PERCEPTION OF UNDERGRADUATE STUDENTS ON THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR LEARNING

BY

ABDULWAHEED, Suleiman Abdullahi
2014/1/49900TI

DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION,

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGER STATE.

AUGUST, 2021.

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A RESAERCH PROJECT SUBMITTED TO THEDEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION,

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGERIA

IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELOR OF TECHNOLOGY (B. Tech) DEGREE IN INDUSTRIAL AND TECHNOLOGY EDUCATION.

AUGUST, 2021.

DECLARATION

I,**AbdulwaheedSuleiman Abdullahi**with matriculation number **2014/1/49900TI**an undergraduate of the department of Industrial and Technology Education declare that the work in the research project entitled "The Perception of Undergraduate Students on the use of Information and Communication Technology for Learning", has been carried out by me under the supervision of Dr. G. A. Usman. No part of this project report was presented for another degree or diploma elsewhere at any institution to the best of my knowledge.

ABDULWAHEED SULEIMAN ABDULLAHI **…….....**
2014/1/49900TI Date and Signature

CERTIFICATION

This project has been read and approved as meeting the requirements for the partial fulfillment of the award of Bachelor of Technology (B.Tech) degree in Industrial and Technology Education, Federal University of Technology, Minna.

Dr. G. A.Usman ……
Project supervisor Date and signature

Dr. I. Y. UMAR ……
Head of Department Date and signature

…… ……
External Examiner Date and signature

DEDICATION

This research work is first and foremost dedicated to God Almighty, the sustainer of my soul.

And also to my Parents.

ACKNOWLEDGEMENTS

I am most grateful to God Almighty from the deepest resources of my heart for His grace, love and mercy shown unto me, and for been my all sufficiency throughout the course of this programme.My profound gratitude goes to my parents Mr. and Mrs. AbdullahiAbdulwaheed, for their unbending support financially and morally during the course of this research project.

I must also sincerely appreciate my supervisors; Dr. G. A. Usman who offered guidance, timely criticism and corrections that led me through the various stages of this project. My special thanks goes to my family members; AbdulwaheedRakiyyat, AbdulwaheedMuhammed, AbdulwaheedAbubakar, AbdulwaheedAbdulsallam and Engr. Abdulmalik Suleiman for their spiritual, moral and financial support that has kept me through this period.

Not forgetting my armies of loyal friends that has always stood by me and helped me greatly in different capacities, worthy of note include; Engr. Isama Charles Edache, Mr. KawoUsman, Ibrahim Ibrahim, Abigail Kanjiwa, Sunday Odey, Ejeh Gabriel, Jacob Onoja,Abdullahi Suleiman,TimondOlatunde, Khadija Usman,AbdullahiSaidu, and my very own mirror image, LydiaIfelayoKomolafe.

May the Almighty God reward and bless you all.

ABSTRACT

This study investigated the perception of undergraduate students on the use of information and communication technology for learning in IBBU Lapai, Niger State. Three research question were formulatedbased on thepurposeof the study. The researchdesign used in carrying out this is a survey research design method.Where 30 structured questionnaire questions were used to collect the data from the respondent. The instruments for data collection was designed by the researcher and validated by three lecturersfrom the department of Industrial and Technology E'ducation, Federal University of Technology Minna, Niger State. The university has seven faculties and five were selected as sample for the study which includes Faculty of Law, Faculty of Education and Art, Faculty of Natural Science, Faculty of Languages and Communication Studies, and Faculty of Applied Sciences and Technology. Two hundred respondents were selected by random sampling across the five selected school in the university. Data was analyzed through the use of mean and standard deviation. Findings shows that information and communication technology, when appropriately used for learning, motivate student's interest, enhances individualized instruction and generally improves their overall performance of students. Based on findings it is therefore recommended that, since the world is now a global village and digital world, the use of information and communication technology for learning should be implemented in higher institution of learning. More importantly, students should be kept abreast of creativity and innovation in education.

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1.0 INTRODUCTION

1.1 Background of the Study

Information and Communication Technology (ICT) is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. This broad definition of ICT include technologies as radio, television, video, telephone, satellite system, computer and network hardware and software, as well as the equipment and services associated with these technologies, such as video-conferencing and electronic mail (UNESCO, 2012). ICT is potentially a powerful tool for extending educational opportunities and can provide remote learning resources. Information and Communication Technology encourages students to take responsibility for their own learning and offered problem centered and inquiry based learning which provides easy access and information based resources. It is necessary to acquire the ability to use technology as a tool to research, organize, evaluate and communicate Information, and the possession of the fundamental understanding of the ethnical or legal issues and use of information technology.

Today knowledge of ICT, networking, communication and retrieval technologies have become core to the profession. Success of ICT-based education depends upon the teacher's ability to keep pace with the development since teachers are responsible for quality control improvement of learning and the aggregate effectiveness of the learning process. The main role of teachers will not be to transmit information and culture, but rather to act as experts and leaders to motivate learning. It is difficult and maybe even impossible to imagine future

learning environment that are not supported in one way or another by information and communication technologies (ICT).

When looking at the current widespread diffusion and use of information and communication in modern societies, especially by the young. The so called digital generation, then it should be clear that ICT will affect the complete learning process today and in the future.

Teaching is becoming one of the most challenging professions in our Society today where knowledge is expanding so rapidly that modern technologies demand the use of Information and Communication Technology (ICT). ICT has become within a short time one of the basic building blocks of a modern society. Many countries now regard the understanding of ICT and mastering its basic concepts as part of the core of education (UNESCO, 2012). The global world today has been bridged through the use and application of information and communication technology, such as smart phone, laptop and tablet. Computer are increasingly being considered as mediating tools in teaching learning processes especially at the higher education level. At the higher education level where the patronization of mobile technology in teaching and process is ubiquitous, most students and academics seem to embrace it as a routine in the advancement of making information known, including other various purposes. Nowadays, a lot of iPhones, ipads and other identical smart devices are equipped with many functionalities and special features that can be used for delivering learning content. As it is asserted "most devices are now capable of processing information in the same way as desktop computers"(Khaddage&Latteman, 2013). It comes as no surprise therefore to be fully aware that technology expert and major stakeholders have shown considerable interest in the application of information and communication technology, not only for the teaching and learning process, but also in several other workplaces. Significant projects in all these areas have revealed how information technology is capable of transforming and empowering

individuals, promoting changes and fostering the development of 21st century skills (Oblinger, 2015).

