The Effect of Mobile Networking in Education In the Case of Smartphone and Tablet. Case Study: Eastern Mediterranean University

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We certify that we have read this thesis and that in our opinion, it is fully adequate in scope and quality as a thesis for the degree of Master of Science in Information and Communication Technologies in Education.

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ABSTRACT

This study examined the role that mobile devices can play in students' educational performance and attitudes. In this survey, Data collected from 180 participants from different departments at Eastern Mediterranean University, North Cyprus. The researcher used quantitative method to obtain questionnaires' data in order to conduct surveys.

For obtaining the result of the frequencies the survey analyzed by quantitative approach and the outcomes of the survey determined that most of the students believe that mobile devices have a positive influence on students' educational performance. Also, the study exposed that there is no any major differences between gender, study level, age, nationality and also expenditures per months by the students, However, the study find important differences in the performance and also attitudes of participant through CGPA, Owning one or more mobile devices, departments, daily use of tablet's applications and features for course-related works, daily use of smartphone's applications and features for course-related works, smartphone usage per day for study and usage per day for study on the performance and also attitudes of students when they are using mobile devise such as smartphone and tablets for educational purpose.

Keywords: Mobile devices, performance, attitude

ÖZ

Bu çalışmada mobil cihazların öğrencilerin performansı ve davranışlarında oynadnğı rol incelenmiştir. Bu araştırmada veriler Kuzey Kıbrıs Türk Cumhuriyeti, Doğu Akdeniz Üniversitesi'nde farklı bölümlerde kayıtlı 180 katılımcıdan toplanmıştır. Araştırmacı, nicel veri yöntemi kullanılarak verileri elde etmiştir. Nicel veriler analiz edilerek frekans, Anova ve T-test sonuçları elde edilmiştir. Anket sonuçlarından elde edilen verilere göre bir çok öğrenci mobil cihazların öğrencilerin eğitim performansına pozitif yönde etki edeceğine inandıklarını belirtmiştir. Ayrıca, cinsiyete, yaşa, öğrenim gördüğü sınıfa, uyruğuna ve aylık harcamalarına göre anlamlı bir farklılık yoktur. Öğrencilerin eğitim amaçlı akıllı telefon ve tablet gibi mobil cihaz kullanımları esnasında, genel not ortalamasında öğrencilerin öz nitelik performansı ve davranışlarında, sahip olunan bir veya birden fazla mobil cihaz, bölüm, günlük tablet uygulaması kullanımı ve ders ile ilgili çalışma özellikleri, günlük akıllı telefon kullanımı ve ders ile ilgili çalışma özellikleri, ders çalışırken akıllı telefon ve tablet kullanımı öğrencilerin performans ve davranışları üzerinde anlamlı farklılık vardır.

Anahtar kelimeler: Mobil cihazlar, Performans, Davranış

DEDICATION

I give my explanation effort to my brilliant and beautiful family and companions also my most thrilling obligation goes my tender guardians, Mr. and Mrs. Entesari and Mrs. Marjan Hezarkhani who's their inspirational statements is truly enlivening me to push ahead in spite of the difficulties experienced along the way.

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INTRODUCTION

1.1 Background

Nowadays, mobile devices are becoming very ubiquitous. With the ability of affording portable computing by everyone this is the correct time to consider using mobile devices for education. While ICT in education has been in existence, results have been mixed up. Mobile devices are also. ICT devices that the instructors, the students, their parents, and the ministry of education can benefit from, by providing classroom curriculum through mobile devices. Mainly, one of the local method of education was executed via face-to-face form of instruction where the knowledge and learning activities were all planned and carried out by the instructor. Furthermore, the learning tools were also depended on static materials such as papers for which the materials do not show any information in a dynamic way like motion or continuous movement Nevertheless, there is an increasing interest of educators' and. researchers who introduce new useful methods to improve the teaching and learning experiences. As technology becomes increased and integrated into learning and teaching, the way we teach and learn has been revolutionized. The transformation of teaching and learning caused by technology certainly provided an exciting opportunity to design a learning environment that is realistic, engaging, and authentic and extremely fun.

Furthermore, mobile computing devices support students in everyday activities, these devices provide boundless of information resources anytime. By using these kind of

devices students and teachers can take advantage of new trends in computing and technologies in the classroom.

1.1.1 Definition of Mobile Devices

Some kind of mobile computing. devices is just suitable for transferring data like laptop computers that these devices just provide a relatively small level of mobility, on the other side, Better mobility is given by a smartphone or tablet. Android, iOS or MS Windows Phone is usually these devices' operating system and the benefits of these devices are mainly relatively long working time. Instant response to user commands, software and hardware Extensibility and communication abilities. Initially, there are Wi-Fi and the GSM technologies and its extensions. EDGE, LTE etc for connecting to the internet for educational or non-educational purpose. Currently, very popular tablets are out. Tablets are new categories of mobile devices, more students' use the tablets in the education, most frequently used are. Android tablets (76 %) and iPad (iOS 24 %). Mobile devices are currently the most commonly used for communication or reading textbooks. The rate at which mobile devices (tablet, smartphone) increases also allows you to use multimedia materials (audio, video, 3D models etc.). Tablets can serve not only to view teaching materials. Students can. Interact with tablets, draw diagrams, take notes, handle home works, watch video lectures, etc. The most suitable device for educational purpose seems to be a tablet with a finger-touch screen and good size. Its dimensions and weight around 0.5 kg are suitable even for carrying to the university.

1.1.2 Population of Mobile Devices' Owners

It was recorded that in the third quarter of. 2012 that the universal population of smartphone owners was up to 1billion. The industry reached a new milestone comprising 55 percent of total mobile purchases. The revenue of the global smartphone

industry increased to $74 billion Smartphone applications are also becoming a huge industry in their own right with analysts predicting. Global sales of smartphone applications to reach US$ 38 billion by 2015. As the market share of smartphones increases, technology is changing the way individuals interact with information daily.

When iPhone started sells five years ago, they were very expensive. The arrival of Android mobile software by. Google in late 2008, the finger touchscreen technology was introduced, hence smartphones prices were brought down.

1.1.3 A New Strategy for Instruction by Using Mobile Devices

The survey, conducted on mobile IT in higher institutions by the. Educause Center for Applied Research [ECAR] in 2012 explains that adoption of mobile computing devices like cell phones, smart phones, and tablets in higher educations is piloted by students. Out of. 100 percent, 67 percent surveyed students believe mobile devices are vital to nowadays academic success as they use them for their academic activities. The increased omnipresence of mobile computing devices on university campuses have the ability to create fresh options for students and exploration of social media and mobility as a strategy for instruction. These devices provide opportunities for students to access the course contents online and interact with instructors and course mates/colleagues everywhere they might be.

Furthermore, Smartphones allow users to work, play and stay informed with events anytime and anywhere. These devices are becoming an. increasingly integral and habitual part of modern life.

By integrating information technology (ITs) in education, especially in higher education, it is possible for students to enjoy higher level of education; even it can be beneficial for society to use mobile IT devices in (higher) education at large.

The sharp and newest upsurge of mobile. IT devices is a necessary development for education. Mobile IT devises can play a positive role in the quality of education in several ways. For instance, students can work on their assignments or access information (including podcasts, see Evans, 2008) anywhere and anytime. Mobile IT devices can also help students to develop their peer to peer collaboration skills (Lauricella and Kay, 2010). On the downside, these IT devises can negatively influence the student's concentration on the subject during lecture.

Educators and curriculum developers also Need to adopt "mobile 21st-century tools for 21st-century learners". Modern mobile devices enable new possibilities for learning, although they were not designed originally for educational use. They join recent learning tools with the old ones, and facilitate new possibilities for learning they join recent learning tools with the old ones, and facilitate new possibilities for learning; paper, books, pencils, cameras, radio, computer and phones support learning which is personal and controlled by the learner.

Recent smart phones have just become pervasive and can be used for multi.-purpose tasks, they are accessible and can be reached around the world joined with the spontaneous development cost reductions in mobile technologies, both professionals and students can develop their working capacity and use technologies that allow them to manage, visualize, discuss, and emerge every type of model and project more efficiently in both 2D and 3D.

For instance, the trend of using mobile IT devices such as smartphones and tablets at the point of care has become growing in nursing practice. The significant potential of mobile. Devises can support nursing students' decision making and also patient care planning by to bring relevant and evidence-based resources quickly to the point of care. Institutions and nursing instructors are being advised to encourage nursing students to use their mobile IT devises (for instance, tablets) to record activities in clinic, helping students to access reputable information sources and also ensure that nursing students understand how to use mobile devises in alignment with trusted and world-class standards.

1.1.4 What is M-LEARNING?

M-learning or mobile learning is an educational environment when the teaching and the learning proses is supported by the mobile devices such as Web-Pads. Ultra-Mobile PCs, Tablet PCs. Personal Digital Assistants or (PDAs) and Smartphones. Actually, Mobile learning is a new concept. Mobile learning is an emerging, and rapidly expanding field of educational research and practice across schools, educational institutions as well as in the work places. By using these devices students and instructors can connect to Internet through wireless communication technologies. However, M-learning is not just E-learning with mobile devices. Information is then accessed from anywhere, at any time and also by anyone (personally or collectively) while mobile learning environments focuses on mobility. Modern mobile devices enable new possibilities for learning although they were not designed originally for educational use. They join recent learning tools with the old ones, and facilitate new possibilities for learning.

Learning through mobile phones:

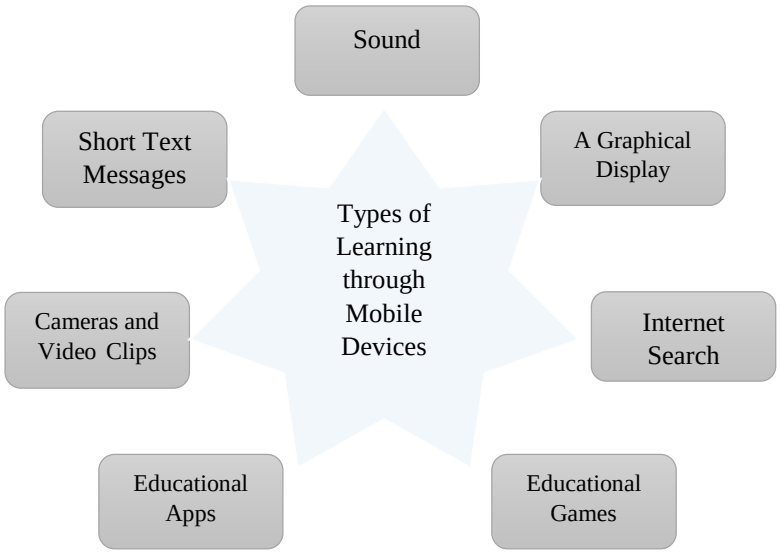


Figure 1: Learning through Mobile Devices

1.2 Questions of the Study

This research designed to responses questions on the bellow with the aim of reaching the purposes:

1. How using mobile computing devices for study purpose will affect students' performance and also attitude?
    1.1 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' sex (male or female)?
    1.2 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' oldness?
    1.3 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' study level (Bachelor, Master and PhD Degrees)?
    1.4 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' CGPA?
    1.5 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' owning one or more devices?
    1.6 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' department?

1.7 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' gender (male or female)?

1.8 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' their monthly expenditures?

1.9 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' use of the smartphone per day for study purpose?

1.10 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' use of smartphones' applications and features per day for study purpose?

1.11 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' their use of tablets' applications and features per day for study purpose?

1.12 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' use of tablets' applications and features per day for study purpose?

1.13 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' their preferring devices in the university?

1.14 Is there any important differences in the students' performance and also students' attitude educational of using mobile devices for course related works attribute to students' internet access location?

1.3 The Purpose of the Study

The present study aimed to investigate and examine students' performance and attitudes regarding to the educational use of mobile computing devices such as smartphones and tablets and furthermore, to define exactly which variable such as: nationality oldness, sex, faculty, CGPA, expenditures per month, owning one or more mobile devices, level of study, location of internet connection, preferring device for study in university, daily use of smartphone for study, daily use of tablet for study, daily use of smartphones' applications and features for study purpose and daily use of tablets' applications and features for study purpose influencing students' performance and also attitude in the learning atmosphere while they are using smartphone or tablets.

1.4 Assumptions

There are no any statically major differences in the performance and also attitude of the participated students' attribute to the their nationality, oldness, sex, faculty, CGPA, expenditures per month, owning one or more mobile devices, level of study, location of internet connection, preferring device for study in university, daily use of smartphone for study, daily use of tablet for study, daily use of smartphones' applications and features for study purpose and daily use of tablets' applications and features.

1.5 Significance of the Study

By using this study it is imaginable to discover students' performance and also attitude once using mobile devices for educational purpose by them in the learning atmosphere. By using the result of the study, it is possible to see the result of the integrating mobile

devices and learning process. Documents is provided by the research to understand what kind of factors may impacts the performance of university students toward using mobile technology inside or outside the campus.

1.6 Challenges

It's obvious that educational use of mobile devices has a positive influence on the students' educational career and mobile devices can support students by improving their ability to connect to the course contents or using the internet as a perfect course source regardless of their location at any time. However, there are some downside about using technology and mobile device in education, especially during the lectures. And also there are some requirements before applying ICT technology such as mobile devices for educational use. On the down side, by using mobile devises for study during the lecture students can be districted from the lecture. Also, another challenge is to increase the both instructors and students about the culture of educational use of mobile devices, especially, during the lecture.

1.7 Limitation of the Study

The following are the limitation of the present study

1) Students who play a part in this study were 180 from University of Eastern Mediterranean University, which is 18120 and it's divided into two genders; 63% male and 37% female students.
2) In this study, the students were selected randomly to participate furthermore the study included most of the departments of the university.

1.8 Definition of Terms

- Educational technology: creating managing and using study by using technological process and resources

- 21-centary person: is a person or student who has born during integrated technology.
- Digital immigrants: digital immigrants is a person who has born eliear than emerging technology.
- E-learning: once a learning process happened through using information and internet technology devices.
- M-learning: it is a new way of the learning process by using mobile devices in order to facilitate the learning also this way will help to improve the learning environment and outcome. (Ally, 2009)
- Attitude: this a conviction about any topic and it is inclination and feelings, prejudice or bias and idea.
- ICT: which stand for the Information Communication Technology and it is a collection of technological tools in order to communicate, store and manage information.

1.9 Conclusion

It is obvious that mobile computing devices offering big advantages for education compared to laptops computers and desktop computers because they have lighter weight and they are flexible and its possible to makes them far superior for digital reading, accessing to the internet for study and accessing of content and so on. Again, their capability to be instant.-on and switch fast among applications makes learning activities to proceed with little or no delay. Furthermore, the finger-touch screen interface allows a high degree of user interactivity. And, they can be easily moved about with than laptops. On the other side, this way of teaching and learning would be more efficient and academic that first make the requirements of this new teaching way then applied during lecture.

Chapter 2

LITERATURE REVIEW

Due to improvement in information and communication technology tools, such as mobile phones, smart phones, tablets and handled computers, the education face is changing from the traditional method of teaching and learning of modern methods of teaching and learning. One of the new educational methods is m-learning (mobile learning) which could play an important role in today's teaching and learning. The concentration of m-learning environment is on mobility. By using mobile devices in the learning process students can select the way of interacting with the course contents, other classmates and teachers at any time and regardless of where they are located. Mobile devices become ubiquitous in the world so it's time to consider and evaluate the impact of using mobile computing devices in education. By using this section researcher propose to extant a literature review which is related to the performance and also attitudes of the university students about educational use of mobile devices and attitude is the model that importance and aids for different knowledge. (NET-S) claims that positive performance and attitude was developed by students.

