Google Form	Everyday	29	19.3
	Once a month	43	28.7
	Once a Week	49	32.7
	Never	29	19.3

Source: Field Survey, 2021

The table also indicates the respondents' distribution on the Utilization of telegram mobile application as about 70.7 of respondents use telegram everyday, 16% of respondents utilize it once in a week, 7.3% use telegram once a month and 6% of the respondents never Utilizes telegram. From the above, there is indication that there is more frequency distribution of respondents who Utilizes telegram every day.

The respondents' distribution on the Utilization of Google Classroom mobile application as about 61.3 of respondents Utilizes google classroom everyday, 23.3% of respondents use it once in a week, 10% Utilizes google classroom once a month and 5.3% of the respondents never Utilizes google classroom. From the above, there is indication that there is more frequency distribution of respondents who Utilizes google classroom every day.

It indicates the respondents' distribution on the Utilization of Edmodo mobile application as about 27.3 of respondents Utilizes Edmodo everyday, 29.3% of respondents use it once in a week, 14.7% Utilizes Edmodo once a month and 28.7% of the respondents never Utilizes google classroom. From the above, there is indication that there is more frequency distribution of respondents who Utilizes Edmodo every day.

The above table indicates the respondents' distribution on the Utilization of Google Meet mobile application as about 28.7% of the respondents Utilizes Google Meet every day, 29.3% of respondents use it once in a week, 16.7% Utilizes google meet once a month and 25.3% of the respondents never Utilizes Google Meet. From the above, there is indication that there is more frequency distribution of respondents who Utilizes Google Meet once in a week.

From the table above, the respondents' distribution on the Utilization of Google form mobile application as about 19.3% of respondents Utilizes google form everyday, 28.7% of respondents Utilizes it once in a week, 32.7% Utilizes google form once a month and 19.3% of the respondents never Utilizes google foom. From the above, there is indication that there is more frequency distribution of respondents who Utilizes google form once in a month.

Research Question 2: What is the perception of Teachers on the Utilization of Mobile Application for Instruction?

Table 3 Respondents Frequency Distribution on the Utilization of Mobile Application for instruction

S/N	Variables		Frequency	Percentage(%)
1.	**Students will be more likely to participate in class activities outside class time**	**SA**	84	56
		A	57	38
		D	9	6
		SD	-	-

2.	**Students are more likely to engage in class discussion**	**SA**	88	58.7
		A	54	36
		D	6	4
		SD	2	1.3
3.	**Students would be able to ask for more clarification**	**SA**	63	42
		A	79	52.7
		D	8	5.3
		SD	-	-

Source; Field Survey, 2021

The above table indicates the respondents varying responses on the utilization of mobile application for instruction. On the scale of students being more likely to participate in class activities outside class period, 56% of the respondents strongly agree; 38% of the students agree while 6% disagreed. On whether students would be more likely to engage in class discussion, 58.7% students strongly agree; 36% of the respondents agreed; 4% disagreed and 1.3% strongly disagreed. On whether students would be able to ask for more clarification, 42% of the respondents strongly agreed, 52.7% agreed and 5.3% disagreed.

As indicated above, most of the respondents strongly agreed that students would be more likely to participate in class activities outside class time with the use of mobile application. Also most of the respondents strongly agreed that students would be more likely to engage in class discussion and a large percentage also agreed that students would be able to ask for more clarification with the use of mobile application.

Research Question 3: How Does Teachers' Perception influence the use of Mobile Application for Learning?