Taking education into account, lots of research has shown how information and communication technology can offer new opportunities that can transform teaching and learning process from being highly teacher-dominated to student/learner-centered. Many experts are also of the view that this transformation will result in increased learning gains for students thereby creating and allowing opportunities for learners to be creative and develop, problem-solving of skill and higher-order thinkingskills (Bullen& Morgan, 2009).

In the light of higher education, majority of University students nowadays belong to the generation (also called millennial generation). This is a generation of people typically perceived as steadily more familiar with digital and electronic technology. For this reason, information and communication technology is now an integral ritual in their lives certainly, we are living in an age of "personal and technical mobility" where mobile devices, laptos and tablets computers are carried everywhere. According to Lavin and Fernandez (2008), ICT learning is enabled by integrating various hardware and software technologies into multimedia application, facilitating the communication of educational content in a number of different formats for University students. In addition, Gikas and Grant (2013), cite a survey conducted by the Education Center for Applied Research (ECAR) (2002), which suggests that students are driving the adoption of mobile computing. Since we live in a world in which information is available everywhere.

Furthermore, there has been the consideration of one vital element that seems to inhabit mobile learning. This has to do with the issues of how handy and easy to manipulate these devices are, mobile learning is fraught with several challenges such as connectivity, limited processing power and reduced input capabilities. These (Technological) challenges mean that

adapting existing e-learning services to m-learning is not an easy work. Attewel (2015), attest to these challenges when he drums the points that impediments of serene resolution and complicated input mechanism of mobile phone. I think stakeholders of technology ought to take a critical look into the easy handling and use of mobile devices and application by improving on them. I believe student would be more than willing to using mobile learning. In support of this opinion, researchers are exploring new tools and methods for the collection and analysis of data research methodologies and approaches suitable for interpreting such data and issues in designing mobile learning research (Vavoular&Pachler 2010).

1.2 Statement of the Problem

Information and communication technology has become an integral part of every individuals' life, even in schools, ICT has provide a window of opportunity for educational institutions and other organization to harness and use technology to complement and support the teaching and learning process. However, despite the enormous advocacy of ICT aided teaching and learning investment and donation of ICT equipment to Ibrahim BadamasiBabangida UniversityLapai. The university still faces the challenge of how to transform students learning process to provide students with the skills to function effectively in this dynamic, information and continuously change environment (Young, 2015).

The cause of concern is that unless this problem is addressed, investment in the development of ICT in the university is going to be put to waste, and improvement in the quality of teaching and learning is going to be slow. The university mission is to "Transforming Nigeria's natural resources into goods and services, driven by entrepreneurship and ICT to positively affect the economy and the quality of life of Nigerian citizens. In view of this discrepancy, there is need to examine, to what extent do undergraduate students use information and communication technology for learning, learning opportunities with

information and communication technology, how the use of information and communication technology has promoted students learning.

1.3 Purpose of the Study

The purposeof the study is to identify the perception of undergraduate students on the use of information and communication technology for learning. Specifically, the study will identify:

1. The effectiveness of Information and Communication Technology for learning.
2. Students learning opportunities with Information and Communication Technology.
3. How the use of Information and Communication Technology has promoted students learning.

1.4 Significance of the Study

The results of this study will be of immense benefits to the universities within country, university administrators as well as undergraduate students.

The study will be of benefit to universities within the country to guide them through pattern that will help them improve the perception and effective utilization of ICT facilities to promote learning and ensure the students become better by learning and improve their way of life as the above objectives will be achieved.

In addition, the study would be of great importance to the university administrators, by helping them to appreciate the usefulness of ICT in learning as to generate polices that will promote and enhance ICT in teaching and learning process.Furthermore, the findings and recommendations of the study should be of great benefit to IBBU lecturers and other lectures of higher institution of learning on the use of ICT for learning and also to the society at large. The result of the study will be useful for future researchers with interest in examining further the perception of undergraduate students on the use of Information and communication

technology for learning. This will lead to the generation of new ideas for the better implementation of ICT into learning and teaching process.

1.5 Scope of the Study

The study specifically sought to determine the perception of undergraduate students of Ibrahim BadamasiBabangida University on the use of information and communication technology for learning. This study is limited to some digital and mobile devices, these devices include:

1. Laptop Users
2. Smartphones Users
3. Tablet computers Users

Desktop computer will not be covered in this study due to its inability of portability.

1.6 Research Questions

The following research questions were posed to guide the study:

i. What is the effectiveness of Information and Communication Technology for learning?

ii. What are the learning opportunities with information and communication technology?

iii. How the use of information and communication technology has promoted student learning?

CHAPTER TWO

2.0 LITERATURE REVIEW

The review of related literature to this study is organized under the following sub-headings:

2.1 Theoretical Framework

This study was based on the theoretical framework of theory of cognitive learning.

2.1.1 Theory of Cognitive Learning

One of the most prominent results of recent research in cognitive psychology is taking cognizance of the claim that "Old" knowledge plays a vital and fundamental role in the acquisition of "New" knowledge (Picters, Breveur, & Simons 2012). The theory of cognitive learning (Ausubel, 2008, 2009: Novak &Hanesian, 2009) is analyzed form the aspect of educational psychology where the center of interest is on how students learn. The theory is

based on the ideas that learners learn through meaningful learning, and not through role memorization. In the theory, Ausubel contends that meaningful learning is accomplished by prior knowledge. That is, any new learning must, in some cases, connect with what learners already know (Shulman 2010). Students prior knowledge provides proof of both the alternative and technological conceptions that learners possess. Because of this, students learning is basically affected by their existing knowledge prior to instruction (Hewson&Hewson, 2009).

The theory also states that that the most important factor influencing learning is the quantity, clarity and organization of the learner's present knowledge. This present knowledge consists the facts, concepts theories and proposition that the learner has the right or opportunity to use or benefit from.

Consequently, the theory explains that the construction of new meanings requires that learners attempt to achieve the integration of new knowledge with existing relevant concepts and propositions in their cognitive structure. These propositions are seen as essential elements in representing meanings. In addition, being the basic mental process that learners use to make sense of information, the cognitive structure is greatly determined by how much effort is made to seek this (Novak, 2010).