Here are some summarized articles related to this study:

ECAR group which stands for Educause Center for Applied Research, 2012, their study focused on students' experience and perception about integrating mobile computing devices such as smart phones and tablets onto education and the role that mobile computing devices can play in their academic success. The outcome revealed

that most of the surveyed students believe that mobile devices can create new options and educational opportunity for higher education students and also these devices can play an important role in their academic success. The recommendation of their study was about determining the potential long-term impact of mobile computing devices has on the higher education learning environment.

Yeolib Kim, Daniel A. Briley & Melissa G. Ocepek (2014), in their study aimed at exploring about the effects of predictors such as gender, age, education, and income in using smart phone and smart phone application use in a large diverse population representative South Korean sample(N=9482). The outcome is investigated that generally, younger, educated, and wealthy individuals tend to use smart phone and smart phone application more. The result of their study showed that from 4154 smart phone users 238 (25%) individuals use educational applications.

Martin B.W. Kobus & Piet Rietveld & Jos N. van Ommeren (2012), their study examined the ownership versus on-campus use of mobile devices such as smart phones, tablets and laptops computers in one of the Dutch university students. In this paper the ownership of laptop computers, smart phones, and tablets was tasted. The result released that almost all the students own at least one of the mobile computing devices and ownership rates of tablets and smart phones is high and the income elasticity for smart phone is low, but income elasticity for tablets is somewhat higher. These statistics show that all the students nowadays have a high probability of owning mobile IT devices.

Danakorn Nincarean (2013) did a research about Argument Reality (AR) and the influence of combining this new technology with other technology such as mobile

devices into education and how this process will affect student's performance. According to this paper, by using the capability of Argument Reality it is possible to merge the virtual and real world together and this merging can improve the quality of teaching and learning, especially, when educators use the combination of Augmented Reality with other technologies such as mobile devices. Mobile Augmented Reality (MAR) is the product of connecting Augmented Reality with mobile devices. The outcome of this study examined that overall participated in this surveyed felt motivated and enjoyed and this positive educational effect leads to achieve higher levels of engagement in learning performance.

Catherine Marinagi & Christos Skourlas (2013) in their research study, try to explore the effect of implementing ubiquitous computing mobile devices such as smart phones and technology in the higher education classroom of the future and how it is possible to employ the combination of them into learning environments. The result of their research determined these ubiquitous devices can encourage student's involvement in the learning process and also, it is obvious that the features of mobile computing devices can improve the environment of learning process in the near future, as mobile devices gaining power their price is becoming lower.

Glynda J. Doyle & Bernie Garrett (2013), studied on identifying the effect of integration of mobile devices into undergraduate and graduate nursing curricula to explore the potential use of Rogers' Diffusion as a framework to guide implementation of mobile computing devices such as smart phones and tablets into nursing curricula. The result of their study investigates that using mobile devices can provide benefits to nursing learners, however, there are some challenges to implementing these devices

into nursing curricula. These challenges include the lack of funding, administrative support and also time to educate students and teachers as well as faculty.

Andrew Lepp (2014), did a study on college students about the cell phone use, personality and leisure and what is their perception about using a cell phone. According to their research most of the students are luckier to use their cell phone for leisure rather than education. They classified student into three groups based on their cell phone use and their personality traits then compared each group's leisure experience. The outcome of their work produced a valid, three-group solution: high user (over 10 hours per day) and two low user groups (3 hours or less per day) that characterized by personality (extroverted and introverted). After all, the findings suggest that for reducing leisure time cell phone use the traditional leisure education can help, particularly among those classified as high frequency users.

Roslistav Fojtik (2014) did a research upon mobile technologies and education. He pointed out that technology has changed the education face and the way of learning and teaching. Nowadays, students, especially distance students, need to access their study material anytime in everywhere. According to the result of this study it is obvious that mobile devices such as smart phone could enhance the learning in primary, secondary school and also universities and the effect of this new learning way would be more and more in future. This paper also describes the development of mobile applications for users with special needs. The outcome of his study showed that the rapid improvement of mobile computing devices is not only in technical side but also in educational side and applications for education. Because by using mobile technology in education students have better choices of learning means, He

recommends that educating institutions should adopt their method of teaching for mobile technologies.

Jeffrey R. Stowell (2014) in his study of different polling response received through mobile devices versus clicker by students after answering exactly same multiple-choice questions, and also what instructional obstacles lecturers and learners may meet throughout the course. According to the result of his research, in some cases such as *psychology of learning* students using mobile devices had considerably smaller amount of true answers and also further missing questions compare to clickers users, although in some cases like *Biological Psychology* there was no significant difference in responding by students. This result showed mobile devices presently are less reliable comparing to the traditional clickers.

Blanche W. Bannon & Kevin Thomas (2013) did a research about the importance of teacher's age in their perception of using mobile phones such as smart phones in the classroom. Teachers were divided into three groups based on their age: less than 33, 33-49 and over 50 years old. The factors that teachers were evaluated by are the type of mobile phones that they owned, they were supportive about using mobile phones in the classroom or they were not, their perception of the benefits of mobile phones Features in school-related work, and their perception of instructional barriers. The outcome of their research showed that the age of teachers can influence their perception and it is an important factor. According to the result of this study there were no significant differences between groups 1 and 2 in the finding about all items, however the older teachers, group 3, were less likely to own a smart phone and also they were less supportive on all the items.

Mehmet Kesim & Yasin Ozarslan (2014), in their article 'Augmented reality in education' provided a definition about augmented reality and its possibilities for education. The outcome of their research investigates that by using augmented reality, it's possible to combine real and virtual world and also learners can interact with 3D information, object and event in a natural way. According to this paper it's obvious that augmented reality can play an important role in education. This paper emphasizes that there is a big need to design learning activities for augmented reality by instructional designers.

Jongpil chean (2012), did a study on college student's acceptance to adopt mobile devices in their course-related work. The finding of his research showed, from 177 college students, that their acceptance of m-learning is reasonably good and the significant factors such as attitude, subject norm, and behavior control can influence student's intention to use mobile devices in their course-related work, positively. The outcome of their study emphasizes that to build m-learning implementation phase, higher institution should implement strategic efforts. (12) Vera Gehlen-Baum (2014), did a research to examine the effect of using mobile devices such as smart phone for lecture-related and –unrelated activities by students. Mobile devices may enhance student engagement in course-related or unrelated activities. The result of this study showed that students prefer more school-unrelated activities. Furthermore, smart phones have a great potential of distracting the student during a lecture.

David Fonseca (2013), in his article he described the implementing the technology of Augmented Reality in architecture projects by students of architecture and building engineers. According to the results of this article using mobile computing devices leads to student's motivation and significant correlation with academic achievement. The

outcome confirmed that by using AR technology students felt motivated and satisfied. Furthermore, using from the AR technology on mobile phones in architecture offers the opportunity for visualizing different stage of the process.

According to E.C. Boling, M. Hough, H. Krinsky, H. Saleem, and M. Stevens (2011) study, they examined instruction's and student's perception about the online learning environment and setting. Researchers selected a qualitative research method to evaluate an operative online learning practice. They focused on course content delivered and instructor method, as defined by students. The outcome of their research prepared information for lecture improvement and pedagogies, and also proposed new opportunity for further research. Sam Goundar (2011) did a research to explore the potential impact, opportunities and issues in regards to using and merging mobile devices in education. Already, some educational institutions are using mobile devices, how mobile devices affect student's result? What type of technology and mobile devices are being used? What is teacher's perception? According to his article stockholders (the teachers, the students, their parents and education providers) can benefits by correctly deploying mobile devices into classroom curriculum. The result of this study is showing that there is some difficulty to implement mobile devices; for instance some teachers argue that mobile devices are useless in education and they can distract students from the content of the course. However, the positive effects of using mobile devices in education are more and using mobile devices can help student to better understanding and educational success. Furthermore, the price of these IT devices is becoming lower, while mobile devices are gaining power.

Members of the Pennsylvania state learning design team (LD team), (2011), did a research study to explore how mobile computing devices could be utilized to make

new opportunities and educational options for adult learners. Key goals of their research study were the assessment of the current state of mobile learning, what kind of information and educational contents are important for learners to receive them through mobile phones, and to determine student's motivation when they receive course contents on their mobile phones. The result of their work shows that m-learning have not replaced traditional learning yet, but it is obvious that m-learning supplement the traditional one. It's clear from this paper that using mobile devices for course-related work makes students more motivated to learn and this way of teaching helps students maximize their learning.

Sanna Jarvela, piia Naykki and Jari Laru (2007), their paper presented their three design experiments on mobile collaborative learning to investigate novel ways to learn with smart phones. According to result, wireless networks and mobile features can provide new opportunity for bridging different content, face to face or virtual, in higher education.

Zolf Genc (2011), his study aimed at investigating how preschool-age children's parents use their mobile phones and what is their perception about using technology. 85 parents of different preschool in turkey attended in this study. The outcome relieved that most parents use mobile devices such as smart phone as a discipline tool or as a reward, although some parents believe that using mobile devices by preschool-age children have a negative impact on them. On the other hand, some parents shared positive opinions about the effect of using smart phones on children digital life in the near future.

Karim Sevari (2012) in his research, he evaluates the advantages and disadvantages of using mobile phone in teaching and learning. He used an analytical method. He pointed out several positive effects of using mobile phone in education, such as better understanding of difficult concepts and using video clips or recording teacher's voice during lecture. Furthermore, there are some types of learning through mobile phones such as learning with sound or learning through an internet search. On the other hand, he also emphasizes some disadvantages of using mobile computing devices during lecture such as cheating or sending short messages during lecture. The overall outcome of his research released that there are more advantages compare to disadvantages of using a mobile phone.

As a conclusion, It is obvious that mobile computing devices offering big advantages for education compared to laptops computers and desktop computers because they have lighter weight and they are flexible and its possible to makes them far superior for digital reading, accessing to the internet for study and accessing of content and so on. Again, their capability to be instant.-on and switch fast among applications makes learning activities to proceed with little or no delay. Furthermore, the finger-touch screen interface allows a high degree of user interactivity. And, they can be easily moved about with than laptops. On the other side, this way of teaching and learning would be more efficient and academic that first make the requirements of this new teaching way then applied during lecture.

Chapter 3

METHODOLOGY

The present study focused on considering and surveying the attitudes and performance of the target group regard to using technology and mobile devices such as smartphones and tablets for course-related work during lectures or wherever they are located. Methodology part purposes to the following requests:

The researcher aimed to understand University students' attitude while using mobile technologies for course-related works and also to figure out differences in the performance and also their attitudes of participated students according to their: Faculty, Nationality, Sex, CGPA, Oldness, Level of Study, Internet Connection, Monthly Expenditure, Owning Mobile Devices, Daily Smartphone Use for study, Daily Smartphone's Applications for study, Tablet Use for study per day, using Tablet's Applications for course-related works and Carrying Selecting Device to the classroom or campus.

Researcher applied techniques to gather records and examination data in this sample study.

3.1 Research Methodology

Quantitative research approach used by researcher to collect and then analysis data to complete the survey. This tactic helped examiner to acquire information and also results and the main reason for using this kind of approach is that could facilitate info from the mark individual in a small time. Also, assembling data from students' demand

planning a examination. On the other hand, quantified data were used to test hypotheses and detect patterns. Quantitative research consists of literature review, data analysis, and data analysis and instrument development and conclusion phases. All the stage and quantitative approach include in the figure below.

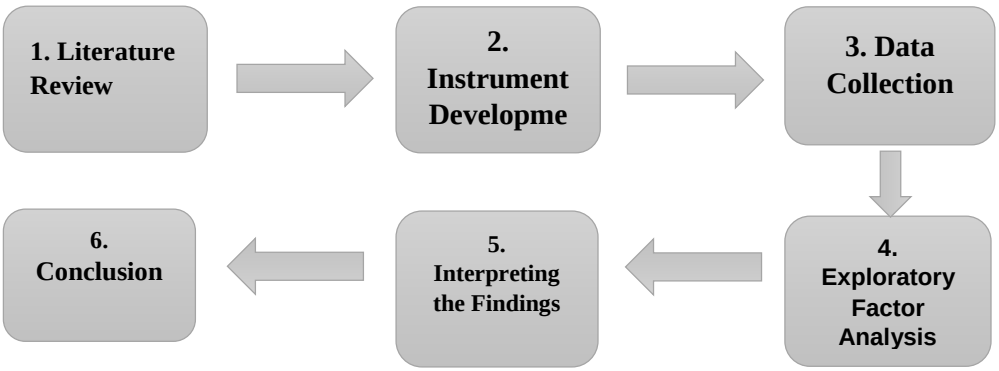


Figure 2: The Phases of Quantitative Method

3.2 Reliability and Validity

Eastern Mediterranean University students in fall semester 2015 were 18120 students that woman students form a bit more than 37% of the population and male students shape about 63% of the total university population. In this case, the size of the sample is important for achieving the validity and reliability; furthermore, generalizing the result correlated with sample size (N). The researcher calculates the size of the sample through $N \geq 50 + 8 \times M$ formula that M show independent variables, (M) number is 14. By using this recipe the size of the sample should be $N \geq 162$ that shows 162 participated is a passable number for this study.

3.3 Sample

Different form of sampling exist such as; Random Sampling, Quote Sampling and Purposive Sampling pointed out by Ajay & Micah (2014). Also, according to them in order to select and calculating sample size each way of sampling is different. To collect

data from students of the University the random sample is selected in this study sample and the main reason for selecting a random approach is that this kind of sampling make available high accurateness of estimation of factors. The same chance of inclusion and each part in model and the chance of selecting students is non-zero in this sample. Ross (1978) pointed out that random sample make available an equal chance of selection and this kind of method of sampling provides hugely use of random sampling in education, this kind of sampling leads to high accuracy in the generalization of the result, in this sample study, random sample has selected and study has surveyed the majority of the faculties in the Eastern Mediterranean University.

3.4 Arrangement

The review in this present study planned to examine the attitude and performance of the Students' while they use mobile devices for educational purpose, regardless of their location in any time to understand which elements may affect their performance and also attitude through their course-related works. Moreover, what is the influence of these devices such as; smartphone and tablet on their educational career? A questionnaire of the students' attitudes and performance was the main instrument of the study. The researcher designed the questionnaire himself through reading the previous literature. The questionnaire consists of two parts; the main first part is about student profile and information and the second one is about attitude and performance of the students in the target group. The researcher divided the profile part into two sections: demographical elements are the first section that includes; faculty, Sex, Nationality, CGPA, also CGPA is divided into four part by the researcher; 0.0 to 1.0, 1.01 to 2.00, 2.01 to 3.00 and 3.01 to 4.0, and Oldness, that is divided into five part; smaller than twenty years old, from 21 to 25 years old, between 26 to 30, between 31 to 35 and the last one more than 35 years old. Finally, the last demographic factor is

the level of the study, which divided into six classes; bachelor degree (1st year students, 2nd year students, 3rd year students, 4th year students), master degree and PhD degree. Second section including questions focus on ability of internet connection, monthly expenditure in U.S. dollar currency, owning mobile devices, the daily smartphone used for study, the daily smartphone applications and feature used for study purpose, the daily tablet used for study, the daily tablet applications and feature used for study purpose and preferring devices for carrying to the university for study.

The third of the questionnaire included 31 items related to the student's attitude and performance toward use of mobile devices for course-related work indoor or outdoor of the class. The liker-type scale was selected by the researcher and students answer each question according to like style measure by choosing just one of the bellow responses: sorted by positive attitude from 1 to 5; strongly-agree is the number one, number two is agree, number three is undecided one, number four is disagree and also the last one strongly-disagree as number five.

