A Case Study of a German Language Learning Perceptions of Learners' on Android Systems at the School of Foreign Languages, Eastern Mediterranean University

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ABSTRACT

At the present time, with the advancement of technology in mobile phones and tablets which have equipped people with mobile computers, and also because of students' preferences for convenient and low cost approach of learning, the idea of using mobile applications for educational purposes is gradually getting stronger. Hence, it is essential to investigate about the benefits and drawbacks of using applications in education and develop this idea in order to improve and prosper the future of pedagogy and expand it beyond classrooms.

The aim of this research is to analyze the viewpoint of the Eastern Mediterranean University (EMU) students, who are registered to the German Language Learning course (ELT502) which is given by the School of Foreign Languages.

In this research, quantitative approach is used and the required data was gathered through questionnaires which were responded by the students of the School of Foreign Languages and has been analyzed by SPSS 24. The results of this research illustrated that students were satisfied by using this type of education and are willing to utilize it again in order to improve their language learning skills. Along with the results, this research has provided some recommendations like applying the efficient methods in M-Learning in order to improve the learners' language learning process.

Keywords: technology, mobile devices, education, language learning, pedagogy

ÖZ

Günümüzde, insanları mobil bilgisayarlarla donatan cep telefonlarında ve tabletlerde teknolojinin gelişmesi ve ayrıca öğrencilerin öğrenmeye uygun ve düşük maliyetli yaklaşım tercihleri nedeniyle, mobil uygulamaları eğitim amaçlı kullanma fikri giderek daha da güçleniyor. Bu nedenle, eğitim amaçlı mobil uygulamalarının avantaj ve dezavantajlarını araştırmak gelecekte sınıfiçi ve dışı uygulamalarının verimliliğini artıracaktır. Bunun yanında pedagojik formasyon açısından da öğretimi zenginleştirecektir.

Bu araştırmanın amacı, Yabancı Diller Yüksek Okulu tarafından verilen Almanca Dil Kursuna kayıtlı olan Doğu Akdeniz Üniversitesi (DAÜ) öğrencilerinin bakış açılarını incelemektir.

Bu araştırmada, Yabancı Diller Yüksekokulu öğrencileri tarafından cevaplanan ve SPSS 24 tarafından analiz edilen anketlerle nicel yaklaşım kullanılmış ve gerekli veriler toplanmıştır. Bu araştırmanın sonuçları, öğrencilerin bu tür bir eğitim kullanarak tatmin olduklarını ve dil öğrenme becerilerini geliştirmek için tekrar kullanmaya istekli olduklarını göstermiştir. Sonuçların yanı sıra, bu araştırma, öğrencilerin dil öğrenme sürecini iyileştirmek için M-Öğrenmede etkili yöntemleri uygulamak gibi bazı önerilerde bulundu.

Anahtar Kelimeler: teknoloji, cep telefonları, dil öğrenme, pedagojik formasyon

*I would like to dedicate this effort to my devoted **FAMILY** for supporting me to finish my study and for keeping my spirit up with all the innocence.*

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LIST OF ABBREVIATIONS

D-Learning   Distance Learning

E-Learning   Electronic Learning

ICT   Information Communication Technology

M-Learning   Mobile Learning

U- Learning   Ubiquitous Learning

Chapter 1

INTRODUCTION

1.1 Background of the Study

In this chapter the background and aspects of the research, problem status, aims of this research, significance of the study, limitations and definition of the terms are elaborated.

In this century, the technology and computers have been distributed all around the world. Therefore, they have significantly affected humans' life style and condition in every aspect. It also had a vast influence on education. Nowadays our pedagogical system includes E-learning, distance learning, mobile learning (M-Learning) and ubiquitous learning (U- Learning).

E-Learning is explained in a various approaches, but one of the most suitable and comprehensive definitions belongs to Stockley (2003). According to him:

> E-learning is the delivery of a learning, training or education program by electronic means. E-learning involves the use of a computer or electronic device (e.g. a mobile phone) in some way to provide training, educational or learning material.

It is not a novel idea, but technology could fortify it a lot during the last decade. Distance learning was founded many long time ago by instructors via sending lessons, introducing references and received students' assignments by mail (Moore, 1990). Nowadays E-Learning prepared the environment for mobile learning (M-Learning) so

that computers and smart devices can play teachers role and media can transfer the required information.