In the context of higher education learning, familiarity with some technological devices in pedagogy and student learning allows students apply their computer technological skill in not only problem solving cases but also in the teaching learning processes (Cradler, Freeman & Burchett, 2012).

Besides, meaningful learning gives prominence to the acquisition of new information by learners and their connections to previous experiences and knowledge in the formation of personal and unique understandings (Rendas, Fonseca & Pinto, 2010). It is the belief of the

research that every university students concerned in thus research owns at least one of the mobile technology devices mentioned in the study. Therefore, having the particular device or devices in their possession anytime, anywhere, spot on, creates a familiar bond in such a way that in cooperating new knowledge in connection with their course work ensures the achievement of a meaningful learning process. As suggested, when learning materials are well organized with new ideas and concepts that re potentially meaningful to the learner, anchoring new concepts into the learner's already existing cognitive structure will make the new concept recallable. Furthermore, the theory explains that before new materials can be presented effectively, the student's cognitive structure (i.e. the area that is prepared to accept new or attired ideas) should be strengthened and when this is carried out, acquisition and retention of new information is facilitated (Ausubel, 2010). On this account, the expectation of students' knowledge of laptop, Smartphone and tablet computers for learning new things and solving studying related problems can make learners recollect the experiences they used with the devices to understand the new concept taught them.

Additionally, any pedagogically significant use of ICT should enable learners to engage in meaningful learning (Jonassen, 2012). For this reason, since university students own mobile devices mentioned in this study, it can be said that they are familiar with the mobile devices and are therefore able to manipulate them to their benefits, hence their ability to operate these devices indicates their prior knowledge of mobile technology in higher education learning. The caution though is that access alone does not guarantee that a particular programme will be successful (Shapely, Mahoney &Caramkas-Walker 2010). Besides, the quail ability of mobile devices does not guarantee their use in education. For these reasons, we must first analyze students readiness for mobile learning (Corbeil& Valdes Corbeil, 2011). This, the theory explains, is where teachers need to remember that inputs to learning are crucial, instructors therefore should ensure that learning materials are well organized and new concept

must be potentially meaningful to learners such that the new concept can be recallable (Ausubel, 2011). Effective teaching and learning reinforces positive transfer by actively identifying the relevant knowledge and strengths that students bring to a learning situation where they build on them (Brown & Cocking 2011). It is therefore gratifying to stress that the university where the research was carried out has a strong commitment to information communication technology (ICT); as a result, students have some knowledge about the use of ICTs. This explains that supported by effective teaching, students will be capable of integrating whatever new things they learn with mobile technology, in connection with their reluctant knowledge of the technology. The positive transfer gained, can be discussed by way of students perceptions on the use of information and communication technology for learning. Furthermore, collaborating with the mobile devices as technological aids enhances the creative and problem solving possibilities of students. That is, students' current knowledge of mobile technology in union with being constantly connected with their fellow students through mobile devices may well promote their learning. The theory of cognitive learning makes it possible for teachers to provide new learning opportunities to students as well as studying able to identify some factors that might affect the successful use of mobile technology in higher education learning.

2.1.2 The TML Model

As a general approach that can be used to shape curricula, design instructional materials and guide instructors' work which does not only take place in the lecture norms but equally in other settings, the TML Model is a pedagogical model that exploits the use of technologies in the teaching and learning situation.

The model is concerned with students learning processes together with their expected out-comes this study therefore incorporates the TML Models since the significant use of

information communication and technology is perceived as useful for learning facilities both teaching and meaningful learning, as well as enhance the acquisition of domain. Specific Knowledge and Methodological Skills (Hakkarainen&Vapalahn 2011).

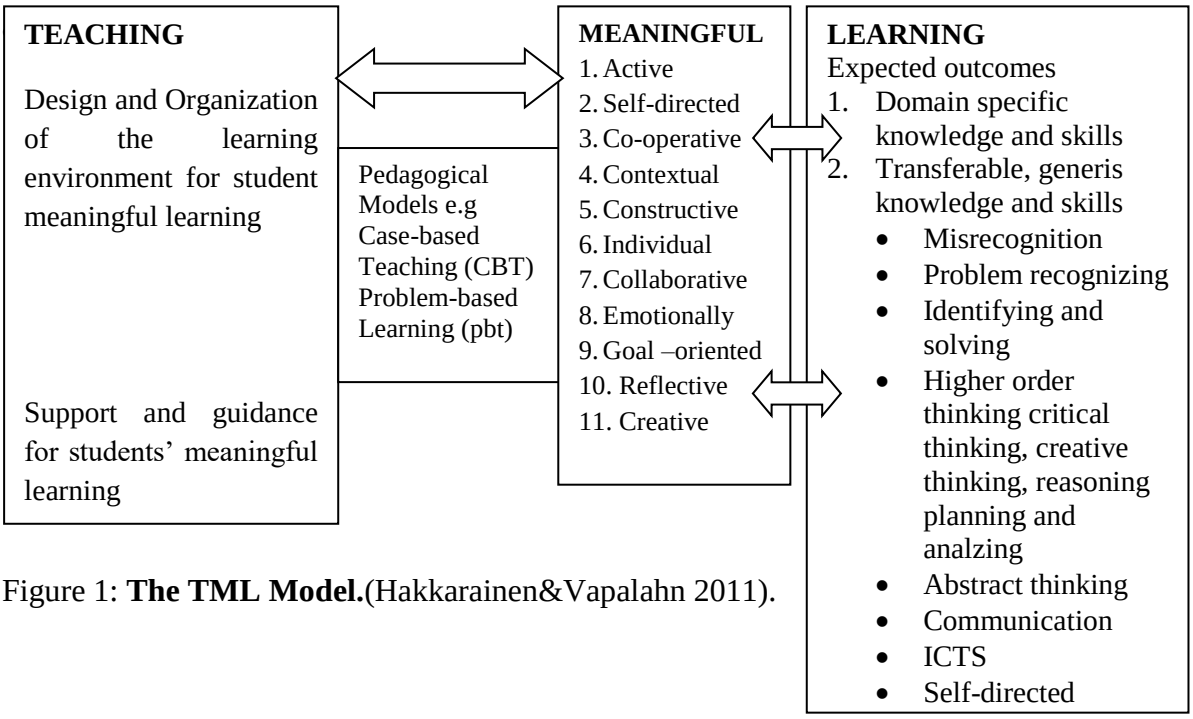

Figure 1: **The TML Model.**(Hakkarainen&Vapalahn 2011).