Item 1, examined if the using the MDs in the classroom is enjoyable or not. Item 2, detected by using MDs students can learn better or not. Item 3, aimed to know about feeling motivate by students in the lesson while using MDs. Item 4, asked student opinion about using ETs in the learning process and this is adequate or not. Item 5, aimed to know the opinion of the students about the influence of the lecture's age in his/her perception about using MDs in the learning process. Item 6, asked about the student's perception about the improving teacher's and student's culture about using MDs. Item 7, measured students' belief toward using MDs in future education. Item 8, asked student's perceptions about benefit of using MDs during lecture. Item 9, measured student's belief toward the benefit of learning the usage of the MDs. Item

10, asked about student's preference about using computers for writing reports and course-related assignments. Item 11, examined students' preferences about using MDs in education. Item 12, check the degree of student's concentration while using MDs during lecture time. Item 13, examined the opinion of the students about the effect of using MDs on the speed of student's learning process. Item 14, asked students that they board when MDs are used in the learning process. Item 15, examined students' belief toward the need of MDs in education. Item 16 in the survey aimed to know the view point of students whether the beneficial use of MDs in education. Item 17, asked students about their opinion about the necessity of MDs in education. Item 18, explored the influence of MDs on improving student's motivation. Item 19 explored if using MDs assist students to develop skills related to the courses. In item 20 researcher asked the effect of using MDs to understand difficult courses. Item 21, this item intended to know if MDs helps students to follow the course better. . Item 22 explored if using MDs assist students to increase their academic performance. . Item 23 explored if using MDs assist students to increase their academic confidence. Item 24, detected if students' performance is not affected from the use of MDs in classroom or not. Item 25 explored if using MDs assist students to do their academic homework faster. Item 26 asked students if MDs allows students to apply the acquired knowledge.

Item 27, the relation between students' stress and doing homework while using MDs. Item 28 examined if the on 30, asked students if they use MDs like internet for educational purpose or not. Eventually, the last item, item 31, intend to know about their perception about using MDs in the study.

3.5 Data Collection

The questionnaires distribute to more than 180 responders, according to the size of the sample N≥162, in the University of Easter Mediterranean to answer the questionnaire

items also to recovery after finishing the process of the responding. The researcher distributed all the 180 questionnaire papers in English language among the participated students. Enough time were given it to the students by researcher to carefully complete the questionnaire and also to answer without any intervention that will effect students' answers. All the questionnaires formulated in a simple way to avoid mixing and complicity by the students and this simple way leads to better understanding by the participants. 180 was the total number of questionnaires that collected by the researcher.

3.6 Methods of Analysis

Analysis process divided into two stages, in the first stage researcher gives codes for all the dependent and independent variables in this study also researcher analyzed data in the SPSS program which is stand for Statistical Package for Social Sciences For the second stage analysis final process in order to reach the result. Moreover, the descriptive statistics like frequencies and percentage to show the relation of independent variables. Finally, researcher used T-test Anova test to determine the assumptions in this paper.

Chapter 4

FINDINGS

4.1 Regularity

Table 1:Department Frequency

	Department	Frequency	Percentage
1	Molecular Biology (Genetic)	11	6.6
2	Industrial Engineering	10	6.0
3	Chemistry	2	1.2
4	English Language Teaching	6	3.6
5	Pharmacy	14	8.4
6	Information Technology	20	12.0
7	Mechanical Engineering	20	12.0
8	Civil Engineering	13	7.8
9	Marketing Management	10	6.0
10	Tourism	6	3.6
11	International Relations	12	7.2
12	CITE	5	3.0
13	Business Administration	19	11.4
14	Architecture	18	10.8
	Total	166	100.0

Table 1 shows student's departments, frequency of each department and the percentage of each department in this study sample.

20 students participated in the sample from each of Information Technology and Mechanical engineering departments with the percentage of 12%. 19 students from

Business Administration department, 18 from Architecture department, and 14 from Pharmacy department, 13 students from civil engineering department and 12 students from International Relation department.11 students attended in the study sample from Molecular Biology (Genetic) department. Departments' frequency of Marketing Management and Industrial engineering were similarly 10 with percentage 6 % of the sample size, 6 students attend from Tourism and English Language Teaching departments. The lowest percentage of participated students with 5 (3 %) and 2 (1.2 %) are belong to CITE and Chemistry departments, respectively.

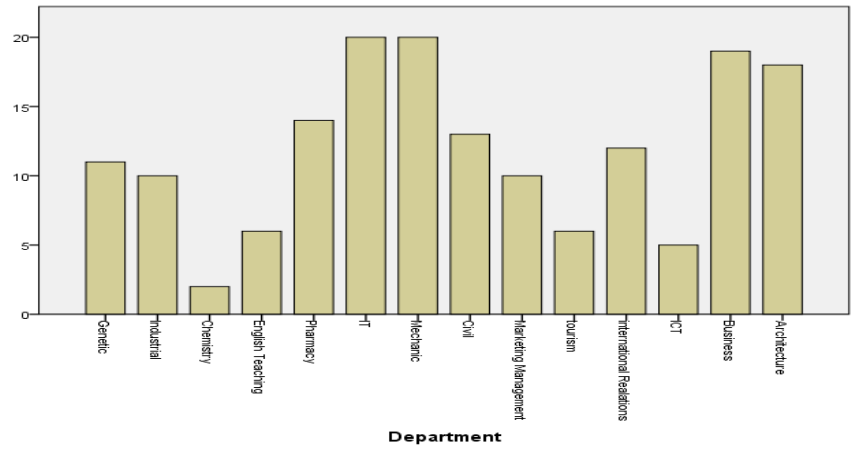


Figure 3: The graph shows the number of participants in this sample study according to their department.

Table 2: Nationality Frequency

	Nationality	Frequency	Percent
1	Iranian	30	18.1
2	Nigerian	34	20.5
3	Syrian	10	6.0
4	Cypriots	19	11.4
5	Azerbaijani	10	6.0
6	Lebanese	7	4.2
7	Turkish	29	17.5
8	Palestinian	9	5.4

9	Cameroon	10	6.0
10	Jordanian	8	4.8
	Total	166	100.0

Table two presents the student's Nationality in the study sample and the frequency of each one and also the percentage of the departments in the study sample.

The most students in the sample are from Nigeria, Iran and Turkey with percentage of 20.5% (34), 18.1 % (30) and 17.5 % (29), respectively. Also, in this study 19 students attended from Cyprus. 10 students from each of Syria, Azerbaijan and Cameroon. 9 students from Palestine, 8 students from Jordan and also 7 Lebanese students participated in the study sample.

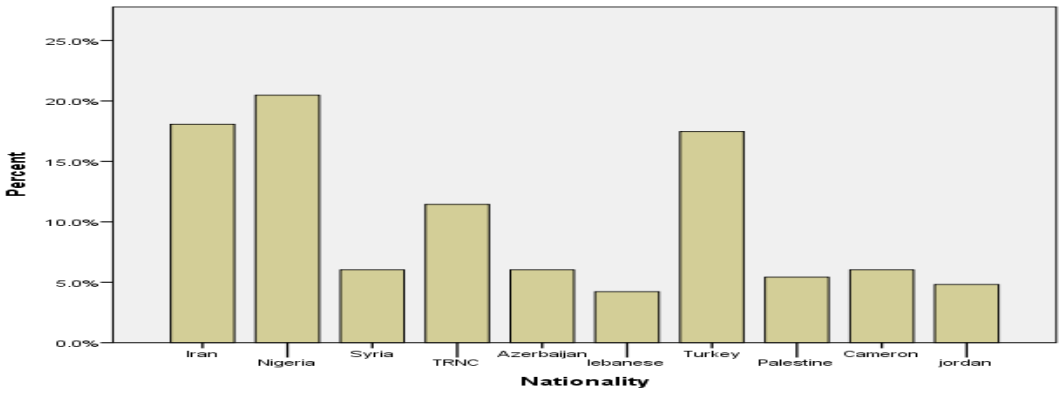


Figure 4: The Graph Shows the Number of Members in this Sample Study Affording to their Nationality.

Table 3: The Gender Frequency

	Gender	Frequency	Percent
1	Male	101	60.8
2	Female	65	39.2
	Total	166	100.0

In term of gender, table 3 indicates that there are 101 (60.8 %) male, out of 166, and 65 of participants are female with percentage of 39.2 %.

Table 4: CGPA Frequency and Percentage

No	CGPA	Frequency	Percent
1	0.00 - 1.00	2	1.2
2	1.01 - 2.00	17	10.2
3	2.01 - 3.00	66	39.8
4	3.01 - 4.00	81	48.8
	Total	166	100.0

Table 4 shows that the CGPA of 48.8 % (81) participants is more than 3.01 (out of 4), CGPA of 66 participants (39.8) is more than 2.01 and less than 3.00. CGPA of 17 participants is between 1.01 and 2.00 and just CGPA of two participant with percentage of 1.2 % are less than 1.00.

Table 5: The Age Frequencies

No	AGE	Frequency	Percent
1	<=20	37	22.3
2	21-25	72	43.4
3	26-30	39	23.5
4	31-35	14	8.4
5	>35	4	2.4
	Total	166	100.0

Table 5 shows that 4 of the participants are more than 35 years olds with percentage 2.4 % and 14 students their age more than 30 less than 35 with percentage of 8.4 %. The number of student that their age is between 26 to 30 is 39 students with percentage of 23.5 %, the biggest age group of participants is group number two (21 to 25 years old) with 72 participants that their percentage in this sample study is 43.5 %. 37 of the students are less than 20 years old with percentage of 22.3%.

Table 6: Study Level and Frequencies

NO	Study Level	Frequency	Percent
1	1st year	21	12.7
2	2nd year	43	25.9
3	3rd year	32	19.3
4	4th year	26	15.7
5	Master	23	13.9
6	PhD	21	12.7
	Total	166	100.0

According to the information provided by the table 6, 21 students were in their first year, 43 in second year, 32 in the third year and 26 in their fourth year. Totally, 122 undergraduate students with percentage of 73.6 % were involved in this study. The number of master students they were involved is 23 with percentage of 13.9 % and 12.7 % of the study sample are PhD students.

Table 7: Internet Connection Ability

No	Internet Connection	Frequency	Percent
1	Home	37	22.3
2	Dormitory	20	12.0
3	Mobile Devices	37	22.3
4	Internet Café	1	.6
5	Home and Mobile Devices	51	30.7
6	Dormitory and Mobile devices	15	9.0
7	Mobile Devices and Internet Cafe	5	3.0
	Total	166	100.0

Table 7 indicates that in this sample study 51 students with the percentage of 30.7 % connect to the internet at their home and through mobile devices. 15 participants with percentage of 9% connect to the internet through both dormitories and mobile devises

and just 5 with percentage of 3% students using internet through mobile devises and internet café. 37 with percentage of 22. 3% students prefer to connect to the internet just at their home, 20 participant using internet just at their dormitories and 37 student with percentage of 22.3 connect to the internet just through mobile devises.

The pie chart below shows the percentage of connection ability by students in this sample study, 46% connecting through mobile devices, 52% connecting at their homes or dormitories and just 2% were connecting from internet cafés.

Table 8: Monthly Expending Frequency and Percentage ($)

No	Spending Monthly	Frequency	Percent
1	<350	59	35.5
2	350-500	64	38.6
3	500-750	32	19.3
4	750<	11	6.6
	Total	166	100.0

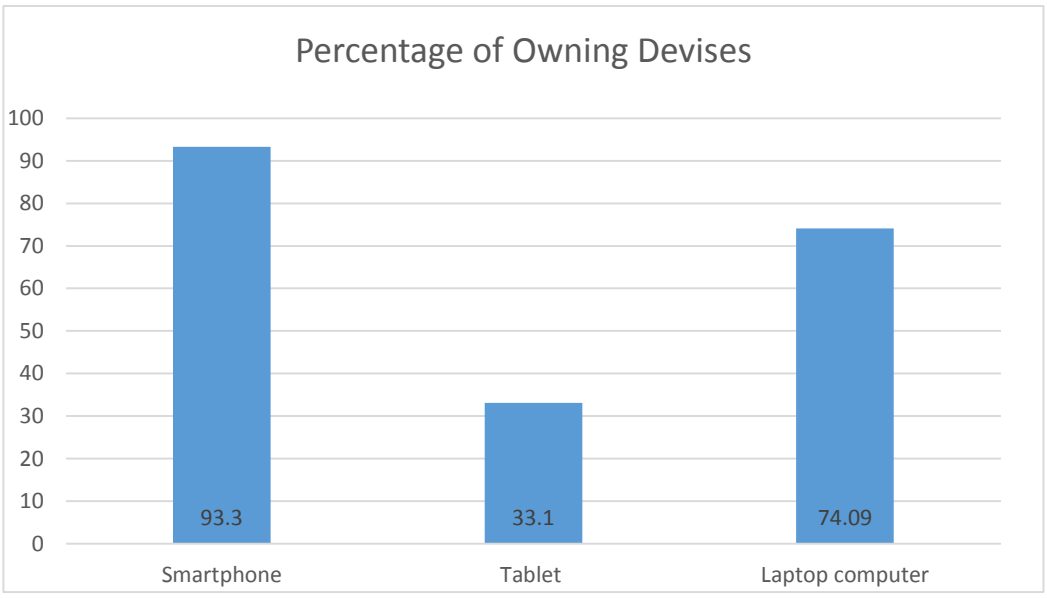
According to the table 8 there are 11 participants with percentage of 6.6% spends more than 750 dollars, 32 students with percentage 19.3 % spending more than 500 and less than 750 dollars per month, 64 of all the students that participated in the survey with percentage 38.6% however, in this survey their expenditures per months from 330 US dollar to 5500 dollars, 35.5% sample of all the students spends less than 350 dollars per month. The table shows that most of the students with percentage 74% in this study spends less than 500 dollars per month.

Table 9: Frequency of Students Who Own One or More Devices

No		Frequency	Percent
1	Smart Phone	28	16.9
2	Tablet	3	1.8
3	Laptop Computer	4	2.4

4	Smartphone and Tablet	10	6.0
5	Smartphone and Laptop Computer	77	46.4
6	Laptop Computer and Tablet	2	1.2
7	All of Them	40	24.1
8	None of them	2	1.2
	Total	166	100.0

Table 9 presents that in this survey, 28 students with percentage 16.9% just owning Smartphone, 3 participant owning just tablet and 4 students with percentage 2.4% owning just one device which is laptop computers. According to the table 6% of the students in this survey owning both smartphone and tablets, 77 students with percentage 46.4% owning both smartphone and tablet and just 2 participants owning both laptop and tablet devices. 40 students with percentage 24.01 owning all the devices and 2 participant with percentage 1.2% don't owning any devices.