At the present time, because of the alteration of life styles, most of people are very busy with their jobs and get involved in daily routines, so they cannot participate in physical classrooms. Hence, M-Learning can be a proper alternative for them. Here are some remarkable advantages of M-Learning:

- Provides ubiquitous learning environment
- Improve learners' skills in using computer and smart devices
- Admire learners to be autonomous
- Convenient time management
- Lower total costs
- Variety of courses and sources
- Convenience in discovering courses and sources
- Ease of update
- Scalability

The quality of education is measured by the methods and approaches that teachers implement while teaching. Today there are numerous methods for pedagogical aims, but teachers need to choose the most beneficial methods regarding the subject, the atmosphere of the class and level of learners, in order to maximize their comprehension, meditation and their solo and group activities, because one of the main purposes in education is to enhance the collaboration and social skills (Johnson, 1981). Therefore, it is significant to select right methods to ameliorate the educational level. In the same way, effective M-Learning relies on learning methods appropriately

selected and implemented. But the main issue is which methods are feasible to be implemented on computer devices and how to run them.

The technology has given us lots of tools and facilities which makes the teaching and learning process more effective and more convenient. By the development of portable and mobile devices, education has transferred beyond the walls of the schools. Hence, learners don't necessarily need to be in classes physically.

The facts and figures illustrate the widespread use of smartphones and tablets in the last decade. Actually most of young people have smart phones, so it will provide a good opportunity for language learners to learn and practice on their smartphones which are usually accessible. And as Campitelli and Gobet cited: Although other factors in learning such as intelligence and motivation affect performance, practice is necessary if not sufficient for acquiring expertise (Campitelli & Gobet, 2011).

There are diverse operating systems on the smartphones and tablets such as Android, IOS, Windows, Symbian, et cetera. For providing an application on one of these systems, it is compulsory to find out which one runs the mentioned application in the best way and which one has the highest market share due to the lack of time and manpower to create the application on all operating systems.

Thus, this research embraces two aspects, first one is educational and the other aspect is related to software development.

The educational aspect includes the contents and the course material which will be applied on the application and it is necessary to be comprehensive and verified so that

learners can trust the courses presented by the application. Additionally it requires different learning methods such as learning via listening, observing pictures, doing exercises, et cetera, which make the application more interesting for students and prevent it from being invariable. The variety of methods will also help to increase the efficiency of the course material.

There are numerous factors for a software developer to deploy an app. First of all, the developer should decide on which system he/ she will create the application and by using which tools and languages for programming. Afterwards it is essential to choose the appropriate method for developing the software according to the subject, complexity, requirement, time, and etc.

1.2 Problem Statement

There are various learning methods to utilize for language learning. These methods are used in order to assist learners in studying more effective and to make the subject of studying more attractive for them. But there are some issues along with implementing these methods through devices in M-Learning. Here are some problems:

- Bandwidth Issue And Connectivity
- Changing technology
- Computer Literacy And Digital Divide
- Lack of Quality E-Content
- Difficulty in Engaging Learners Online

1.2.1 Aim of the Study

The aim of this research is to explore and implement methods in online language learning by creating an application of Android system. Researcher wants to design and apply a new language program in learning a foreign language such as "German". The

researcher wants to investigate the implementation of existing method to discover imperfections. The new suggested online language learning model will help students to have better learning experiences by getting involved in learning the language out of the classrooms and become more autonomous learners.

The purpose of research can be listed as follows:

- To reveal the learning methods which can be used in M-Learning system by the students of the School of Foreign Languages at Eastern Mediterranean University.

- To reveal the perceptions of students' according to their M-Learning experiences at the School of Foreign Languages at Eastern Mediterranean University.

- Assessing students' needs and their preferences in M-learning environment.

- To discover limitation and problems of implementing common learning methods for language learning.

- To develop an app for learning German language on android systems in order to help students to have better and more efficient learning experiences.

The researcher aims to investigate the following questions:

- What are the advantages and disadvantages of using the smart devices in order to learn a foreign language?

- What are the existing problems in learning a foreign language like "German" on mobile devices?

- What are the current methods that are used in order to learn a foreign language?

- Is it possible to create and apply a new method/s by using an Android system in order to learn a foreign language?

In this research the researcher will collect data through questionnaire. The questionnaires will be applied to the students of the School of Foreign Languages.