Hakkarainenetal's (2010) pedagogical model for teaching and meaningful learning is based on the theory of cognitive learning by Ausubel (2008, 2009) and the ideas of meaningful learning by Jonassen (2010). As maintained by the model, meaningful learning refers both to the student's learning process and to the expected learning outcomes. These learning outcomes makes reference to the ways of understanding the things students learn (Prosser & Trig well, 1999). In the model meaningful learning is described through (11) eleven process characteristics and expected outcomes including student's domain-specific knowledge and skills. Thus "transferable". In this study, indicates student's ability to extend what they have learned from one context to the other. In the TML model there is a two way arrow indicating the cooperation of relationships between the components of the model. The model also has some pedagogical approaches like case-based teaching which focuses on teacher's problem

solving, decision making reflective practices and their own personalized theory about teaching and learning (Better, Ice &Tippins, 2010).

2.1.3. The ETMeL Model.

As indicated in figure 2 below, the Enhance Teaching and Meaningful e-Learning (ETMeL) model is an upgrade of an existing pedagogical model. (i.e. TML).

Enhance Teaching and Meaning e-Learning (ETMeL)

<table>
<tr><td>Teacher
Gives individual feedback
Designs clear guidelines
Tutors online discussions
Sets positive climate for learning
Formulates clear course goals and objectives
Provides feedback</td><td>Students
<table><tr><td>Processes

Flexible

Constructive

Collaborating

Individual</td><td>Outcomes
Development of understanding in the subject matter
Development of one’s critical thinking</td></tr></table></td></tr>
</table>

Figure 2: **ETMel Model (Ruokamo, Hakkarainen, & Eriksson)**

The idea behind reducing and simplifying the (11) eleven characteristics process of meaningful learning in the TML model give way for the ETMeL model. This creation was made possible after a design-based research (DBR) has been conducted, fundamentally, a design-based research (DBR) is about understanding how people learn, especially within the

formal settings. It is also about designing ways to better ensure that learning will take place in these environments. According to Ruokamo etal. (2012).DBR targets the simultaneous improvement of both theory and local practices. In this research, the DBR in the ETMeLmodel is related to the theory of cognitive learning by Ausubel (2008, 2009: Ausubel, et. al, 2010). Thus for all intents and purposes, the ETMeL model is a viable model.

In no shall, the ETMeL model make clear how the characteristics of meaningful learning can be grouped together in the "pedagogical and learning theoretical approaches to educational use of ICTs" (Ruokamo, etal. 2012).

2.2 ConceptualFramework

Contemporary trend in information and communication technologies have resulted in the proliferation of mobile devices. For instance, cell phones and Personal Digital Assistants (PDAs). In addition, scientific investigations have equally offered significant insight into mobile learning despite the issue being a relatively new phenomenon with its theoretical premises yet to become extensive. Further instructional designers have been given the needed support to consider the role that mobile devices, as instructional materials, play in how learners (students) go about the process of learning. This encouragement has been necessitated by the rational of thought that students attempt to learn, may be associated with their skills and experiences of becoming proficient with the use of various forms of digitals and mobile technology.

In this study, the researcher briefly present the theoretical approach and the models used in mobile learning at the higher education level. My main theory of discussion brings to focus, Ausubel's.

Theory of cognitive learning which is used as the theoretical framework which offers a lens for investigating how information are absorbed, processed, and retained during learning in the university setting. Emphasis will be placed on how students integrate new knowledge with that they have already learned or what they already know. Thus, the theory of cognitive learning by Asubel (2009), is aimed at and, sing how student perceive or become conscious of the use of laptop, smart phone and tablet computer in teaching and learning processes. The teaching and meaningful learning (TML) and the enhance teaching and meaningful e-learning (ETMEL) models expatiate on students learning process and their learning outcomes with pedagogical possibilities afforded by the three mobile computing devices. Invariably, the models discuss the rate of educational use of mobile technology by undergraduate students, how students use of mobile computing devices has promoted their learning, as well as the hindrance that is associated with the use of mobile technology by the undergraduate students for learning.

However, it is the hope that learners may bring their intuitive beliefs and experience about information and communication technology in relation to new concepts to attain the desire objectives of meaningful learning, for it is quite reinvigorating to learn that in recent times, number of studies have been endeavored by researchers (Karppinen, 2010: Rendasetal, 2009: Rick and Weber, 2010) to apply information and communication technologies to support the achievement of meaningful learning through mobile learning.

2.3 Review of Related Empirical Studies

Iyaloo, 2021 in his research work teachers' perceptions and use of information and communication technology in teaching and learning: kadjimi circuit, kavango west, namibia The study aimed to describe how secondary teachers in rural arears integrate technology into education and also to gain an insight on their perception and attitudes towards the integration

of technology into teaching and learning. This research used a qualitative case study research design, to describe sec- ondary school teachers' viewpoints. Convenient sampling method and Focus Group Discussion were used to collect data from twenty-four (24) teachers in Kandimi Circuit. The study stipulated that the most used technology is computer, because of its multi-functioning aspects. The study also found out that there were challenges such as lack of skills, ICT tools, cell phone usage stigma, just to mention a few. The study shows evidence that most teachers have the right attitudes and positive perceptions on the meaningful use of ICT in teaching and learning, therefore they must be encouraged in using ICT to embrace Namibian education sector. The study also indicated that the majority of teachers in school management have no positivity in integrating technology in teaching and they resist changes. Finally, there was a proposal for a proper ICT training that should be implemented by ICT Champions whom the government has to appoint. The study further established that there is a need to provide all schools with adequate internet access.

Wiyaka1, Januarius Mujiyanto2 &Dwi Rukmini2, 2018 in his research work students' perception on the usefulness of ict-based language program This paper presents the result of a survey on the usefulness of an ICT-based software program called DEC (a pseudonym for a particular commercial English learning resource). This program was utilized by English Departement University of PGRI Semarang as a complementary software in Integrated Course offered to the first semester students. The research adopted Technology Acceptance Model (TAM) by Davis (1989) which focused on the perceived acceptability of the program. An online questionaire was used to get the data. 236 students participated in the survey. The collected data were tabulated and interpreted descriptively. The findings show various results from the questionnaire under the 4 headings: perceived ease of use, perceived usefulness, perceived attitude towards usage, and perceived intentional behavior to use.