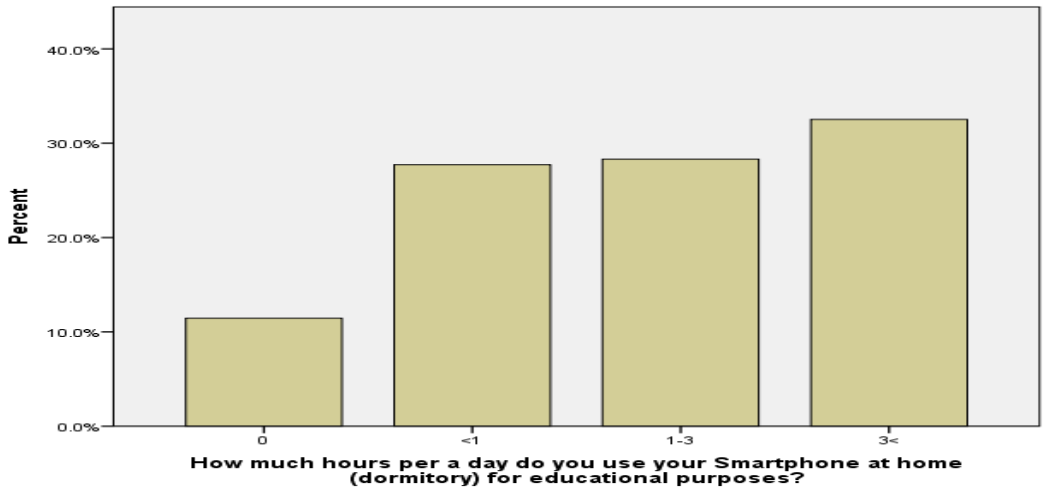
The chart bar shows the percentage of owning smartphone, tablet and laptop computer by the students in this sample study. The majority of students in this survey with

percentage 93.3% owning smartphone. The percentages of owning laptop computer and tablet are 74.1 % and 33.1, respectively.

Table 10: Frequency and Percentage of Students Daily Using Smartphone for Study

No	Daily Using Smartphone	Frequency	Percent
1	0	19	11.4
2	<1	46	27.7
3	1-3	47	28.3
4	3<	54	32.5
	Total	166	100.0

Table 10 indicates that 54 of students with percentage 32.5% were using their smartphones more than 3 hours per day for educational purpose. In contrast, the students that they use smartphone more than 1 hour and less than 3 hours per-day is 47 with percentage 28.3%, also 46 students of the sample size with percentage 27.3% using smartphone for educational purpose less than one hour each day, and 11.4% of the sample their daily using smartphone for educational purpose is zero and they have never used smartphone for study. This table shows more than 55 % of the participants in this sample study using their smartphone more than 1 hour each day for course-related works.



The bar chart shows that 88.6% of the students who participate in this survey are using their smartphone at least more than 1 hour per day for their course-related works.

Table 11: Frequency and Percentage of Students Using Smartphone's Features and Applications for Study each day

No	Daily Using Smartphone's Features and Applications	Frequency	Percent
1	Never	18	10.8
2	Rarely	49	29.5
3	Usually	56	33.7
4	Almost Always	43	25.9
	Total	166	100.0

The result in table 11 indicates the number of students that they never used Smartphone's features and Applications for study purpose is 18 with percentage of 10.8%, 49 student with percentage 29.5% Using Smartphone's features and Applications, rarely. On the other hand, 56 participants with percentage of 33.7% in this sample study usually Using Smartphone's features and Applications for study, and 43 students with percentage of 25.9 Using Smartphone's features and Applications almost always.

Table 12: Frequency and Percentage of Students Using Tablet for Study each day

No	Daily Using Tablet	Frequency	Percent
1	0	93	56.0
2	<1	19	11.4
3	1-3	41	24.7
4	3<	13	7.8
	Total	166	100.0

Table 12 indicates that 13 of students with percentage 7.8% were using their tablet more than 3 hours per day for educational purpose. On the other hand, the number of students that they use tablet more than 1 hour and less than 3 hours per-day is 41 with percentage 24.7%, also 19 students of the sample size with percentage 11.4% using tablet for educational purpose less than one hour each day, and 93 participant with percentage 56.0% of the sample their daily using tablet for educational purpose is zero and they have never used tablet for study.

The bar chart below shows that 67.4% of the students who participate in this survey are using their tablets less than 1 hour per day for their course-related works.

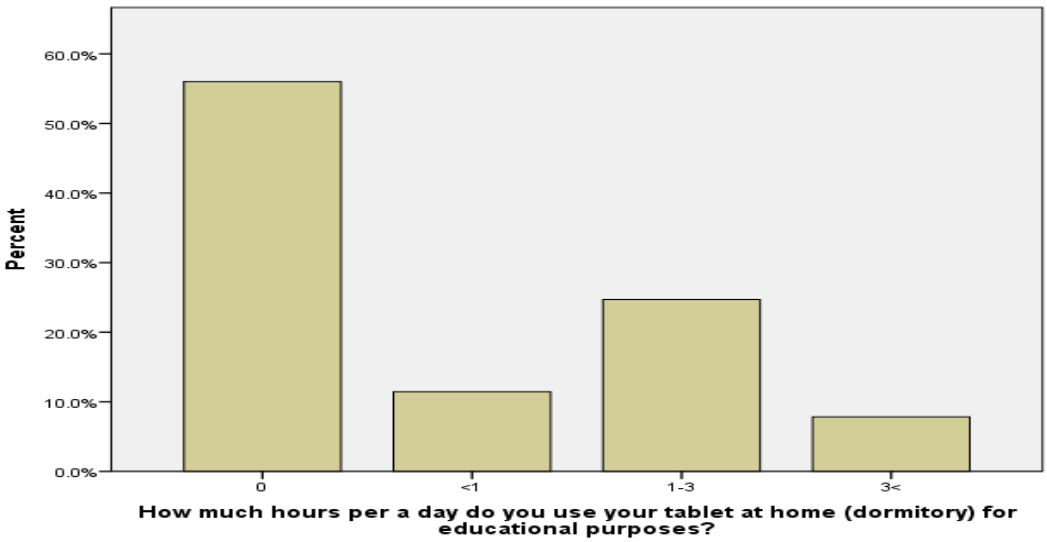


Table 13: Frequency and Percentage of Students Using Tablet's Features and Applications for Study each day

NO	Daily Using Tablet's Features and Applications	Frequency	Percent
1	Never	92	55.4
2	Rarely	17	10.2
3	Usually	41	24.7
4	Almost Always	16	9.6
	Total	166	100.0

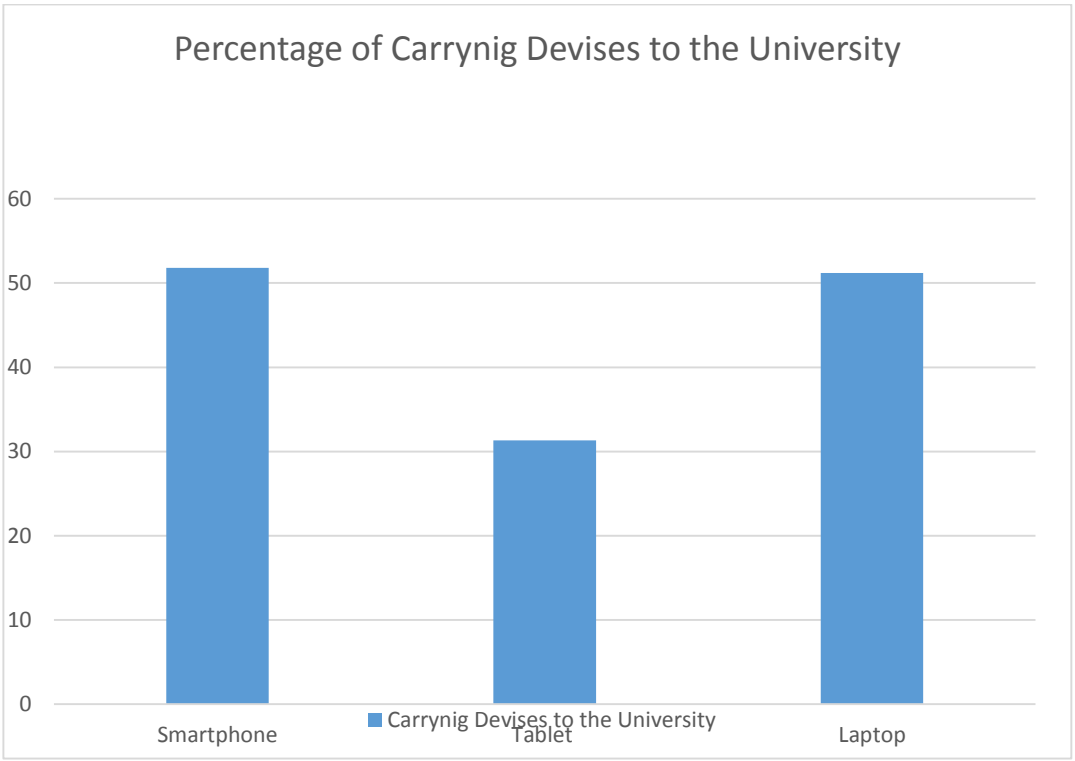
The result in table 13 indicates the number of students that they never used tablet's features and Applications for study purpose is 92 with percentage of 55.4%, 17student with percentage 10.2% Using tablet's features and Applications, rarely. On the other hand, 41 participants with percentage of 247% in this sample study usually Using tablet's features and Applications for study, and 43 students with percentage of 25.9 Using tablet's features and Applications almost always.

Table 14: Frequency and percentage of Carrying Mobile Devices to the University by Students

No	Carrying Mobile Devices	Frequency	Percent
1	Smart Phone	39	23.5
2	Tablet	27	16.3
3	Laptop Computer	44	26.5
4	Smartphone and Tablet	15	9.0
5	Smartphone and Laptop Computer	31	18.7
6	Laptop Computer and Tablet	9	5.4
7	All of Them	1	.6
	Total	166	100.0

The table 14 present that 39 of students with percentage 23.5 in this survey prefer to bring just their smartphone's to the University for course-related Works, also 27 with percentage 16.3% students prefer to bring just tablets to the University for Study and 44 with percentage 26.5% participants prefer to carry just laptops to the University for course-related Works. However, 15 participants with percentage 9% prefer to bring both smartphone and tablet, 18.7 % of the students prefer to bring both smartphone and laptop to the university for course-related works, and 9 participant with percentage 5.4% were thinking that bringing laptop and tablet is helping them to their study in the

university. On the other hand, just one student prefer to bring all the devises to the university.



The bar chart indicates percentage of student's preference of bringing devices to the university for course-related works. More than 50 % of the students prefer smartphones and laptops and just about 30 % of the students prefer tablet for their study in the university.

Table 15: Means and Standard Deviations of the Responses

No	**Statement**	Mean	Std. Deviation
1.	I like to use the MDs in the schoolroom	2.45	1.152
2.	I can learn better by using MDs	2.49	1.066
3.	I feel more motivated in the lessons when MDs are used	2.74	1.122
4.	I believe that the ETs usage is not adequate in the learning process	2.80	0.877
5.	I believe that the lecturer's age will affect his/her perception about using MDs	2.52	0.964

6. I believe that we need to improve students' and teacher's culture about using MDs	2.16	0.927
7. I believe that MDs are necessary for future education	2.20	1.059
8. I dislike the lessons that are lectured with using MDs	2.94	1.083
9. It is beneficial for me to learn the usage of the MDs	2.19	0.927
10. I prefer to use a computer to write my assignments and reports	2.06	1.158
11. It is a waste of time to use MDs in education	3.24	1.134
12. I lose my concentration in the lessons when MDs are used	2.86	1.119
13. I learn slower in the lessons when MDs are used	3.04	1.151
14. I feel bored when MDs are used in the lessons	3.23	1.142
15. I believe that there is no need to use MDs in education	3.27	1.162
16. I can benefit more when MDs are used in the lessons	2.69	1.095
17. Use of MDs is unnecessary for my education	3.14	1.135
18. Using MDs improve my ability and motivation to learn	2.49	1.037
19. Using MDs in learning help me to develop skills related to the courses	2.43	0.962
20. Using MDs would facilitate the understanding of difficult courses	2.31	0.953
21. The MDs help me to follow the courses better	2.40	0.946
22. MDs help to increase my academic performance	2.45	0.988
23. MDs help to increase my academic confidence	2.52	0.995
24. Students' performance is not affected from the use of MDs in classroom	2.73	1.081
25. The MDs help me to do my academic homework faster	2.28	0.945
26. MDs allow me to apply the acquired knowledge	2.48	0.906
27. I feel stressed when homework requires MDs	3.25	1.110
28. MDs help me better in solving my educational problems	2.43	0.993
29. I use MDs like e-mail in communication with others for educational purpose	2.04	0.862
30. I use MDs like Internet for educational purpose	1.98	0.887
31. I believe that MDs are useful to my study	2.08	0.941
The questionnaire as a whole		

According to the results of the table 15 its obvious most of the students who attended in this survey have positive attitudes about using mobile devises such as smartphones and tablets for educational purpose and they believes that using mobile devises in education would be necessary in future, where the most items obtained a mean less

than three. The item "I use MDs like internet for educational purpose" which the mean a smaller amount than others in the feedbacks form participated students.

4.2 Anova Test Examination of Independence Variables and Questionnaire Items

Table 16: Anova Analysis of (Department, Nationality, CGPA, Oldness, Level of Study, Internet Connection, Monthly Expenditure, Owning Devices, Smartphone Use, Smartphone Application use, Tablet use, Tablet Application use and Preference Device)

	Department	Nationality	CGPA	Age	Level of Study	Internet	Monthly	Owning	smartphone	Smartphone	Tablet Use	Tablet App	Preference
1. I enjoy using the MDs in classroom	**Sig.** .238	**Sig.** .544	**Sig.** .436	**Sig.** .269	**Sig.** .240	**Sig.** .174	**Sig.** .056	**Sig.** **.001**	**Sig.** .127	**Sig.** **.030**	**Sig.** .380	**Sig.** .583	**Sig.** .002
2. I can learn better by using MDs	.740	.795	.931	.408	.977	.060	.406	**.036**	.490	.254	.331	.163	**.012**
3. I feel more motivated in the lessons when MDs are used	.697	.206	.956	.309	.633	.143	.863	**.014**	.688	.168	.163	.150	**.047**
4. I believe that the ETs usage is not adequate in the learning process	.742	.681	.955	.316	.290	.954	.976	.090	**.050**	.806	.468	.214	.252
5. I believe that the lecturer's age will affect his/her perception about using MDs	.023	.579	.440	**.046**	**.**115	.062	.056	.100	.071	.180	.147	**.029**	.359
6. I believe that we need to improve students' and teacher's culture about using MDs	.432	.883	.566	.443	.574	.136	.692	.086	.939	.975	**.013**	**.005**	**.001**
7. I believe that MDs are necessary for future education	.051	.715	.920	.237	.955	.057	.268	**.000**	.376	.229	.067	.089	**.004**
8. I dislike the lessons that are lectured with using MDs	.969	.446	**.027**	.131	.739	.875	.612	.225	.075	.932	.770	.958	.371
9. It is beneficial for me to learn the usage of the MDs	.086	.276	.067	.912	.465	.240	.455	.081	.603	.266	.159	.202	.225
10. I prefer to use a computer to write my assignments and reports	.023	.751	.097	.870	.886	.119	.317	.299	.348	.303	.968	.788	.209

11. It is a waste of time to use MDs in education	.668	.153	.245	.711	.948	.362	.989	.760	**.035**	.204	.290	.450	**.034**
12. I lose my concentration in the lessons when MDs are used	.552	.159	**.014**	.383	.906	.870	.334	.557	**.017**	**.037**	.224	.075	**.017**
13. I learn slower in the lessons when MDs are used	.552	.759	**.026**	.640	.763	.364	.765	.669	.378	.165	.549	.184	.358
14. I feel bored when MDs are used in the lessons	.550	.759	.081	.693	.868	.580	.979	.720	.307	.692	.069	.054	.086
15. I believe that there is no need to use MDs in education	.309	.713	.366	.550	.231	.066	.550	.084	.672	.571	.444	.638	.554
16. I can benefit more when MDs are used in the lessons	.762	.581	.337	.511	.914	.178	.185	**.013**	.268	.061	.932	.364	.230
17. Use of MDs is unnecessary for my education	.018	.560	.834	.128	.143	.128	.496	.162	.780	.138	.388	**.005**	.192
18. Using MDs improve my ability and motivation to learn	.767	.650	.169	.469	.880	.157	.550	.053	.123	**.006**	**.014**	**.042**	**.004**
19. Using MDs in learning help me to develop skills related to the courses	.199	.122	.733	.601	.731	.302	.835	.525	.431	.443	.417	.320	.253
20. Using MDs would facilitate the understanding of difficult courses	.558	.463	.961	.188	.687	**.**149	.219	.090	.153	.306	.425	.327	.153
21. The MDs help me to follow the courses better	.822	.602	.588	.626	.248	.786	.362	**.008**	.085	**.010**	.278	.423	.098
22. MDs help to increase my academic performance	.520	.486	.212	.661	.478	.956	.327	**.024**	.407	**.007**	.159	**.036**	.399
23. MDs help to increase my academic confidence	.325	.378	.358	.741	.288	.764	.609	**.014**	.520	**.002**	.208	.439	**.041**
24. Students' performance is not affected from the use of MDs in classroom	.949	.334	.447	.172	.449	.604	.881	.128	.534	.894	.256	.234	.592
25. The MDs help me to do my academic homework faster	.433	.610	.657	.339	.494	.882	.076	.086	.598	.511	.837	.442	.096
26. MDs allow me to apply the acquired knowledge	.860	.090	.860	.265	.792	.663	.844	.340	.863	.203	.867	.292	.535
27. I feel stressed when homework requires MDs	.095	.945	.828	.584	.403	.585	.465	.242	.506	.108	.622	.236	.220
28. MDs help me better in solving my educational problems	.551	.310	.267	.120	.156	.146	.154	**.013**	.232	**.013**	.279	.605	**.004**

29. I use MDs like e-mail in communication with others for educational purpose	.883	**.035**	.411	.096	.145	.066	.396	.197	.217	**.003**	.105	.210	.134
30. I use MDs like Internet for educational purpose	.058	.428	.948	.084	.126	.169	.074	.106	.477	.249	.453	.410	**.035**
31. I believe that MDs are useful to my study	.126	.381	.594	.065	.141	**.**146	.425	**.003**	.615	.137	.348	.253	**.002**

4.2.1 Anova Analysis Regarding to the Department

As shown in table 17, The Department variable has a meaningful difference with the questionnaire items 5, 10, 17 with significance of 0.023, 0.023 and 0.018 respectively.