Table 4 Frequency Distribution of Respondents On How Teachers' Perception Influence the Use of Mobile Application for instruction

S/N	Variables		Frequency	Percentage(%)
1.	Easily Upload course materials on mobile application	SA	77	51.3
		A	67	44.7
		D	5	3.3
		SD	1	0.7
2.	To participate In Discussion Forum With Students	SA	67	44.7
		A	75	50
		D	8	5.3
		SD	-	-
3.	Much Easier to Give Assignments to Students On Mobile Application	SA	78	52
		A	67	44.7
		D	5	3.3
		SD	-	-
4	More motivated to teach with the use of mobile application	SA	60	40
		A	78	52
		D	9	6
		SD	3	2

Source; Field Survey, 2021

The above table indicates the respondents varying responses on how they (teachers) influence the use of mobile application for learning. On if the would easily upload and share course/subject materials on mobile application, 51.3% of the respondents strongly agree; 44.7% of the students agree; 3.3% disagreed while 0.7% strongly disagreed. On whether they'd participate in discussion forum with students, 44.7% respondents strongly agree; 50% of the respondents agreed; and 5.3% disagreed. On whether they would find it much easier to give assignments to students on mobile application, 52% of the respondents strongly agreed, 44.7% agreed; and 3.3% of the respondents disagreed. Lastly, on whether they would be more motivated to teach with the use of mobile application, 40% 0f the respondents strongly agreed, 52% agreed; 6% disagreed and 2% strongly disagreed

As indicated above, most of the respondents strongly agreed that they would easily upload course/subject materials to students on mobile application. Also most of the respondents agreed that through mobile application, they would participate in discussion forum with students. Furthermore, most of the respondents strongly agreed that they would find it much easier to give assignments to students on mobile application. And lastly, most of respondents agreed that they would be more motivated to teach with the use of mobile application.

4.2 HYPOTHESIS TESTING

Hypothesis I

HO There is significance difference between teachers' perception in Various Secondary Schools On the Use of Mobile Application for learning in Ilorin Metropolis

Table 5: Perception of Teachers towards the utilization of Mobile Application

Variable	Standardized Coefficient (Beta)	T	Level of Significance
(Constant)		2.715	.007
Easily upload course materials	.106	1.262	.209
More likely to engage in class discussion	.145	1.738	.084.
Students would be able to ask for more clarification	.087	1.065	.289

Source: Field survey, 2021

R square 0.736 or 74%

All variables are significant at less than 1 significance level.

$Y = a + \beta 1x1 + \beta 2x2 + \beta 3$

The regression analysis shows students will be more likely to participate in class activities outside class discussion is the most significant variable on the utilization of the telegram mobile application. Considering the regression line equation ($y = a + \beta x$), b which is the slope of the equation. Standardized coefficient of students will be more likely to participate in class activities outside class time at 0.106; More likely to engage in class discussion at 0.145 and Students would be able to ask for more clarification at 0.087.

Based on the above R^2 result obtained from the regression analysis, this indicates that all the independent variables in the model explains about 0.736142 (74.0%) of any variation that occurs in the dependent variable which is telegram mobile application utilization. This result shows that the dependent variable is well explained as the of R^2 is fast approaching one.

HYPOTHESIS II

H0 There is no significant difference between experienced and less experienced teachers in their perception on the use of mobile App for teaching. This hypothesis was tested at 0.05 level of significance using chi-square statistical

Table 6: Effect of Working Experience on the Perception of Teachers on the Utilization of Mobile Application

Working Experience	Freq.	Percentage	Level Sig.	x^2-cal	t-cal
< 5 years	51	34	0.05	102.3	7.72
6-10 years	73	48.7			
➢ **10 years**	26	17.3			

Source: Field Survey, 2021

As represented in the table, the calculated value is 102.3, while critical value is 7.72. at 0.05 level of significance. The calculated value is greater than critical value. As a result, the null hypothesis is rejected. Therefore, there is significance difference between experienced and less experienced teachers' perception on the utilization of mobile application. This results also show that that there are more teachers who have 6-10years working experience in the study sample size.

4.3 Discussion of Findings

The research data analysis was organized in a format that support the research guidelines and also to answer proposed research questions and put the research hypothesis to test. Under the socio-demographic distribution of the respondents, it is indicated that there is a popular representation of female respondents to a lesser number of male respondents in the gender category. Also, there is most representation of science teachers, followed by social science, with the least number of representation from the art department, among the respondents.