Alfred Henry, 2019 in his research work students perception of the use of ICT in higher education teaching and learning context: the case of a south African university. The aim of this paper was to investigate students' perceptions of ICT usage by staff and students at a South African University. A researcher crafted questionnaire-interview (Questaview) was anonymously administered to a randomly selected group of fifty students to enlist their views on the extent to which they and academic staff utilise ICT during learning and teaching. There were a total of 44 usable returns. Data were analysed thematically after interrogating the responses through coding. Results showed that students perceived 'technology for learning' to mean a computer. They were satisfied with its use and functionality since commencing their studies. Students also reported that most lecturers do not use ICT for teaching. Students perceived ICT particularly the computer, as impacting positively on their academic success, academic access and other curricular issues. We concluded that despite the challenges such as an underutilisation of other ICT's by lecturers, the students perceived ICT in their learning as useful. Students' perceptions in the use of ICT by themselves and their lecturers did not differ much. Moreover, they suggested ways in which lecturers could use more ICT for teaching and learning purposes. On this basis, the paper suggests that universities should sustain their ICT e-learning programmes and training by channelling financial support if student academic performance and quality are to be enhanced. The positive impact of such initiatives makes a strong case for massive investment in e-learning programmes especially among academic staff.

2.4 Summary of Literature Reviewed

It is apparent from the fore going literature review that information technology do not significantly affect the academic performance of its students. Evidence from this study tends to support the fact that information and communication technology have resulted in the proliferation of mobile device. In addition, scientific investigations have equally offered

significant insight into mobile learning despite the issue being a relatively new phenomenon. Further instructional designers have been given the needed support to consider the role of mobile devices, as instructional materials, play in how learners (students) go about the process of learning.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter describes how the research was carried out. It discuss the research design, area of the study, population, sample, instrument for data collection, validity and reliability of the instrument method of data collection and method of data analysis

3.1 Research Design

The research design used in this study was the cross-sectional survey design. Cross-sectional survey design allowed for the study of the population at one specific time and the difference between the individual groups within the population to be compared. It also provide for the examination of the co-relationship between mobile information and communication technology and students learning in seeking the view of undergraduate students of IBBU, Lapai. The choice of this design was dependent on the nature of the study variable.

3.2 Area of the Study

The area of study is Ibrahim BadamasiBabangida University is a University in Lapai, Niger State, central of Nigeria. It had its first convocation in 2014. It was named after the former Nigeria Head of State General Ibrahim Babangida. The university started activities in the 2005/2006 academic session. The University has seven (7) faculties which includes; Faculty of Agriculture, Faculty of Education and Art, Faculty of Languages and Communication

Studies, Faculty of Natural Sciences, Faculty of Management and Social Sciences, Faculty of Applied Sciences and Technology and Faculty of Law. The research work is delimited to IBBU, Lapai because the university a has wider range of Wi-Fi connection available in various part of the university for easy accessibility of its students (Suleiman, 2020).

3.3 Population of the Study

The population of the study consist 14,853 students in IBBU, Lapai. Which five Faculties will be focused on among the seven faculties of the university (www.ibbu.edu.ng) (February, 2021).

Table 1: List of Faculties and Population.

S/N	Name of Faculties	No. of Students
1	Faculty of Agriculture	2569
2	Faculty of Education & Art	2598
3	Faculty of Languages & Communication studies	2227
4	Faculty of Natural Sciences	2384
5	Faculty of Management & Social Sciences	2075
6	Faculty of Applied science & Technology	1773
7	Faculty of Law	1227
	Total	**14,853**

(www.ibbu.edu.ng) (February, 2021).

3.4 Sample and Sampling Techniques

Simple random sampling was used in selecting five faculties out of the seven faculties of the university which includes: Faculty of Applied Sciences and Technology, Faculty of Law, Faculty of Education and Arts, Faculty of Natural Sciences and Faculty of Languages and

Communication Studies which sum up to be **10,209students**. In selecting the faculties, the simple random sampling method was applied so as to avoid bias.

In the course of this study, the simple random sampling was used in selecting the group of respondent required by the researcher. Simple random sampling is a method that gives every subject or sample member in a population an equal chance and not deliberately omitted except by chances. In other words, everybody will be given equal chance of being selected since limited questionnaires are available.

Therefore, the sampling size of this study was 200 students, which was selected from the five faculties within the study area.

Table 2: Distribution of Sample based on of Faculties

S/N	Name of Faculties	No. of Students
1	Faculty of Education & Art	2598
2	Faculty of Languages & Communication studies	2227
3	Faculty of Natural Sciences	2384
4	Faculty of Applied science & Technology	1773
5	Faculty of Law	1227
	Total	**10,209**

3.5 Instrument for Data Collection

The instrument for data collection was a structured questionnaire, made up of items designed such that each items was related to a given research question.

The questionnaires are preferred because it gives clear and specific responses and enable the respondents to express themselves, freely. The questionnaire employed for the perception of undergraduates students on the use of information and communication technology for

learning was divided into two part ‘A’ and ‘B’ part ‘A’, contain the personal data of the respondent part B contain items on the topic perception of undergraduate students on the use of information and communication technology for learning, the questionnaire items were based on four points scale type.

Strongly Agree	=	4	A lot	=	4
Agreed	=	3	Moderately	=	3
Disagreed	=	2	A little	=	2
Strongly Disagreed	=	1	Not at all	=	1

Respondent were required to check against the responses category that best satisfy their opinion.

3.6 Validation of the Instrument

In order to validate the instrument, copies of questionnaire designed and structured by the researcher were forward to three (3) lecturers of Industrial and Technology Education (ITE) department, Federal University of Technology Minna to check whether the items contained in the questionnaire are valid to provide response. Their recommendation and suggestion was used by the researcher to produce the final draft of the questionnaire.

3.7 Reliability of the Instrument

To establish the reliability of the instrument a pilot test was carried out, the instrument were trial tested on 50 students in Federal University of Technology, Minna, Niger State. Result for trial test was used to compute the internal consistency of the instrument using Pearson Product Moment Correlation co-efficient (PPMCC). This was found to be 0.85.