Table 17: Department Items and Anova Test Examination (Questionnaire Reports)

Statement	**Sig.**
5. I believe that the lecturer's age will affect his/her perception about using MDs	.023
10. I prefer to use a computer to write my assignments and reports	.023
17. Use of MDs is unnecessary for my education	.018

4.2.2 Cross Tabulations of Department

Table 18: The Faculty and Students Answers on the Item

Department	**SA**	**A**	**U**	**D**	**SD**	**Total**
Molecular Biology (Genetic)	1	5	5	0	0	**11**
Industrial Engineering	3	6	1	0	0	**10**
Chemistry	0	1	1	0	0	**2**
English Teaching	0	2	2	1	1	**6**
Pharmacy	0	6	5	3	0	**14**
IT	1	7	6	5	1	**20**
Mechanic	1	9	8	2	0	**20**
Civil	1	5	4	3	0	**13**
Marketing Management	3	2	1	4	0	**10**
Tourism Management	0	3	1	2	0	**6**
International Relations	4	4	3	1	0	**12**
CITE	3	2	0	0	0	**5**
Business Administration	1	8	6	4	0	**19**
Architecture Engineering	4	7	4	3	0	**18**
Total	**22**	**67**	**47**	**28**	**2**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

The Table 18 shows that 11 with percentage 6.6% from molecular biology Department, 1 students strongly agree that the lecturer's age will affect his/her perception about

using MDs and five agree that while five students undecided. 10 students from the department of industrial with percentage 6.2%; three students strongly agreed that that the lecturer's age will affect his/her perception about using MDs, six students agree and one student undecided. 2 (1.2%) students from chemistry department that one of them was agree that the lecturer's age will affect his/her perception about using MDs while another one was undecided. 6 students with percentage 3.6% participated in this survey, two of them were agree that the lecturer's age will affect his/her perception about using MDs, 2 students undecided, 1 students disagreed and 1 student strongly disagreed. 8.4 % of the sample from pharmacy department, 6 students agreed that the lecturer's age will affect his/her perception about using MDs, 5 students undecided and three students selected answer undecided. 12% of the participants from department of information technology their answer as follows ; one student answered strongly agree, 7 students selected agree, 6 students answered undecided, 5 students were disagree and 1 students answered on the item strongly disagree.

20(12%) participated in this sample study and from mechanical engineering department and their answers were; one student answered the item strongly agree, nine participants agreed that the lecturer's age will affect his/her perception about using MDs, 8 persons answered the item undecided and two students were disagree. 13 (7.8%) students of the sample from department of civil engineering attend in this survey, one student strongly agreed that the lecturer's age will affect his/her perception about using MDs 5 students agreed while 4 students selected the answers undecided. 10 (6 %) students from the department of marketing management, three students strongly agreed that the lecturer's age will affect his/her perception about using MDs while 2 agreed, one students undecided and 4 students were disagreed. 6 student with percentage 3.6% were participated in this survey from tourism management

department; three students agreed the item “the lecturer’s age will affect his/her perception about using MDs” , one participate undecided and two students disagreed. 12(7.2%) students participated in this sample study from international relation department and their answers were; 4 students answered the item strongly agree similarly 4 students answered agree, three students selected undecided in this item and one students disagreed. 5 students with percentage 3% from department of communication and information technology in education; 3 students strongly agreed that the lecturer’s age will affect his/her perception about using MDs and 2 students agreed about the item.19 students with percentage 11.4% from department of business administration, 1 student were strongly, eight students agreed ,6 students undecided while four students selected disagree answer. Eventually, 18(10.8%) students from architecture department participated in this survey 4 of them were strongly agree that the lecturer’s age will affect his/her perception about using MDs, seven selected the answer agree, four of them selected undecided and three were disagree.

Table 19: The Faculty and Students Answers on the Item

I prefer to use a computer to write my assignments and reports Cross tabulation.						
Department	**SA**	**A**	**U**	**D**	**SD**	**Total**
Molecular Biology (Genetic)	7	2	0	1	1	**11**
Industrial Engineering	2	3	4	0	1	**10**
Chemistry	1	1	0	0	0	**2**
English Teaching	0	1	3	2	0	**6**
Pharmacy	4	6	4	0	0	**14**
IT	8	7	2	3	0	**20**
Mechanical Engineering	11	4	4	0	1	**20**
Civil Engineering	3	5	3	2	0	**13**
Marketing Management	3	1	3	0	3	**10**
Tourism Management	1	4	0	1	0	**6**
international Relations	4	3	4	1	0	**12**
CITE	3	1	1	0	0	**5**
Business Administration	9	4	1	3	2	**19**

Architecture	13	5	0	0	0	**18**
Total	**69**	**47**	**29**	**13**	**8**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

The Table 19 indicates that 11 with percentage 6.6% from molecular biology Department, 7 students strongly agree the item "I prefer to use a computer to write my assignments and reports." And two agree that while 1 student disagree and one student strongly disagree. 10 students from the department of industrial with percentage 6.2%; two students strongly agreed with the item "I prefer to use a computer to write my assignments and reports." three students agree, four student undecided and one strongly disagree. 2 (1.2%) students from chemistry department that one of them was strongly agree with the item "I prefer to use a computer to write my assignments and reports. "While another one was agreed. 6 students with percentage 3.6% participated in this survey from English teaching department, one of them was agree with the item "I prefer to use a computer to write my assignments and reports." 3 students undecided and two students strongly disagreed. 8.4 % of the sample from pharmacy department, 4 students strongly agreed with the item "I prefer to use a computer to write my assignments and reports." 6 students agreed and four undecided. 12% of the participants from department of information technology their answer as follows; eight students answered strongly agree, 7 students selected agree, two students answered undecided and three students were disagree.

20(12%) participated in this sample study and from mechanical engineering department and their answers were; eleven students answered the item strongly agree, four participants agreed with the item "I prefer to use a computer to write my

assignments and reports.", 4 persons answered the item undecided and just one student was disagree. 13 (7.8%) students of the sample from department of civil engineering attend in this survey, 3 students strongly agreed with the item "I prefer to use a computer to write my assignments and reports." 5 students agreed while 3 students selected the answers undecided and 2 participants were disagree. 10 (6 %) students from the department of marketing management, three students strongly agreed with the item "I prefer to use a computer to write my assignments and reports. "While just one agreed, 3 students were undecided and 3 students were strongly disagreed. 6 student with percentage 3.6% were participated in this survey from tourism management department; one participant was strongly agree with the item four students agreed the item "the lecturer's age will affect his/her perception about using MDs" , one participate disagreed on the item. 12(7.2%) students participated in this sample study from international relation department and their answers were; 4 students answered the item strongly agree 3 students answered agree, four students selected undecided in this item and one students disagreed. 5 students with percentage 3% from department of communication and information technology in education; 3 students strongly agreed with the item "I prefer to use a computer to write my assignments and reports." one student agreed about the item and one selected the undecided answer .19 students with percentage 11.4% from department of business administration, nine students were strongly agree, four students agreed ,one student undecided while three students selected disagree answer and 2 students were strongly disagree with the item "I prefer to use a computer to write my assignments and reports.". Eventually, 18(10.8%) students from architecture department participated in this survey thirteen of them were strongly with the item "I prefer to use a computer to write my assignments and reports." and five selected the answer agree.

Table 20: The Department and Students Answers on the Item

Use of MDs is unnecessary for my education.						
Department	**SA**	**A**	**U**	**D**	**SD**	**total**
Molecular Biology (Genetic)	0	1	0	6	4	**11**
Industrial Engineering	2	1	3	2	2	**10**
Chemistry	0	0	1	1	0	**2**
English Teaching	0	2	3	0	1	**6**
Pharmacy	2	4	5	1	2	**14**
IT	2	8	4	5	1	**20**
Mechanical Engineering	2	4	7	7	0	**20**
Civil Engineering	1	0	4	6	2	**13**
Marketing Management	2	2	3	3	0	**10**
Tourism Management	0	4	2	0	0	**6**
International Relations	0	5	3	3	1	**12**
CITE	0	1	3	1	0	**5**
Business Administration	1	5	4	6	3	**19**
Architecture	0	3	4	7	4	**18**
Total	**12**	**40**	**46**	**48**	**20**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

The Table 20 Indicates that 11 with percentage 6.6% from molecular biology Department, one student was agree that use of MDs is unnecessary for my education, six disagree and while four students were strongly disagree. 10 students from the department of industrial with percentage 6.2%; two students strongly agreed that that Use of MDs is unnecessary for my education, one student agreed, three students were undecided while similarly two students were disagree and two strongly disagree. 2 (1.2%) students from chemistry department that one of them was undecided that Use of MDs is unnecessary for my education while another one was disagree. 6 students with percentage 3.6% participated in this survey, two of them were agree Use of MDs is unnecessary for my education, three students undecided and one student was strongly disagreed. 8.4 % of the sample from pharmacy department, two students strongly agreed that Use of MDs is unnecessary for my education, four students were

agreed, five students selected answer undecided while one student selected disagree answer and two students were strongly disagree with the item. 12% of the participants from department of information technology their answer as follows ; two students answered strongly agree, eight students selected agree, four students answered undecided, five students were disagree and 1 students answered on the item strongly disagree.

20(12%) participated in this sample study from mechanical engineering department and their answers were; two students answered the item strongly agree, four participants agreed that Use of MDs is unnecessary for my education, seven persons answered the item undecided and seven students were disagree. 13 (7.8%) students of the sample from department of civil engineering attend in this survey, one student strongly agreed that use of MDs is unnecessary for my education nobody agreed while 4 students selected the answers undecided and six selected disagree and 2 selected strongly disagree. 10 (6 %) students from the department of marketing management, two students strongly agreed that use of MDs is unnecessary for my education while two agreed, three students undecided and three students were disagreed. 6 student with percentage 3.6% were participated in this survey from tourism management department; four students agreed the item "use of MDs is unnecessary for my education." , two participates were undecided. 12(7.2%) students participated in this sample study from international relation department and their answers were; 5 students answered agree, three students selected undecided in this item , three disagreed and one student was strongly disagree. five students with percentage 3% from department of communication and information technology in education; one student agreed that Use of MDs is unnecessary for my education and 3 students were undecided about the item while one student was disagree with the item.19 students

with percentage 11.4% from department of business administration, 1 student was strongly agree, five students agreed ,four students undecided while six students selected disagree answer and three were strongly disagree. Eventually, 18(10.8%) students from architecture department participated in this survey three of them were agree Use of MDs is unnecessary for my education, four were undecided, seven selected the answer disagree and four were disagree about the item.

4.2.3 Questionaries' item and Anove test of Nationality

Table 21: Questionaries' item and Anove test of Nationality

Statement	**Sig.**
29. I use MDs like e-mail in communication with others for educational purpose	**.035**

4.2.4 Cross Tabulation of Nationality

Table 22: Cross Tabulation of Nationality and the Item

I use MDs like e-mail in communication with others for educational purpose						
Nationality	**SA**	**A**	**U**	**D**	**SD**	**Total**
Iranian	8	12	7	3	0	**30**
Nigerian	15	15	3	1	0	**34**
Syrian	3	6	1	0	0	**10**
Cypriot	5	8	5	0	1	**19**
Azerbaijani	2	6	1	1	0	**10**
Lebanese	4	3	0	0	0	**7**
Turkish	5	8	14	2	0	**29**
Palestinian	1	7	1	0	0	**9**
Cameroonian	3	3	3	1	0	**10**
Jordanian	1	7	0	0	0	**8**
Total	**47**	**75**	**35**	**8**	**1**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Table 22 is showing that 30 students with percentage 18% attended in this survey form Iran, 20 of them were agree or strongly agree with the item "I use MDs like e-mail in communication with others for educational purpose" while three of them were disagree and seven were undecided. 34(20.4%) Nigerian students answer the item as follow: 15 strongly agree similarly 15 agree, three undecided and just one disagree with the item "I use MDs like e-mail in communication with others for educational purpose". The number of Syrian students who attend in this survey were 10 with percentage 6% that three of them were strongly agree with the item, six of them were agree and just one of them selected the undecided answer. 19 (11.4%) students from Cyprus that 13 of them were agree or strongly agree with the item "I use MDs like e-mail in communication with others for educational purpose" while five of them were undecided and one of them was disagree with the item. Ten Azerbaijani students attended in this study sample that eight of them were agree while similarly one was undecided and one was disagree. 7 Lebanese students with percentage 4.2% that four

of them were strongly agree and 3 of them were agree with the item. 29 Turkish students attended in the survey with percentage 17.4% that 13 of them were agree or strongly agree with the item "I use MDs like e-mail in communication with others for educational purpose" while 14 of them selected undecided answer and just two Turkish students were disagree with the item. Nine Palestinian students answer the item that one of them was strongly agree, seven of them were agree and just one of them answer the item undecided. Ten students from Cameroon with percentage 6% that six of them were agree or strongly agree similarly three of them undecided and just one of them was disagree with the item. Eight students attended in the survey with percentage4.8% that one of them was strongly agree and seven of them were agree with the item "I use MDs like e-mail in communication with others for educational purpose".