On the frequency distribution of the respondents on the use of mobile application, also to know how often teachers use mobile application to aid learning. On telegram, it is observed that most of the respondents Utilizes telegram every day and a least number of respondents who never Utilizes telegram. On google class room, it also observed that most of the respondents Utilizes google classroom every day and a least number of respondents who never Utilizes google classroom. On Edmodo, it is observed that most of the respondents Utilizes the mobile application once in a week and a least number of the respondents who Utilizes the application once in a month. On google meet mobile application, it is observed that most of the respondents Utilizes the application once in a week, with the least number of respondents who Utilizes the application once in a month. On google form, it is observed that most of the respondents Utilizes the application once in a month, and a least number of respondents who never Utilizes the application.

To answer the research question on how teachers' perception influence the use of mobile application for instruction. Most of the respondents strongly agreed that they would find it easily to upload course materials on mobile application with a least number of respondents who strongly disagrees. Also, most of the respondents agreed to participate in discussion forum with students on the use of mobile application. Most of the respondents also strongly agreed to find it much easier to give assignments to students on mobile application.

Lastly, most of the respondents agree to be more motivated to teach with the use of mobile application, while a least number of respondents strongly disagree. To answer the question on the utilization of mobile application for instruction. Most of the respondents strongly agree that student will be more likely to participate in class activities outside class time with the use of mobile application. Most of the respondents also strongly agree that student will be more likely to engage in class discussion with the use of mobile application, while a least of respondents strongly disagree to this. Also, most of the respondents agreed that students will be able to ask for more clarification with the use on mobile application.

To test the hypothesis, perceptions were put to test through the different dependable variables and it was generally observed that the that there is significance difference between teachers' perception in Various Secondary Schools On the Use of Mobile Application for instruction in Minna Metropolis as the null hypothesis was accepted in the first hypothetical testing.

Furthermore, the null hypothesis of the second hypothetical testing was rejected, therefore, there is significant difference between experienced and less experienced teachers in their perception on the use of mobile Application for instruction.

In conclusion, it can be said that the research was scientifically analyzed so as to avoid significant marginal error. And therefore, to carefully answer research questions and test hypothesis that birthed further research conclusions and recommendations.

CHAPTER FIVE

5.0 Summary, Conclusions and Recommendations

5.1 Summary

Education in 21st century skills involve communication and collaboration among learners. García, and Kleifgen, (2018) posited that the ability to think critically and creatively, to collaborate, and to communicate clearly among peers give room for

successful career life and opportunities to lead effectively. Through ICT, learning can occur anytime and anywhere. Online course materials, for example, can be accessible 24 hours aday, seven days a week. Teleconferencing classrooms allow both learner and teacher to interact simultaneously with ease and convenience. The first chapter of this study has been made the above statements as the opening background to the research in that we can't take away the relevance of mobile application and digital learning away from the discussion or advancement of education.

In the segment where we looked at the various literary works of different academic and professional scholars, Mobiles now encircle the socializing features of virtual spaces that have emerged as zones for information sharing, collaboration, and community formation and extension Suter. , mobile applications have the capability to improve interaction among learners and teachers. Teachers can respond to students' questions, post home work assignments and lesson plans, send messages and updates, schedule or announce upcoming events, and share interesting Websites and multimedia content. Also, as deposited by the literature review, Students can use mobile applications to get help from teachers or other students. A large number of studies have explored factors that influence human attitudes toward using and accepting new technologies.

During mid-segment of the research, grounds and patterns of the research were laid which involves the research design, and various methodologies that suits the enquiry and survey findings. However, the result of this study showed the important

relationship between the utility of m-learning, ease in m-learning, and self-management of the learner, and behavior towards the actual use of m-learning applications. Instructional mobile applications improve communication among learners and teachers. For example, Telegram, Google classroom and Edmodo can be used to improve interaction among learners and teachers. Teachers can respond to students' questions via a Telegram page or google classroom, post homework, assignments and lesson plans, send messages and updates, schedule or announce upcoming events, and share interesting Websites and multimedia content.