3.8 Administration of the Instrument

The researcher personally visits the sampled schools to seek for permission and co-operation from the staff and students to fill the questionnaire. The instrument was administered to the respondents by the researcher with the help of the lecturer,who are the research assistants; the research assistant was briefed on how to administer the instrument.

3.9 Method of Data Analysis

Data collected was analyzed using mean and standard deviation. The interpretation of the mean depends on the cut-off point computed by the researcher, the cut-off point was obtained by adding the weighting of the response categories divided by the number as follow:

$$\frac{4+3+2+1}{4} = \frac{10}{4} = 2.5$$

Any items having a mean of 2.5 and above were interpreted as positive and therefore, accepted and other wise if less than 2.5 were interpreted as negative and were rejected.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Introduction

This chapter deals with data analysis and presentation of results. Percentages are used to present the demographic information on ownership of mobile devices, the results are organized in line with the objectives of the study.

4.2 Students Ownership of Mobile Devices

Table 3: Mobile Devices Owned by Respondents

S/N	Mobile devices	Frequency	Percentage
1	Laptop	20	10
2	Smartphone	25	12.5
3	Tablet computer	20	10
4	Laptop and Smartphone	55	27.5
5	Laptop and tablet computer	30	15
6	Smartphone and tablet computer	19	9.5
7	Laptop, smartphone and tablet computer	31	15.5
	Total	**200**	**100**

4.3 Result and Presentation of Data

This chapter presented the data collected and analyzed for the study. The analyzed data were used for answering the research questions drawn from the study.

4.3.1 Research Question One

What is the effectiveness of Information and Communication Technology for learning?

Table 4.3.1: Mean responses of the effectiveness of Information and Communication Technology for learning in IBBU Lapai, Niger State.

STATEMENT		Laptop		Smartphone		Tablet Computer	
	N	Mean	SD	Mean	SD	Mean	SD
To what extent do you use mobile devices on university premises	200	3.67	0.228	3.61	0.222	2.56	0.158
To what extent do you use mobile devices to study outside the campus	200	3.31	0.195	2.68	0.160	2.58	0.158
To what extent do you use mobile devices to share assignment during studies	200	3.52	1.513	3.36	1.410	3.24	1.340
To what extent do you use mobile devices to produced textual course assignment	200	2.76	1.147	2.88	1.180	2.59	1.121
I use mobile devices to participating in synchronous discussion via application based on written communication	200	3.76	0.242	3.86	0.248	2.95	0.170
I use mobile devices in participating in asynchronous discussion via social media sites.	200	3.59	0.220	3.49	0.211	3.14	0.180
To what extent do you use mobile devices in working synchronously online with my fellow students?	200	3.68	0.229	3.72	0.235	2.03	0.171
To what extent do you use mobile devices in working asynchronously online with my fellow students on written document?	200	3.70	0.231	3.81	0.243	2.54	0.158
Mobile devices have been useful to me when solving studying related problems	200	3.78	0.240	3.80	0.242	2.95	0.172

Key: SD = Standard Deviation

The result in table two above, shows the mean and standard deviation of the student's responses with respect to the extent to which they have used the available mobile technology devices to learning.

From the result, it shows that respondents use all the mobile devices (i.e. smartphone, laptop and tablet computer) on the university premises to enhance their learning, with mean response for (laptop 3.67, smartphone 3.61 and tablet computer 2.56 was accepted).

Considering the mean scores against the scale used, it is obvious that on the average mean respondent to a very high extent student use the various devices for their learning.

4.3.2: Research Question 2

What are the learning opportunities with information and communication technology?

Table 4.3.2: Mean responses of undergraduate students learning opportunities with information and communication technology in IBBU Lapai, Niger State.

STATEMENT		Laptop		Smartphone		Tablet Computer	
	N	Mean	SD	Mean	SD	Mean	SD
Production of pictorial and or audio-visual content with mobile devices	200	2.86	0.166	3.41	0.195	3.26	0.191
Discussion via video conferencing or video calls with mobile devices.	200	2.50	0.158	2.85	0.165	2.48	0.158
Discussion via phone or skype with mobile devices	200	2.42	1.120	2.67	1.130	2.38	1.124
Working face to face with my fellow students on written document with mobile devices	200	3.12	1.278	3.27	1.357	3.01	1.228
Mobile devices application (e.g calendars) have helped me to manage my time.	200	3.43	1.454	3.63	1.589	3.29	1.368

Mobile devices have helped me to achieve my personal learning goal.	200	3.21	1.324	3.74	1.669	2.79	1.155
Mobile devices have provided me opportunities to use my creativity in my studies.	200	2.96	1.208	3.36	1.410	2.92	1.194
Mobile devices have been beneficial to my learning by enabling me to get up to the minute news.	200	2.83	1.165	2.86	1.174	2.59	1.121
Mobile devices have been useful to me when constructing new ideas on an abstract	200	3.24	1.340	3.52	1.513	2.99	1.220
Mobile devices have provided me with the opportunities to produce textual course work.	200	2.92	1.194	3.66	1.611	2.76	1.147

Key: SD = Standard Deviation

The result in table three above, shows the mean and standard deviation of the studentsresponses with respect to learning opportunities with information and communication technology.

From the result, it's show that a wide range of such opportunities for new learning exist among the respondents. These opportunities include production of pictorial and or audio-visual content with fellow student to aid learning, with mean scores for (Laptop 2.86, Smartphone 3.41 and tablet computer 3.26 was accepted).

The results also show other learning opportunities, mobile devices application (e.g calendar) have helped student manage their time, discussion via video conferencing or video calls, participation in discussion via phone or skype among others.

These platforms as respondent noted, provided learning opportunities and also educational platforms for collaborative learning and sharing of current and authentic academic content.

4.3.3: Research Question Three

How the use of information and communication technology has promoted student learning?