4.2.5 CGPA and Anova Test

Table 23: CGPA, Questionnaire Items and Anova Examination

Statement	**Sig.**
8. I dislike the lessons that are lectured with using MDs	**.027**
12. I lose my concentration in the lessons when MDs are used	**.014**
13. I learn slower in the lessons when MDs are used	**.026**

Table 24: Crosstabulation of CGPA and the Item

CGPA	8. I dislike the lessons that are lectured with using MDs					**Total**
	SA	**A**	**U**	**D**	**SD**	
0.00 - 1.00	0	2	0	0	0	**2**
1.00 - 2.00	5	5	5	1	1	**17**
2.00 - 3.00	5	15	26	18	2	**66**
3.00 - 4.00	5	22	25	19	10	**81**
Total	**15**	**44**	**56**	**38**	**13**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Two students with percentage 1.2% of the CGPA within zero to one agreed the item "I dislike the lessons that are lectured with using MDs" while seventeen (10.2%) students with CGPA within 1 to 2 participated in the survey that ten of them were agree or strongly agree, five undecided while one of them was disagree and similarly one of them was strongly disagree about the item. From 66 students with CGPA more than 2 and less than three 20 of them were agree or strongly agree with the item "I dislike the lessons that are lectured with using MDs", 26 persons were undecided and 20 percent were disagree with the item.27 (33.3%) students of the CGPA from three to four were agreed about this item while 25(30%) undecided about the item and 29 students disagreed with the item "I dislike the lessons that are lectured with using MDs".

Table 25: Crosstabulation of CGPA and the Item

CGPA	I lose my concentration in the lessons when MDs are used					**Total**
	SA	**A**	**U**	**D**	**SD**	
0.00 - 1.00	1	0	1	0	0	**2**
1.00 - 2.00	5	5	2	5	0	**17**
2.00 - 3.00	10	21	18	15	2	**66**
3.00 - 4.00	5	18	28	22	8	**81**
Total	**21**	**44**	**49**	**42**	**10**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Two students with percentage 1.2% of the CGPA within zero to one attended in the survey one of them was strongly agree with the item "I lose my concentration in the lessons when MDs are used" while another one was undecided. Seventeen (10.2%) students with CGPA within 1 to 2 participated in the survey that ten of them were agree or strongly agree, two undecided while five of them were disagree about the item. From 66 students with CGPA more than 2 and less than three 31 of them were agree or strongly agree with the item "I lose my concentration in the lessons when

MDs are used", 18 persons were undecided and 17 persons were disagree with the item.23 (31.3%) students of the CGPA from three to four were agreed about this item while 28(33%) undecided about the item and 30 students disagreed with the item "I lose my concentration in the lessons when MDs are used".

Table 26: Items and Cross tabulation of CGPA

CGPA	13. I learn slower in the lessons when MDs are used					**Total**
	SA	**A**	**U**	**D**	**SD**	
0.00 - 1.00	1	1	0	0	0	**2**
1.00 - 2.00	3	5	4	5	0	**17**
2.00 - 3.00	8	19	14	20	5	**66**
3.00 - 4.00	4	18	22	27	10	**81**
Total	**16**	**43**	**40**	**52**	**15**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Two students with percentage 1.2% of the CGPA within zero to one attended in the survey one of them was strongly agree with the item "I learn slower in the lessons when MDs are used while another one was agree. Seventeen (10.2%) students with CGPA within 1 to 2 participated in the survey that eight of them were agree or strongly agree, four undecided while five of them were disagree about the item. From 66 students with CGPA more than 2 and less than three, 27 of them were agree or strongly agree with the item "I learn slower in the lessons when MDs are used", 14 persons were undecided and 25 persons were disagree with the item.22 (31.3%) students of the CGPA from three to four were agreed about this item while 22(27%) undecided about the item and 37 students disagreed with I learn slower in the lessons when MDs are used".

4.2.5 Anova Analysis Regarding to the Age

Table 27: Items and Anova Examination test of Oldness

5. I believe that the lecturer's age will affect his/her perception about using MDs	**.046**

Table 28: The Items and Cross tabulation of Oldness

		I believe that the lecturer's age will affect his/her perception about using MDs					
		SA	A	U	D	SD	**Total**
Age	<=20	3	10	13	10	1	**37**
	21-25	7	30	25	9	1	**72**
	26-30	8	18	8	5	0	**39**
	31-35	3	7	1	3	0	**14**
	>35	1	2	0	1	0	**4**
Total		**22**	**67**	**47**	**28**	**2**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

According to the table, 37(22.2%) students who participated in this survey were less than 20 years old that 13 student agreed about the item "I believe that the lecturer's age will affect his/her perception about using MDs" similarly 13 were undecided and eleven students selected disagree or strongly disagree answers. 72 students between 21 to 25 years old with percentage 43% answered as follow: 37 agree with the item, 25 were undecided and 10 were disagree with the item. 39 (23.4%) students between 26 to 30 years old participated that 26 of them agreed the item "I believe that the lecturer's age will affect his/her perception about using MDs", eight undecided and five were disagree. 18 students with percentage about 10% were more than 30 years old that 13 of them agreed the item one was undecided and four of them were disagree with the item.

4.2.6 Anova Analysis Regarding to the Owning Devises

Table 29: The Items and Anova Examination Test of Owning Devises

Statement	**Sig.**
3. I feel more motivated in the lessons when MDs are used	**.043**
6. I believe that we need to improve students' and teacher's culture about using MDs	**.036**

Table 30: Cross tabulation of Owning Devises and the Item

3. I feel more motivated in the lessons when MDs are used						
Owning Devises	**SA**	**A**	**U**	**D**	**SD**	**Total**
Smart Phone	3	13	3	9	0	**28**
Tablet	0	2	1	0	0	**3**
Laptop Computer	0	0	0	2	2	**4**
Smartphone and Tablet	0	4	1	3	2	**10**
Smartphone and Laptop Computer	7	24	25	19	2	**77**
Laptop Computer and Tablet	0	1	0	1	0	**2**
All of Them	9	17	7	3	4	**40**
None of them	1	0	0	1	0	**2**
Total	**20**	**61**	**37**	**38**	**10**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Table 30 indicates that 28 (16.8%) students in this survey just owning smartphone And most of them are agree with the item "I feel more motivated in the lessons when MDs are used" and 9 students were disagree. Three students were owning just tablet and two of them selected agree answer and one selected undecided. All the Four students who own just laptop were disagree with the item the item "I feel more motivated in the lessons when MDs are used".

Ten students owned both smartphone and tablet that 4 of them agreed and 5 of them disagreed the item. 77 students with percentage of 46 % answered as follow: 31 agreed, 25 undecided and 21 disagree with the item. Just two students owned laptop and tablet that one of them was agree while another one was disagree. 40 students with percentage 24% owned all the devices that 26 of them were agreed, 7 persons were undecided and 7 were disagreed with the item.

Table 31: Crosstabulation of Owning Devises and the Item

I believe that we need to improve students' and teacher's culture about using MDs						
Owning Devises	**SA**	**A**	**U**	**D**	**SD**	**Total**

Smart Phone	3	17	4	4	0	**28**
Tablet	1	2	0	0	0	**3**
Laptop Computer	0	1	2	0	1	**4**
Smartphone and Tablet	4	4	2	0	0	**10**
Smartphone and Laptop Computer	16	34	22	3	2	**77**
Laptop Computer and Tablet	1	1	0	0	0	**2**
All of Them	14	17	7	1	1	**40**
None of them	1	0	1	0	0	**2**
Total	**40**	**76**	**38**	**8**	**4**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Table 30 shows that 28 (16.8%) students in this survey just owning smartphone And most of them are agree with the item "I believe that we need to improve students' and teacher's culture about using MDs" and 4 students were disagree. Three students were owning just tablet and all of them agreed with the item. One of Four students whjust laptop was agree with the item with the item "I believe that we need to improve students' and teacher's culture about using MDs", two were undecided and 1 was strongly agree with the item.

Ten students owned both smartphone and tablet that 8 of them agreed and 2 of them were undecided about the item. 77 students with percentage of 46 % answered as follow: 50 agreed, 22 undecided and 5 disagree with the item. Just two students owned laptop and tablet that one of them was agree while another one was strongly agree. 40 students with percentage 24% owned all the devices that 31 of them were agreed, 7 persons were undecided and 2 were disagreed with the item.

4.2.7 Anova Test examination of using Smartphone per day for Study

Table 32: Anova Analysis of Daily Smartphone Use for Study and the Items

Statement	**Sig.**
4. I believe that the ETs usage is not adequate in the learning process	**.050**
11. It is a waste of time to use MDs in education	**.035**
12. I lose my concentration in the lessons when MDs are used	**.017**

Table 33: Cross Tabulation of using of Smartphone per Day for Study and the Item

4. I believe that the ETs usage is not adequate in the learning process							
		SA	**A**	**U**	**D**	**SD**	**Total**
Daily Smartphone Use for Study	0	0	5	9	4	1	**19**
	<1 hour	3	19	19	5	0	**46**
	1-3 hours	3	13	26	5	0	**47**
	3< hours	3	16	17	15	3	**54**
Total		**9**	**53**	**71**	**29**	**4**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

According to the table 5 students with percentage 26% who does not have smartphone or did not use it were agreed with the item "I believe that the ETs usage is not adequate in the learning process" while nine students were undecided and five disagreed. 46 students who were using less than 1 hour per day for study purpose with percentage of 27.7% attended in the survey that 22 of them were agreed with the item and five of them were disagree. 16 students of those that were using smartphone for study between 1 to 3 hours agreed with the item "I believe that the ETs usage is not adequate in the learning process" while five of them were disagreed. 54 students in this survey use smartphone for more than 3 hour per day that 19 of them were agreed, 17 disagreed while 18 were disagree or strongly disagree with the item.

Table 34: Cross Tabulation of using of Smartphone per Day for Study and the Item

		It is a waste of time to use MDs in education					
		SA	**A**	**U**	**D**	**SD**	**Total**
Daily Smartphone Use for Study	0	3	4	5	6	1	**19**
	<1 hour	4	13	11	13	5	**46**
	1-3 hours	3	8	19	12	5	**47**
	3< hours	1	9	14	17	13	**54**
Total		**11**	**34**	**49**	**48**	**24**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

According to the table 7 students with percentage 35% who does not have smartphone or did not use it were agreed with the item "It is a waste of time to use MDs in education" while five students were undecided and seven disagreed. 46 students who were using less than 1 hour per day for study purpose with percentage of 27.7% attended in the survey that 17 of them were agreed with the item and 18 of them were disagree. 11 students of those that were using smartphone for study between 1 to 3 hours agreed with the item "It is a waste of time to use MDs in education" while 17 of them were disagreed. 54 students in this survey use smartphone for more than 3 hour per day that 10 of them were agreed, 14 disagreed while 30 with percentage 55% were disagree or strongly disagree with this element.

Table 35: Cross tabulation of using of Smartphone per Day for Study and the Item

		I miss my attention in the programs once MDs stay used					
		SA	**A**	**U**	**D**	**SD**	**Total**
Daily Smartphone Use for Study	0	3	7	5	4	0	**19**
	<1 hour	5	15	9	17	0	**46**
	1-3 hours	9	13	14	10	1	**47**
	3< hours	4	9	21	11	9	**54**
Total		**21**	**44**	**49**	**42**	**10**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

According to the table 10 students with percentage 52% who does not have smartphone or did not use it were agreed with the item "I lose my concentration in the lessons when MDs are used" while five students were undecided and four selected disagree answer. 46 students who were using less than 1 hour per day for study purpose with percentage of 27.7% attended in the survey that twenty of them were agreed with the item and 17 of them were disagree. 22 students of those that were using smartphone for study between 1 to 3 hours agreed with the item "I lose my concentration in the lessons when MDs are used" while 11 of them were disagreed. 54 students in this survey use smartphone for more than 3 hour per day that 13 of them were agreed, 20 disagreed while 21 with percentage 40% were disagree or strongly disagree with the item "I lose my concentration in the lessons when MDs are used".

4.2.8 Anova Analysis of Daily Tablet Use for Study

Table 36: Anova Examination Test of using of Tablet per Day for Study and the Item

Statement	**Sig.**
6. I believe that we need to improve students' and teacher's culture about using MDs	**.013**
18. Using MDs improve my ability and motivation to learn	**.014**

4.2.9 Cross Tabulation of Daily Tablet Use for Study

Table 37: Cross Tabulation of using of Tablet per Day for Study and the Item

		6. I believe that we need to improve students' and teacher's culture about using MDs					
		SA	**A**	**U**	**D**	**SD**	**Total**
Daily Tablet Use for Study	0	14	47	24	7	1	**93**
	<1	5	6	6	0	2	**19**
	1-3	18	17	5	0	1	**41**
	3<	3	6	3	1	0	**13**
Total		**40**	**76**	**38**	**8**	**4**	**166**

65% of the students who use do not use tablet or do not have tablet agreed the item “I believe that we need to improve students’ and teacher’s culture about using MDs” while 8.6% of those students disagreed and 24 students undecided. 11(57%) students who use tablet for study each day less than 1 hour agreed with the item six students undecided and just two students disagreed the item. 85% of students who use tablet for study per day from 1 to 3 hours agreed with the item “I believe that we need to improve students’ and teacher’s culture about using MDs”, while 12% were undecided and just one student disagreed the item. 13 students with percentage 7.8% were using tablet more than 3 hours per day that 9 of those students agreed with the item “I believe that we need to improve students’ and teacher’s culture about using MDs” and three students were undecided while just one student was disagree with the item.

Table 38: Cross Tabulation of using of Tablet per Day for Study and the Item

		18. Using MDs improve my ability and motivation to learn					
		SA	**A**	**U**	**D**	**SD**	**Total**
Daily Tablet Use for Study	0	11	31	29	19	3	**93**
	<1	2	9	6	1	1	**19**
	1-3	13	17	6	4	1	**41**
	3<	2	7	3	1	0	**13**
Total		**28**	**64**	**44**	**25**	**5**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

According to the table, 93 students do not use tablet or do not have tablet attended in this survey that 45% of them agreed with the item "Using MDs improve my ability and motivation to learn", while 17 % were undecided and 22 student with percentage 23% disagreed the item. . 11(57%) students who use tablet for study each day less than 1 hour agreed with the item six students undecided and just two students disagreed the item. 73% of students who work with tablet for study from 1 to 3 hours agreed with item "Using MDs improve my ability and motivation to learn", while 14% were undecided and five students disagreed the item. . 13 students with percentage 7.8% were using tablet more than 3 hours per day that 9 of those students agreed with the item with the item "Using MDs improve my ability and motivation to learn", and three students were disagree undecided while just one student was disagree with the item.

4.2.10 Anova Analysis of Preference Device to Use for study in University

Table 39: Anova Examination Test of Favorite Device for Study Purpose in the University and the Items

Statement	**Sig.**
1. I enjoy using the MDs in classroom	.002
2. I can learn better by using MDs	.012
6. I believe that we need to improve students' and teacher's culture about using MDs	.001
7. I believe that MDs are necessary for future education	.004
12. I lose my concentration in the lessons when MDs are used	.017

18. Using MDs improve my ability and motivation to learn	.004
28. MDs help me better in solving my educational problems	.004
31. I believe that MDs are useful to my study	.002

Table 40: Cross Tabulation of Favorite Device for Study Purpose in the University and the Items

1. I enjoy using the MDs in classroom						
	SA	**A**	**U**	**D**	**SD**	**Total**
Smart Phone	10	15	10	4	0	**39**
Tablet	7	13	6	1	0	**27**
Laptop Computer	4	13	12	8	7	**44**
Smartphone and Tablet	6	5	2	0	2	**15**
Smartphone and Laptop Computer	5	16	6	4	0	**31**
Laptop Computer and Tablet	3	1	1	1	3	**9**
All of Them	0	0	1	0	0	**1**
Total	**35**	**63**	**38**	**18**	**12**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Table indicates that 66% of students who prefer to bring smartphone to the university for course-related works are agree with the item "I enjoy using the MDs in classroom" while 19 persons with percentage 22% were undecided about the item and 10 students were disagree with the item. 52 students with percentage 31% prefer to bring tablet to the university and 35(67%) of them are agree with the item while 19% undecided the item and 7 students with percentage 13.5% disagreed the item. 49.4% of those students that prefer laptop are agree with the item "I enjoy using the MDs in classroom" while 20 students were undecided and 23 students selected disagree answer.