A great way for teachers to give participation points in addition to class room participation is by having students collaborate about something that was discussed in class. Teachers' Perception on the use of mobile application based learning for teaching is based on planning, adequacy and teaching methodology of the teachers and supply and reserve of support service or systems to enhance the use of mobile application for teaching. This were scientifically carried out and analyzed through IBM SPSS and it went further to test hypothesis as laid in the beginning of the research. All in all, the essence of the research was able to answer certain question even as teachers seek for ways to motivate students even towards learning and school activities.

5.2 Conclusions

The conclusion that could be drawn from the results obtained from the data gathered and analyzed in this study is that teachers' perception on the use of mobile App for teaching was positive. The findings of the research revealed that teachers agree to use

mobile App for teaching. Even though the research couldn't focus more on years of experience, results also showed that years of experience do not influence teacher's perception on the use of mobile App for teaching in secondary school. The implication of this is that teachers should be encouraged by the government and other concerned bodies to utilize instructional mobile App for teaching by providing necessary aids such as electricity supply, internet access, and possibly mobile devices.

The research isn't concluded if we don't mention there were still varying differentiation amongst the response gathered in that some still resented towards the use of mobile application which based on quantitative analysis, weren't significant enough however based on qualitative nature that this research is also expected to be based on, they were still significant due to reasons perceived to be behind such resentment.

5.3 Recommendation

These recommendations are based on the summary of findings and conclusion reached thereafter:

1. That teachers should acquire more knowledge on the use of mobile applications for instruction and how effectively in their teaching to be able to guide the student appropriately.
2. Student should develop themselves more in the use of educational mobile applications for learning and offer useful suggestions to help educating other learners on how to approach and remove the fear that arises as a result of the complexities in the use of mobile application for instruction.

3. That curriculum planners should incorporate the use of mobile application for learning in the curriculum.
4. Parents should understand the important of utilization mobile application for learning and therefore be willing to support their children by purchasing data on their mobile phone that will help to facilitate their learning.
5. The academic body entirely should study further the utilization of mobile application and should accommodate more technological innovations that can aid learning amongst the secondary School students.

5.4 Limitations of the Study

The following limitations can be observed regarding the study

1. The study was conducted in some secondary schools in Minna with enough sample size which make the findings not generalizable.
2. The study only focused on Perception of secondary school teachers on the utilization of mobile application for instruction.
3. The study did not look into the competence and self-efficacy of which could be some those important variables for future studies.

5.5 Suggestions and further Research

1. A way of ensuring a large scope for this study could be through the involvement of a larger sample from all secondary school in Minna metropolis. Future Research work should attempt to use more samples drawn from Minna.

2. The influence of socio-economic status of teachers on utilization of mobile application for instruction.

References

Chen, B. & Bryer, T.(2019) *Investigating instructional strategies for using social media In formal and informal learning*. The International Review of Research in Open and Distance Learning, 13(1), 87-100.

Cheung, C.M.&Lee,M.K.(2020) *A theoretical model of intentional social action in Online social networks* ,Decision Support Systems, 49,24-30.

David Mathias (2019) *the Role of Social Media in Teaching and Learning*: Innovative ICT Practices in Teaching and Learning: A Regional Seminar.

Dix K. L. (2017) *A Longitudinal Study Examining the Impact of ICT Adoption on Students and Teachers*, PH.D. Thesis Report. Flinders University of South Australia.

Franklin, T. (2019) The *mobile school: Digital communities created by mobile learners*. [Abstract] Bringing schools into the 21st century. In Exploration of Educational Purpose *13,* 181-203. Retrieved from http://link.springer.com/chapter/10.1007%2fg78-9 .