Table 4: Means response on how the use of information and communication technology has promoted undergraduate students learning in IBBU Lapai, Niger State

STATEMENT		Laptop		Smartphone		Tablet Computer	
	N	Mean	SD	Mean	SD	Mean	SD
Being constantly connected with my fellow student via mobile devices has promoted my learning	200	2.95	1.205	3.01	1.228	2.47	1.118
Discussion about someone else's online document (e.g journal) has promoted my learning.	200	2.65	1.128	3.55	1.533	2.84	1.168
Scheduling a meeting with mobile devices has promoted my learning.	200	2.94	1.201	3.13	1.283	2.92	1.194
Instant feedback from mobile devices has promoted my learning.	200	2.64	1.126	2.85	1.171	2.51	1.118
Positively satisfaction with mobile devices in studying has promoted my learning	200	2.58	1.120	3.20	1.319	2.55	1.119
A pre-requisite for workplace using mobile devices has promoted my learning.	200	2.57	1.120	2.93	1.197	2.85	1.171
Development of interest in the learning constant with mobile devices has promoted my learning	200	2.59	1.121	3.15	1.293	2.51	1.118
Learning at your own space with mobile devices has promoted my learning	200	3.24	1.341	2.60	1.122	2.63	1.125
Evaluating my own learning (e.g via journal) with mobile device had promoted my learning.	200	2.91	1.190	3.03	1.237	2.29	1.137
Searching for course related information with mobile devices has promoted my learning.	200	3.05	1.245	3.08	1.259	2.85	1.171
Critically evaluating and analyzing information related to my field of study with mobile	200	2.92	1.194	3.66	1.611	2.83	1.165

devices has promoted my learning

Key: SD = Standard Deviation

The result in table four above, shows the mean and standard deviation of the students responses with respect to how the use of information and communication technology has promoted their learning.

From the results, it is noted that mobile devices have been used by student in many way that have promoted their learning. the mean score for students responses on use of mobile devices to get constantly connected with their mates to promote learning, with mean scores for (laptop 2.95, smartphone 3.01 and tablet computer 2.84 was accepted) followed by searching for course related information with mobile devices had promoted student learning, with mean scores for laptop 3.05, 3.08 and 2.85 respectively.

The average mean shows that, respondents learning is promoted by getting constantly connected with their mates and also getting course related information with mobile technology devices.

4.4 Findings

The major findings of this study can be summarized thus:

1. Majority of the respondents are aware and familiar with the information and communication technology devices.
2. Majority of the respondents indicated they owned both laptop and smartphone devices.
3. Majority of the respondents agreed, the use of information and communication technology has presented a lot of learning opportunities.
4. Majority of the respondent also concord with the use of information and communication technology has promoted their learning.

4.5 Discussion of Findings

The presentation and analysis of the data collected for this study provided some insight into the main objectives of the study, which was to determine the perception of undergraduates students on the use of information and communication technology for learning in Ibrahim BadamasiBabangida UniversityLapai, Niger State of Nigeria. The study is made up 200 respondents from some selected faculties of the university on the issues of how students use mobile devices for learning.

However, the use of information and communication technology has provide different platforms and a lot of opportunities that enhances students learning. The result mention the learning opportunities made available to students by means of mobile technology and the extent to which respondents use the available mobile technology devices to participate in, as well as access the learning opportunities provided.

Base on the analysis of the research question in table 2. The items tend to seek the opinion of the undergraduate student on, to what extent do they use information and communication technology for learning the data collected from the mean calculation indicate that student used mobile technology device available at the disposal on the university premises and also participate in both synchronous and asynchronous discussion via social media sites. This finding was consistent to the report based on flexibility of the devices. According to Seppala and Alamoki (2013) there are two clear cut attributes of the use of information and communication technology in learning first, there exists the situation where the students can separate himself or herself from the instructional process in the lecture room and move to another location while communication through information networks. This flexibility certainly enables students some greater freedom of learning at my place and at my time (Timmis, 2012).

Another distinctive feature of mobile learning is that “it enables learners to enter an information network at the precise moment when necessary by using a portable learning device and a wireless network” (Sappala&Alamaki, 2013).

Based on the data’s computed and analyzed in table 3 all the items was accepted, except item 3 with tablet computer on discussion via phone or skype with mobiles devices. According to Young (2011) states that computer application programmes in mobile devices are worthy of being used as relevant learning aids by students, anywhere or at any place. A typical example is the application of a mobile technology enabling the learner to produce pictures, videos, or animations as a particular topic with their follow learners. Therefore, as a learning opportunity, we need to take cognizance of the reality that not only does now technology endow learners to communicate with their instructors and follow learners but it also enables learners to interact with learning resources and stimulated environment through which information and knowledge can be acquired in solving problem as well as satisfying our curiosity (Sharples, 2010).

Data computed and analyzed in table 4 show respondent agreed with all the items that, use of information and communication technology has promoted the learning. However, mobile information and communication technology has welded a lot of support in students learning due to it portability. Because the device does not carry much weight, they can be carried and taken anywhere in different location where learners can use them to communicate with their males on a specific focus of attention. Mobile technology is always accessible and the accessibility is within reach (Gikas& Grant, 2013). Mobile learning opens the door for a new kind of learning known as here and now learning, learners have access to information anytime and anywhere to perform authentic activities in the contex of their learning (Martin and Ertzberger, 2013).

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

This chapter presented the summary of the study, the conclusion, and implication of finding, recommendations and suggestions for further study.

5.1 Summary of the Study

The aim of this study was to investigate the perception of undergraduate students on the use of information and communication technology for learning, to determine the use of information and communication technology, learning opportunities, how the use of information and communication has promoted students learning and the statement of problem, purpose, scope, significance and research question were all stated, tested and discussed constructively in line with the research topic.

Related literature were reviewed in theoretical framework of information and communication technology the theory of cognitive learning, the Technical and Meaningful Learning (TML) and Enhance Teaching and Meaningful e-learning (ETMel) model of cognitive learning, and review of related literature on students perception towards mobile learning, learning opportunities with mobile technology, how the use of mobile technology has promoted student learning and the instrument used for data collection was a structured questionnaire contained thirty (30) items. The instrument was validated by three (3) experts from Industrial and Technology Educations of federal university of technology Minna. The questionnaire was administered in five different faculties of the university. One hundred (100) respondents were randomly sampled from the five selected faculties including five lecturers from each faculty. The data were analyzed using mean and standard deviation as statistical tools for this study.

The data collected for this study were analyzed and interpreted and the result was presented and organized using a table.

5.2 Implication of the Study

The findings of this study have evolved some certain implications. The study have some significant implication for how undergraduate students use Information and Communication Technology for learning.

The study also indicated the majority of the respondent owned both laptop and smartphone devices for their teaching and learning process.

The study also review several ways at which information and communication technology has promoted their learning and present several learning opportunities. If these finding are accepted and actively implemented by the university and other institution of higher learning, it would promote and enhance the achievement of the goal of education processes of teaching and learning.