Table 41: Crosstabulation of Preference Device to Use for Study in University and the Item

2. I can learn better by using MDs						
	SA	**A**	**U**	**D**	**SD**	**Total**
Smart Phone	6	20	8	5	0	**39**
Tablet	3	16	4	2	2	**27**
Laptop Computer	4	13	9	16	2	**44**
Smartphone and Tablet	3	8	1	1	2	**15**
Smartphone and Laptop Computer	5	17	6	2	1	**31**
Laptop Computer and Tablet	3	4	1	1	0	**9**
All of Them	0	0	0	1	0	**1**
Total	**24**	**78**	**29**	**28**	**7**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Table indicates that 86 students with percentage 51% prefer smartphone for course-related works in the university and 68% of those were agreed with the item "I can learn better by using MDs" while 16 persons with percentage 18% were undecided about the item and 13(15%) students were disagree with the item. 52 students with percentage 31% prefer to bring tablet to the university and 71% (37 students) of them are agree with the item while 11% undecided the item and 8 students with percentage 15% disagreed the item. 54.4% of those students that prefer laptop are agree with the item with the item "I can learn better by using MDs" while 16(18%) students were undecided and 23 students selected disagree answer.

Table 42: Crosstabulation of Preference Device to Use for Study in University and the Item

6. I believe that we need to improve students' and teacher's culture about using MDs						
	SA	**A**	**U**	**D**	**SD**	**Total**
Smart Phone	7	17	12	3	0	**39**
Tablet	10	14	3	0	0	**27**

Laptop Computer	6	18	14	2	4	**44**
Smartphone and Tablet	7	6	1	1	0	**15**
Smartphone and Laptop Computer	9	15	6	1	0	**31**
Laptop Computer and Tablet	1	6	2	0	0	**9**
All of Them	0	0	0	1	0	**1**
Total	**40**	**76**	**38**	**8**	**4**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Table shows that 86 students prefer to bring smartphone to the university for course-related works that 72% of those students are agree with the item "I believe that we need to improve students' and teacher's culture about using MDs" while 19 persons with percentage 21% were undecided about the item and just 6 students with percentage 7% were disagree with the item. 52 students with percentage 31% prefer to bring tablet to the university and 44(84%) of them are agree with the item while 11% undecided the item and 2 students with percentage 3.8% disagreed the item with the item "I believe that we need to improve students' and teacher's culture about using MDs". 64% of those students that prefer laptop computer were agreed with the item "I believe that we need to improve students' and teacher's culture about using MDs" while 22(25%) students were undecided and 8 with parentage 9.4% selected disagree answer.

Table 43: Crosstabulation of Preference Device to Use for Study in University and the Item

7. I believe that MDs are necessary for future education						
	SA	**A**	**U**	**D**	**SD**	**Total**
Smart Phone	8	14	11	5	1	**39**
Tablet	10	10	3	3	1	**27**
Laptop Computer	9	13	13	7	2	**44**
Smartphone and Tablet	6	7	1	1	0	**15**

Smartphone and Laptop Computer	14	13	3	1	0	**31**
Laptop Computer and Tablet	2	3	4	0	0	**9**
All of Them	0	0	0	1	0	**1**
Total	**49**	**60**	**35**	**18**	**4**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

According to the table, 86 students with percentage 51% prefer smartphone for course-related works in the university and 83% of those were agreed with the item "I believe that MDs are necessary for future education" while 15 persons with percentage 17% were undecided about the item and 9(10.4%) students were disagree with the item. 52 students with percentage 31% prefer to bring tablet to the university and 73% (38 students) of them are agree with the item while 15% undecided the item and 6 students with percentage 11% disagreed the item. ". 63% of those students that prefer laptop computer were agreed with the item "I believe that MDs are necessary for future education" while 20(24%) students were undecided and 11 with parentage 12.4% were disagree about the item.

Table 44: Crosstabulation of Preference Device to Use for Study in University and the Item

12. I lose my concentration in the lessons when MDs are used						
	SA	**A**	**U**	**D**	**SD**	**Total**
Smart Phone	4	10	9	11	5	**39**
Tablet	1	8	10	7	1	**27**
Laptop Computer	9	12	15	7	1	**44**
Smartphone and Tablet	3	3	4	5	0	**15**
Smartphone and Laptop Computer	1	8	7	12	3	**31**
Laptop Computer and Tablet	3	3	3	0	0	**9**
All of Them	0	0	1	0	0	**1**
Total	**21**	**44**	**49**	**42**	**10**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Table indicates that 86 students with percentage 51% prefer smartphone for course-related works in the university and 33% of those were agreed with the item "I lose my concentration in the lessons when MDs are used" while 21 persons with percentage 24% were undecided about the item and 39(45%) students were disagree with the item. 52 students with percentage 31% prefer to bring tablet to the university and 40% (21 students) of them are agree with the item while 18% undecided the item and 13 students with percentage 25% disagreed the item. 42% of those students that prefer laptop are agree with the item with the item "I lose my concentration in the lessons when MDs are used" while 26(30%) students were undecided and 33 with percentage 38.8% students selected disagree answer.

Table 45: Crosstabulation of Preference Device to Use for Study in University and the Item

18. Using MDs improve my ability and motivation to learn						
	SA	**A**	**U**	**D**	**SD**	**Total**
Smart Phone	5	16	10	6	2	**39**
Tablet	6	11	9	1	0	**27**
Laptop Computer	5	12	11	14	2	**44**
Smartphone and Tablet	3	7	3	1	1	**15**
Smartphone and Laptop Computer	3	17	8	3	0	**31**
Laptop Computer and Tablet	6	1	2	0	0	**9**
All of Them	0	0	1	0	0	**1**
Total	**28**	**64**	**44**	**25**	**5**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Table 45 shows that from those students that prefer to bring smartphone to the university for course-related works 59% of those students are agree with the item "Using MDs improve my ability and motivation to learn" while 22 persons with percentage 25% were undecided about the item and 13 students with percentage 15%

were disagree with the item. 52 students with percentage 31% prefer to bring tablet to the university and 35(67%) of them are agree with the item while 28% undecided the item and 3 students with percentage 5.7% disagreed the item with the item "Using MDs improve my ability and motivation to learn". 51% of those students that prefer laptop computer were agreed with the item "Using MDs improve my ability and motivation to learn" while 22(25%) students were undecided and 19 with parentage 22.3% selected disagree answer.

Table 46: Crosstabulation of Preference Device to Use for Study in University and the Item

MDs help me better in solving my educational problems						
	SA	**A**	**U**	**D**	**SD**	**Total**
Smart Phone	8	18	9	3	1	**39**
Tablet	4	13	7	2	1	**27**
Laptop Computer	0	17	16	7	4	**44**
Smartphone and Tablet	5	5	3	2	0	**15**
Smartphone and Laptop Computer	7	14	7	3	0	**31**
Laptop Computer and Tablet	2	5	2	0	0	**9**
All of Them	0	0	1	0	0	**1**
Total	**26**	**72**	**45**	**17**	**6**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Table indicates that 86 students with percentage 51% prefer smartphone for course-related works in the university and 66% of those were agreed with the item "MDs help me better in solving my educational problems" while 20 persons with percentage 23% were undecided about the item and 9(10%) students were disagree with the item. 52 students with percentage 31% prefer to bring tablet to the university and 65% (34 students) of them are agree with the item while 25% undecided the item and 5 students with percentage 10% disagreed the item. 56.4% of those students that prefer laptop are

agree with the item with item "MDs help me better in solving my educational problems" while 26(30%) students were undecided and 14 with percentage 16.4% students selected disagree answer.

Table 47: Crosstabulation of Preference Device to Use for Study in University and the Item

31. I believe that MDs are useful to my study						
	SA	**A**	**U**	**D**	**SD**	**Total**
Smart Phone	12	18	8	1	0	**39**
Tablet	10	11	6	0	0	**27**
Laptop Computer	6	17	12	7	2	**44**
Smartphone and Tablet	6	6	1	2	0	**15**
Smartphone and Laptop Computer	13	12	5	1	0	**31**
Laptop Computer and Tablet	3	4	2	0	0	**9**
All of Them	0	0	1	0	0	**1**
Total	**50**	**68**	**35**	**11**	**2**	**166**

SA: Strongly Agree**, A:** Agree**, U:** Undecided**, D:** Disagree**, SD:** Strongly Disagree

Table 47 shows that from those students that prefer to bring smartphone to the university for course-related works, 77% of those students are agree with the item ". I believe that MDs are useful to my study" while 15 persons with percentage 17% were undecided about the item and 4 students with percentage 4.6% were disagree with the item. 52 students with percentage 31% prefer to bring tablet to the university and 40(76%) of them are agree with the item while 19.2% undecided the item and just two students with percentage 3.8% disagreed the item with the item "I believe that MDs are useful to my study".64% of those students that prefer laptop computer were agreed with the item "I believe that MDs are useful to my study" while 20(23%) students were undecided and 10 with parentage 22.3% selected disagree answer.

4.3 T-Test Analysis of Gender

Table 48: Questionnaire Items and Sex T-test

Statement	Sig.
1. I enjoy using the MDs in classroom	.718
	.720
2. I can learn better by using MDs	.186
	.204
3. I feel more motivated in the lessons when MDs are used	.495
	.500
4. I believe that the ETs usage is not adequate in the learning process	.955
	.954
5. I believe that the lecturer's age will affect his/her perception about using MDs	.192
	.205
6. I believe that we need to improve students' and teacher's culture about using MDs	.514
	.517
7. I believe that MDs are necessary for future education	.918
	.918
8. I dislike the lessons that are lectured with using MDs	.670
	.662
9. It is beneficial for me to learn the usage of the MDs	.147
	.149
10. I prefer to use a computer to write my assignments and reports	.405
	.396
11. It is a waste of time to use MDs in education	.710
	.700
12. I lose my concentration in the lessons when MDs are used	.821
	.819
13. I learn slower in the lessons when MDs are used	.389
	.375
14. I feel bored when MDs are used in the lessons	.098
	.090
15. I believe that there is no need to use MDs in education	.959
	.957
16. I can benefit more when MDs are used in the lessons	.133
	.130
17. Use of MDs is unnecessary for my education	.956
	.955
18. Using MDs improve my ability and motivation to learn	.155

	.154
19. Using MDs in learning help me to develop skills related to the courses	.645
	.641
20. Using MDs would facilitate the understanding of difficult courses	.915
	.917
21. The MDs help me to follow the courses better	.302
	.307
22. MDs help to increase my academic performance	.076
	.074
23. MDs help to increase my academic confidence	.184
	.182
24. Students' performance is not affected from the use of MDs in classroom	.701
	.709
25. The MDs help me to do my academic homework faster	.241
	.245
26. MDs allow me to apply the acquired knowledge	.521
	.520
27. I feel stressed when homework requires MDs	.837
	.840
28. MDs help me better in solving my educational problems	.009
	.011
29. I use MDs like e-mail in communication with others for educational purpose	.334
	.347
30. I use MDs like Internet for educational purpose	.647
	.645
31. I believe that MDs are useful to my study	.182
	.177

Table 49: Sex Cross Tabulation and the Item

28. MDs help me better in solving my educational problems							
		SA	**A**	**U**	**D**	**SD**	**Total**
Gender	Male	18	50	24	6	3	**101**
	Female	8	22	21	11	3	**65**
Total		**26**	**72**	**45**	**17**	**6**	**166**

According to the table, 101 of students who attended in this sample study were male and 65 of them were female. 26 with percentage 15.6% of the students selected strongly agree answer, and 72 (43.3%) students agreed the item “MDs help me better in solving my educational problems” while 45 people with percentage 27.1% undecided about the item. On the other hand, 17(10.2) participated were disagree with the item “MDs help me better in solving my educational problems “and just 6 persons with percentage 3.6 answered the strongly disagree item.

Chapter 5

CONCLUSION

The current study is prepared by the researcher to investigate and the effect of the mobile devices in education, in the case of smartphones and tablets. Furthermore, this study aimed to examine the attitude and performance of students toward using mobile devices such as smartphone and tablets at Eastern Mediterranean University, North Cyprus, for course-related work regardless to their location at any time. The researcher obtained the data by using the survey with a comprehensive insight on the topic. In this chapter the researcher presents the finding from the students' performance and attitude and summarized answers of the main and sub questions which was presented by the examiner. Besides, the data that composed by the examiner from the questions to defining elements influencing on performance of the students when they are using mobile tools to study.

5.1 Summarizing the Study and Finding

Analyzing the university students' attitude and performance regarding to educational use of mobile technology and devices was the principle purpose of the study. Furthermore, this study analyzed the student's attitudes and performance towards using mobile devices for educational purpose with respect to departments, nationality, age, CGPA, gender, study level, owning devices, daily internet access, monthly expenditure, daily use of smartphone and tablet for study and daily use of smartphone and tablet's applications and features for study. Total number of participants were 180 students distributed in 14 departments. The quantitative research approach was used

to collect and analysis data. This study present two sections for measurement, the first one gather data related to the student information such as; departments, nationality, age, CGPA, gender, study level, owning devices, daily internet access, monthly expenditure, daily use of smartphone and tablet for study and daily use of smartphone and tablet's applications and features for study. On the other hand, the second part concentrate on educational use of mobile devices. However, the researcher asked from participated students to answer the questions according to the like-style then researcher used (SPSS) program to conduct the final resort.

5.2 Discussion

To answer the main and sub questions that state in the first chapter the researcher used this part.

5.2.1 What are the Students' Perception and Their Performance about Using Mobile Technology for Study Purposes?

In this study and according to the scale which is less than 3, the majority of participated students held a positive attitudes and performance toward educational use of mobile devices and mobile technologies. Availability of mobile devices, easy use of mobile technology and students desire to keep up with innovations by educational use of mobile devices, majority of students becoming as digital students they prefer technological devices in their learning life, with use of mobile devices they can easily connect to social sites which plays an important role in shaping students educational attitudes and performance toward using mobile devices and also by using mobile devises the can connect to internet which is a great source for study regardless of their location in any time these are some reasons of this positively attitude And performance toward educational use of mobile devices by Eastern Mediterranean University students.

5.2.2Are there Any Substantial Differences in the Students' Performance and also Students' Attitudes about Using Mobile Technologies such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Attribute to Their Sex?

The researcher investigate student's attitude and performance toward educational use of mobile devices according to students' sex pattern. The result demonstrations no big differences between female and men. Most probably this result is associated with the same opportunities in case of both gender as well as absence of skill differences gradually.

5.2.3 Are there Any Substantial Differences in the Students' Performance and also Students' Attitudes about Using Mobile Technologies such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Attribute to Their Oldness?

The researcher investigate student's performance and also their attitudes toward using mobile devices for study in relative to the students' sex. The results point to no important differences between the five student's ages category. Most probably this is because of the importance of educational use of mobile devices for all ofThe students in different ages. On the other hand, the students' belief about the more influence of mobile devices on the life and their study in future can be another reason for this result.

5.2.4 Are there Any Substantial Differences in the Students' Performance and also Students' Attitudes about Using Mobile Technologies such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Attribute to Their CGPA?