Gabriel (2019) *The Role of Information and communication Technology (ICT) Toward Teachers' Education in South West Nigeria: Impedements and the way forward*, Ado Ekiti, European Journal of Computer Science and Information Technology.

Jo Shan Fu (2019) *ICT in Education: A Critical Literature Review and its Implications*, Singapore, International Journal of Education and Development using Information and Communication Technology*(IJEDICT)*,2013,Vol.9,Issue1,pp.112-125

Kulowiec, G. (2019) *Cell phone as classroom tools. Teaching History*, Retrieved from http://www.teachinghistory.org/digital-classroom.

Lloyd, M., &Yelland, N. (2020) *Adaptation and avoidance: Observations of teachers' reactions to technology in the classroom change: Transformations in Education, 6*(1), pp. 81-96.

Lenhart, A., Ling, R., Campbell, S., & Purcell, K. (2020) *Teens and mobile phones. Pew Internet and American Life Project. Pew Research Center*. Retrieved from http://www.pewInternet.org/Reports/2020/Teens-and-mobile-phones.aspx .

Meenakshi (2019) *Importance of ICT in Education*, University of Jammu, IOSR Journal

of Research & Method in Education *(IOSR-JRME) e-ISSN:2320–7388,p-ISSN:2320–737X Volume 1,Issue4PP03-08*

Nilson, L. B. (2020) *Using instructional technology wisely ,Teaching At Its Best*. San Francisco, CA: Jossey - Bass Press.

Pea, R., & Maldonado, H. (2020) *WILD for learning: Interacting through new computing devices anytime, anywhere.* Cambridge University Handbook of Learning Sciences, ch. 25. New York: Cambridge University Press 2020. Retrieved from http://www.Standard.edu/-Kiky/PeaMaldo .

Perrotta, C. (2019) *Do school-level factors influence the educational benefits of digital technology?* A critical analysis of teachers' perceptions. *British Journal of Educational Technology*, *44*(2), 314-327. doi: 10.1111/j.1467- 8535.2012.01304.x

Rahimi, E.,vandenBerg, J. & Veen, W.(2019) *'Investigating teachers' perceptions about the educational benefits of Web 2.0 personal learning environments'*, eLearning Papers, [online]

Reid, S., (2020) *The integration of ICT into classroom teaching*. Alberta Journal of Educational Research ,vol.48,pp.30-46.

Retta Guy (2019) *The Use of Social Media for Academic Practice: A Review of Literature*, Tennessee State University, Kentucky Journal of Higher Education Policy and Practice.

Rimyan S. (2020) *Mainstreaming Gender for Better Girls' Education: Policy and International Issues*. South Asia. UNICEF/United Nations Girls‟ Education Institute.

Selwyn, N. (2020) *Looking beyond learning: Notes towards the criticai study of educational technology*, Journal of Computer Assisted Learning, 26(1), 65-73.

Sharma, R. (2020) '*Barriers in Using Technology for Education in Developing Countries'*, IEEE0- 7803-7724-9103.Singapore schools', *Computers & Education* Vol. 41, No. (1),Pp; 49--63.

Waldeck, J.H., & Dougherty, K. (2019) *Collaborative communication technologies and learning in college courses:* Which are used, for what purposes, and to what ends? Learning, Media andTechnology, 37 (4),355-378.

Wang, Q. (2020). *A generic model for guiding the integration of ICT into teaching and learning,* Innovations in Education and Teaching International, 45 (4), November, 2008.p 411- 419.

Watts-Taffe, S., Gwinn, C.B. and Horn, M.L., (2020) *Preparing preservice teachers to integratete chnology with the elementary literacy program*. *The Reading Teacher* ,vol. 57,pp.130-138.

Williams Warren Robbert (2019) *Digital Immigrant Teacher Perceptions of Social*

Media as it Influences the Effective and Cognitive Development of Students: A Phenomenological Study, Liberty University, A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Education.