5.3 Contribution to Knowledge

The study helps to improve the perception of undergraduate students on the use of ICT in order to help them in their learning process. Therefore the perception identified could the helping in the teaching and learning process of undergraduate students not only in university but also institutions at large.

5.4 Conclusion

This research was conducted in Ibrahim BadamasiBabangida University Lapai, with the aim of investigating students perception on the use of information and communication technology

for learning. The stimulation for this study was drawn from undergraduate students experience of information and communication technology use for learning.

The rational of the study is to provide useful and informative results on undergraduate students perception on the use of information and communication technology for learning, taking into account some learning opportunities offered through mobile technology and how students utilizes these opportunities to promote their learning.

From the findings, it is observed that the use of mobile technology for learning objective is common among the undergraduate students surveyed.

Mobile devices ownership, specifically, laptops, smartphones and computer tablet among the respondents is high. Also as the finding revealed, through various online and offline synchronous and asynchronous platforms, students are able to promotes and enhance their learning using mobile technology.

Mobile devices provide opportunities for sharing of audio and visual academic content in ways that highly which have promoted their learning. With the high level of mobile devices ownership among undergraduate student learning, using mobile technology can be much better.

Respondents however, indicated high number of ownership of both laptop and smartphone devices toward the effective and efficient use of these technology. Therefore, to ensure that information and communication technology offer another steps in promoting students learning, remarkable efforts should be made to ensure the integration of students, school or faculty and technical service provider in a operation and coordinated system of the university setting.

5.5 Recommendations

Based on the findings of the study, the following recommendations were made in order to improve the use of information and communication technology for learning.

1. There is need for the university to invest more in ICT and other related technology as means of not only solving connectivity problem but also improving on the presence of the ICT facilities, especially computers in the classroom and laboratory.
2. There need for the University to maintain constants internet connection and connect more computers to the internet.
3. There is need for more infrastructures in terms of ICT facilities should be pat in place for more practice and easy utilization.
4. There is need for the university to establish more ICT resource centers where all software can be accessed, students packages and all vision of technology for student learning.
5. The university should train in ICT skills and other integrated programs and packages as recommended by UNESCO (2000) curriculum for schools. Clearly a basic level of ICT skill must be achieved but should be followed by an integrated approach to ICT and learning. The objective is to embed ICT firmly into the teaching and learning process, so that it is no longer considered a separate and discrete element such implementation may offer the potential to improve on teaching and learning using modern technology.

5.6 Suggestions for Further Research

Since information and communication technology is relatively a new area in the process of teaching and learning, a lot of research work is needed to be conducted.

This study has exposed many things which could not be covered; therefore the researcher suggests that, Future research should:

1. Investigate the effect of Information and Communication Technology on student performance.
2. Link between mobile technology and ordinary learning in higher institutions of learning.
3. Related studies should be carried out in different learning institution.

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APPENDIX

PERCEPTION OF UNDERGRADUATES ON THE USE SOF INFORMATION AND COMMUNICATION TECHNOLOGY FOR LEARNING,

QUESTIONNAIRE

The questionnaire has been designed to investigate the perception of undergraduate's students of Ibrahim BadamasiBabangi UniversityLapai Niger state, Nigeria, toward the use of information and communication technology for learning. Your response will contribute to the achievement of the objective of their study. Please kindly spare your time and provide answers to the items. Please be assured that any information provided will be treated confidentially and used only for the purpose of the study. Please do not write your name or department since no attempt will be made to identify individual respondent.

Please kindly check ( ) against the option that is applicable to you.

PART ONE:

Demography Data

What mobile devices do you have in your personal use?

Laptop ( ) Smartphone ( ) Tablet Computer ( )

PART II

SECTION A

RESEARCH QUESTION 1

What is the effectiveness of information and communication technology for learning?

S/N	ITEMS	Strongly Agreed	Agreed	Disagree	Strongly Disagreed
1	To what extent do you use mobile devices on university premises (any devices not just your own).				
2	To what extent do you use mobile devices to study outside the campus				
3	To what extent do you use mobile devices to share assignment during studies				
4	To what extent do you use mobile devices to produced textual course assignment				
5	I use mobile devices to participating in synchronous discussion via application based on written communication				
6	I use mobile devices in participate in asynchronous discussion via social				

	media sites.				
7	To what extent do you use mobile devices in working synchronously online with my fellow students?				
8	To what extent do you use mobile devices in working asynchronously online with my fellow students on written document?				
9	Mobile devices have been useful to me when solving studying related problems				

SECTION B

RESEARCH QUESTION 2

What are the learning opportunities with information and communication technology?

S/N	ITEMS	SA	D	A	SD
1	Production of pictorial and or audio-visual content with mobile devices				
2	Discussion via video conferencing or video calls with mobile devices				
3	Discussion via phone or skype with mobile devices				
4	Working face to face with my fellow students on written document with mobile devices				
5	Mobile devices applications (e.g calendars) have helped me to manage my time.				
6	Mobile devices have helped me to achieve my personal learning goal.				
7	Mobile devices have provided me opportunities to use my creativity in my studies.				
8	Mobile devices have been beneficial to my learning by enabling me to get up to the minute news.				

9	Mobile devices have been useful to me when constructing new ideas on an abstract				
10	Mobile devices have provided me with the opportunities to produce textual course work.				

SECTION C

RESEARCH QUESTION 3

How the use of information and communication technology has promoted student learning?

S/N	ITEMS	SA	A	D	SD
1	Being constantly connected with my fellow student via mobile devices has promoted my learning				
2	Discussion about someone else's online document (e.g journal) has promoted my learning.				
3	Scheduling a meeting with mobile devices has promoted my learning.				
4	Instant feedback from mobile devices has promoted my learning.				
5	Positively satisfaction with mobile devices in studying has promoted my learning				
6	A pre-requisite skill for workplace using mobile devices has promoted my learning.				
7	Development of interest in the learning constant with mobile devices has				

	promoted my learning				
8	Learning at your own space with mobile devices has promoted my learning				
9	Evaluated my own learning (e.g via journal) with mobile device had promoted my learning.				
10	Searching for course related information with mobile devices has promoted my learning.				
11	Critically evaluating and analyzing information related to my field of study with mobile devices has promoted my learning				