The researcher explored a significant differences between educational use of devices by students and their CGPA, the result revealed a positive effect of CGPA on students' performance and attitude about educational use of mobile devices. Maybe this result mobile devices such as smartphone and tablet for education in learning process. According to the result, those students who have a high CGPA shown more positive attitudes to use education for course-related works than who have low CGPA. However, the high CGPA may leads to the positive attitude and performance about educational use of mobile devices.

5.2.5 Are there Any Substantial Differences in the Students' Performance and also Students' Attitudes about Using Mobile Technologies such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Attribute to Their Owning One or More Mobile Devices?

The researcher investigate owning one or more mobile devices in relation to students' attitude and performance of educational use of mobile devices and the findings revealed a significant differences between the owning mobile devices eight groups; (smartphone, tablet, laptop computer, smartphone and tablet, smartphone and laptop Computer, laptop computer and tablet, all of the three devices and none of the devices). The result present that those students who own tablets have more positive attitudes and performance regarding to educational use of mobile devices. Most probably the main reason for this result is that most of the students owned laptop computers with percentage more than 73% and smartphone whit percentage more than 90% and just approximately 30 % of the students owned tablet so, one of the reason for buying a tablet is an educational purpose.

5.2.6 Are there any Substantial Differences in the Students' Performance and also Students' Attitudes about Using Mobile Technologies such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Attribute to Their Studies' Level?

The research explored the relation between the students' level of study and the tendency of educational use of mobile devices by students, the finding find out no significant differences among three groups of bachelor, master level and PhD level. Most probably the main reason for this result is the benefits that educational use of mobile devices can prepare for students for all of the study level and on the other hand, by improving the technology of mobile devices along with the changing of the lecture materials, using mobile devices can play important role in educational students' life regardless of the study level.

5.2.7 Are there any Substantial Differences in the Students' Performance and also Students' Attitudes about Using Mobile Technologies such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Attribute to Their Departments?

According to the result of the study, the researcher finds out significant differences in the attitude and performance of students from different departments and using mobile devices for educational purpose. May be the main reason for this difference between these two factors is the nature of the courses and major that is selected by the students in this survey. The students from each of Civil Engineering, Education, Electrical Engineering and Business have more positive attitudes toward educational use of mobile devices and play important role in rising their motivation about their courses.

5.2.8 Are there Any Substantial Differences in the Students' Performance and also Students' Attitudes about Using Mobile Technologies such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Attribute to Their Nationality?

The research explored the relation between students' departments and the tendency of educational use of mobile devices by students, the finding find out no significant differences among different nationality. Most probably the main reason for this result is the benefits that educational use of mobile devices can prepare same educational opportunity and sources for all the students from different nations.

5.2.9 Are there Any Substantial Differences in the Students' Performance and also Students' Attitudes about Using Mobile Technologies such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Attribute to Their Monthly Expenditures?

According to the result of the study, the researcher finds out no significant differences in using mobile devices for educational purpose and their monthly spending by students in the target group among the four monthly expenditure categories. Less than 350 dollars, 350 to 500 dollars, 500 to 750 dollars and more than 750 dollars. . Most probably the main reason for this result is the reasonable prices of mobile devices, especially the smartphone and also the dependency of human's life to smart mobile devices these days.

5.2.10 Are there Any Substantial Differences in the Students' Performance and also Students' Attitudes about Using Mobile Technologies such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Attribute to Their Use of Smartphone each day?

The researcher explored a significant difference between educational use of mobile devices and technology by students and their regular use of smartphone for educational purpose, the finding discovered an important differences according to the class 1-3 hours each day and extra than 3 hours per day. Most probably that's because of the mobile devises, especially smartphones devices are becoming essential for both human's ordinary life and educational life of the students, furthermore nowadays internet plays a very important role in students educational careers and using smartphone and mobile devices leads to better and easier use of internet for their course-related works regardless in their locations and in any time. Also, mobile devices provide course sources for university students easily, even with or without connecting to the internet.

5.2.11 Are there Any Substantial Differences in the Students' Performance and also Students' Attitudes about Using Mobile Technologies such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Attribute to Their Use of Smartphone's Applications and Features Each Day?

The researcher explored a significant difference between educational use of mobile devices and technology by students and their daily use of smartphone's applications and features for educational purpose, the finding revealed a significant differences favor to the category 1-3 hours per day and more than 3 hours per day. Most probably that's because mobile devices, especially, smartphone's applications and features are becoming essential for both human's ordinary life and educational life of the students,

furthermore nowadays students can record the lecture by using mobile devices or they can use some applications like the calculator and camera for taking pictures of any important part of course and so on. However, it's obvious who use smartphone's applications and features for study purpose per day more also have a more positive attitude about the positive impact of mobile devices in education.

5.2.12 Are there Any Substantial Differences in the Students' Performance and Also Students' Attitudes about Using Mobile Technologies such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Their Daily Use of The Tablet for Study?

The researcher explored a significant difference between educational use of mobile devices and technology by students and their daily use of tablet for educational purpose, the finding revealed a significant differences favor to the category 1-3 hours per day and more than 3 hours per day. Most probably that's because of the mobile devises such as tablet devices are becoming essential for both human's ordinary life and educational life of the students, furthermore nowadays internet plays a very important role in students educational careers and using smartphone and mobile devices leads to better and easier use of internet for their course-related works regardless in their locations and in any time. Also tablet devices provide a good screen of course sources instead of using books for university students.

5.2.13 Are there Any Substantial Differences in the Students' Performance and Also Students' Attitudes about Using Mobile Technologies Such As Smartphone and Tablets for Course-Related Works Inside or Outside the Campus Attribute to Their Daily Use of Tablet's Applications and Features such as Email, Camera for Their Study?

The researcher explored a significant difference between educational use of mobile devices and technology by students and their daily use of tablet's applications and features for educational purpose, the findings discovered an important differences according to the third category which is from 1 hour to 3 hours per day and also further than three hours each day. Most probably that's because mobile devices' applications and features are becoming essential for both human's ordinary life and educational life of the students, furthermore nowadays students can record the lecture by using tablets or they can use some applications like the calculator and camera for taking pictures of any important part of course and so on. However, it's obvious who use tablet's applications and features for study purpose per day more also have a more positive attitude about the positive impact of mobile devices in education.

5.2.14 Are there Any Substantial Differences in the Students' Performance and Also Students' Attitudes about Using Mobile Technologies Such as Smartphone and Tablets for Course-related Works Inside or Outside the Campus Attribute to the Location of Daily Internet Access for Study?

The study investigates the location for connecting daily to the internet by students in relation to students' attitude and performance of educational use of mobile devices and the findings revealed a significant difference. The result is presented that those students who use more mobile devices for connecting to the internet have a more positive attitude to the educational use of mobile devices. The main reason is that those

students prefer mobile devices for connecting to the internet through mobile devices find this kind of devices better and easier. Furthermore, the students can connect to the internet at anywhere at any time.

5.3 Conclusion

It is obvious that mobile devices can play an important role in learning environment and also one of the most important fields in learning process. Nowadays, by influence of mobile devices in student's life especially the new generations higher educational institutions find out that it is important improve their students' learning outcomes toward usage of mobile technologies in order to facilitate the learning environment and also this devices provides 21 generation of the students can lead the people in the correct system beside the modernism of the computers, mobile devices, smartphone. The researcher exposed this study at Eastern Mediterranean. University students' performance and also attitudes of using mobile devices and technology for educational purpose. According to the result of the study, students are possessing a positive. Attitude and performance toward educational use of mobile devices. Furthermore, this study present the determination of factors which can impact the attitudes and performance of students about educational use of mobile devices. The findings in this sample study shows gender, age, level of study, nationality and monthly expenditures variables does not influence on students attitudes and performance. While other variables such as; CGPA, Owning one or more mobile devices, departments, daily use of tablet's applications and features for course-related works, daily use of smartphone's applications and features for course-related works, spending time daily for using smartphone for education and spending time daily for using smartphone for education on the approaches and presentation of students when they use mobile devise such as smartphone and tablets for educational purpose.

REFERENCES

Aqda, M. F., Hamidi, F., & Ghorbandordinejad, F. (2011). The impact of constructivist and cognitive distance instructional design on the learner's creativity. *Procedia computer science*, *3*, 260-265.

Balaban-Sali, J.(2008).Designing motivational learning systems in distance education. *online submission*, *9*(3), 149-161. o*nline submission*, Turkish online journal of distance education--TOJDE v9 n3 p149-161 Jul 2008

Boling, E. C., Hough, M., Krinsky, H., Saleem, H., & Stevens, M. (2012). Cutting the distance in distance education: Perspectives on what promotes positive, online learning experiences. *The Internet and Higher Education*, *15* (2), 118-126.

Bradley, P. (2011). Here today, gone tomorrow: traditional classrooms vanishing as rise in online education accelerates. *Community College week.* Vol.23, Issue.20; p.6 (3). Retrieved 25 February 2014

Chifwepa, V. (2008). Providing information communication technology-based support to distance education students: a case study of the University of Zambia. *African Journal of Library, Archives and Information Science*, *18*(1), 51-51.

Demetrius Madrigal & Bryan McClain Strengths and weaknesses of quantitative and qualitative research, Published: September 3,2012

Gay, L. R. (1980). Educational Evaluation & Measurement: Competencies for analysis and application. *CE Merrill Publishing Company*. Retrieved on 24 April 2014.

Harris, D. A., & Krousgrill, C. (2008). Distance education: New technologies and new directions. *Proceedings of the IEEE, 96*(6), 917-930.

Karal, H., Ayca, C. E. B. I., & Turgut, Y. E. (2011). Synchronic distance education from the perspective of a handicapped person. *Turkish Online Journal of Distance Education, 12*(2).

Locatis, C., Berner, E. S., Hammack, G., Smith, S., Maisiak, R., & Ackerman, M. (2011). Communication and proximity effects on outcomes attributable to sense of presence in distance bioinformatics education. *BMC medical education, 11*(1), 1.

Mikre, F. (2011). The roles of information communication technologies in education: Review article with emphasis to the computer and internet. *Ethiopian Journal of Education and Sciences*, *6*(2), 109-126.

Oteng-Ababio, M. (2011). Door of hope or despair: students' perception of distance education at university of Ghana. *Turkish Online Journal of Distance Education, 12*(3).

Owusu-Ansah, A., Neill, P., & Haralson, M. K. (2011). Distance education technology: higher education barriers during the first decade of the twenty-first century. *Online Journal of Distance Learning Administration*, *14*(2).

Robson, C. Real world research: A resource for social scientists and practitioner researchers. 1993. Chap, 12, 383-385. Retrieved 20 may 2014.

Richardson, J. T. (2006). Investigating the relationship between variations in students' perceptions of their academic environment and variations in study behavior in distance education. *British Journal of Educational Psychology*, *76*(4), 867-893.

Simonson, M. (2003). Definition of the field. *Quarterly Review of Distance Education*, *4*(1), vii.

Thangada, D. (2010, January). Factors affecting distance education at Southern University at New Orleans a historically black university. In *Allied Academies International Conference. Academy of Information and Management Sciences. Proceedings* (Vol. 14, No. 1, p. 74). Jordan Whitney Enterprises, Inc.

Traxler, John (2015, November). Defining mobile learning. University of Wolverhampton Wolverhampton, WV1 1SB, UK John.traxler@wlv.ac.uk In *IADIS International Conference Mobile Learning.*

Wang, Q., Woo, H. L., Quek, C. L., Yang, Y., & Liu, M. (2012). Using the Facebook group as a learning management system: An exploratory study.*British Journal of Educational Technology, 43*(3), 428-438.

West R. E. (2011). Insights from research on distance education learners, learning, and learner support. *American journal of Distance Education.* Volume 25, Issue3, 2011. Retrieved 9 March 2014.

Yengin, I., Karahoca, A., Karahoca, D., & Uzunboylu, H. (2011). Deciding which technology is the best for distance education: Issues in media/technology comparisons studies. *Procedia Computer Science, 3*, 1388-1395.

Zhan Q. & Zhang L. (2011). Principles and a framework of performance evaluation for learners in distance vocational education. *Procedia Engineering,* Volume 15, Pages 4183-4187. Retrieved 9 March 2014.

APPENDIX

Appendix A: Students' Questionnaire

Department: _____

Nationality: _____

Gender: a) Male b) Female

CGPA: a) 0.0 – 1.0 b) 1.0 – 2.0 c) 2.0 – 3.0 d) 3.0 – 4.0

Age: a) <=20 b) 21-25 c) 26-30 d) 31-35 e) >35

Level of Study a) 1st year b) 2nd year c) 3rd year d) 4th year e) Master f) PhD

Select one or more for your ability for internet connection:

( ) home ( ) dormitory ( ) mobile device
( ) internet café

Usually, how much do you spend monthly? (US$)

a) < 350 $ b) 350 - 500 $ c) 500 - 750 $
d) > 750 $

What kind of devices do you have? (You can select more than one)

( ) Smart phone ( ) Tablet ( ) Laptop computer

If you have Smartphone:

How much hours per a day do you use your Smartphone at home (dormitory) for educational purposes?

a) 0 b) < 1 c) 1 – 3 d) > 3

How often do you use Smartphone's features and applications for educational purposes, such as camera, voice recorder, calculator, internet, calendar, educational apps and etc, for educational purpose at home? (For instance watching an educational video)

a) Never b) Rarely c) Usually d) Almost always

If you have Tablet:

How much hours per a day do you use your tablet at home (dormitory) for educational purposes?

a) 0 b) < 1 c) 1 – 3 d) > 3

How often do you use Tablet's features and applications for educational purposes, such as camera, voice recorder, internet, calendar, educational apps and etc, for educational purpose at home? (For instance: reading an educational article)

a) Never b) Rarely c) Usually d) Almost always

Which one do you prefer to bring to the University for your course-related Work? (You can select more than one)

( ) Smartphone ( ) tablet ( ) laptop computer

How much do you agree with the following? (Please mark the most appropriate one) **MDs**: Mobile Devices, such as smart phones and tablets.	Toughly Agree	Agree	Unclear	Disagree	Toughly Disagree
1. I enjoy using the MDs in classroom					
2. I can learn better by using MDs					
3. I feel more motivated in the lessons when MDs are used					
4. I believe that the ETs usage is not adequate in the learning process					
5. I believe that the lecturer's age will affect his/her perception about using MDs					
6. I believe that we need to improve students' and teacher's culture about using MDs					
7. I believe that MDs are necessary for future education					
8. I dislike the lessons that are lectured with using MDs					
9. It is beneficial for me to learn the usage of the MDs					
10. I prefer to use a computer to write my assignments and reports					
11. It is a waste of time to use MDs in education					
12. I lose my concentration in the lessons when MDs are used					
13. I learn slower in the lessons when MDs are used					
14. I feel bored when MDs are used in the lessons					
15. I believe that there is no need to use MDs in education					
16. I can benefit more when MDs are used in the lessons					
17. Use of MDs is unnecessary for my education					
18. Using MDs improve my ability and motivation to learn					
19. Using MDs in learning help me to develop skills related to the courses					
20. Using MDs would facilitate the understanding of difficult courses					
21. The MDs help me to follow the courses better					
22. MDs help to increase my academic performance					
23. MDs help to increase my academic confidence					
24. Students' performance is not affected from the use of MDs in classroom					
25. The MDs help me to do my academic homework faster					
26. MDs allow me to apply the acquired knowledge					
27. I feel stressed when homework requires MDs					
28. MDs help me better in solving my educational problems					
29. I use MDs like e-mail in communication with others for educational purpose					
30. I use MDs like Internet for educational purpose					
31. I believe that MDs are useful to my study					