1.2.2 Significance of the Study

In this thesis the researcher will underline the importance of learning whether this is language learning or in general, not just by using mostly the theory but also application. That is to say students are encouraged to practice 'learning by doing' constructing their own knowledge under the guidance of the instructor. Of course there will be segments for teaching grammar and vocabulary, but the priority is to learn by exercises. This application will also include different types of methods for teaching a foreign language such as videos, dialogs, photos, and some authentic tasks which are the real world issues (authentic). Therefore, the significance of using constructivism in language learning will be emphasized in this research. Rather than using traditional method of teaching and learning in language learning the researcher is suggesting to use "constructivist" approach which will encourage students to think and apply. As Honebein (1996) describes:

> The constructivism philosophical paradigm as an approach that asserts that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. It is based on the analogy or basis that people form or construct much of what they learn through experience (Cashman et al., 2008; Hein, 1991).

1.2.3 Assumptions

It was assumed by the researcher that:

- The participants will be eager to participate into the research.

- The participants are assumed to read the questionnaire carefully and their answers will reflect their clear perceptions.

1.2.4 Limitations of the Study

Questionnaire might have been answered by students who have not used any E-Learning or M-Learning Systems or they might not answer all the questions.

The application which has been designed by the researcher may not have the attractive graphics and animations because of the lack of time.

1.2.5 Definition of Terms

E-Learning: "E-Learning refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance" - J. Rosenberg

M-Learning: An education or training method directed by means of portable smart devices such as smartphones or tablet computers.

Teaching methods: A teaching method consists of the principles and methods used by teachers to enable student to learn. These strategies are determined partly on subject matter to be taught and nearly by the nature of the learner.

Chapter 2

LITERATURE REVIEW

This chapter elaborates the meaning of distance learning along with its benefits and drawbacks, the teaching methods used in E-Learning environment, the significance of ubiquitous learning and to evaluate whether it is appealing enough for learners or not.

2.1 The Concept of Distance Learning

Distance learning is a type of education that concentrates on teaching methods and the technology which will be applied in order to deliver teaching and the required information to students who are not physically present in a conventional pedagogical setting such as a school or university classrooms. It has also been defined as "a process to create and provide access to learning when the source of information and the learners are separated by time and distance, or both." (Honeyman & Miller, 1993, p. 68).

The genesis of distance education geos to mid-19th century in Europe and the United States .They used to apply the latest technology of their own time to support learners who were not able to attend the classes physically, or are in a remote location, or work full time and those who want to study more autonomously. There are various types of distance education including CD-ROM Courses, Online Learning, Correspondence Courses, Tele-Courses and Mobile Learning which is the main subject of this thesis. According to (Agah T. Koruc & Ayse Alkan, 2011), the terms 'Mobile Learning' and 'Distance Learning' are used interchangeably although they have disparate meanings. D-Learning is more comprehensive in comparison with M-Learning and M-Learning

is one of the most recent versions of D-Learning. Hence, Mobile Learning can be mentioned as a specific form of Distance Learning. M-Learning is described by most researchers as a method of leaning experiences via portable devices such as Laptops, tablets, Smart phones, etc. These devices along with the internet have made M-Learning possible thus, teaching and learning has crossed the classroom walls and there are no physical boundaries in education anymore. Now a days, Mobile Learning are popular because students are able to access and employ contents and instructional materials more convenient regardless of the time and place. Accordingly, demanding for online courses is increasing. In 2013, there were 5,522,194 learners enrolled in any distance education courses at degree-granting postsecondary institutions (U.S. Department of Education, National Center for Education Statistics, 2016) and online registrations is growing all around the world. Mobile learning is a tremendous revolution in learning world, since in this type of learning there are no classrooms to force students to attend, and it would be completely voluntarily, therefore the learners are more eager to study and it make them more autonomous.

There are different types of Mobile learning and here we are introducing some categories of Mobile learning.

Tech-driven M-Learning: There are some specific devices which were innovated only for pedagogical purposes to indicate the technical capabilities in education.

Miniature and also portable E-Learning: In this category, all the wireless, handheld and ubiquitous technologies are applied to execute methods and approaches which were already used regularly in E-Learning, in the form of websites or Apps.

Linked classroom learning: The mentioned technologies are also used it classrooms to perform collaborative learning and to increase the speed of teaching and practicing such as smartboards.

Informal, personalized, situated mobile learning: The same technologies plus some additional functionalities like GPS or camera on the smart phones which can be utilized for some educational exercises that would otherwise be inconvenient or impossible.

Remote, rural, development mobile learning: The mentioned technologies can be applied to address the environmental and physical difficulties in order to support education and to deliver the context where conventional E-Learning is not efficient anymore.

This research embraces Miniature and also portable E-Learning type of M-Learning. Hence it is essential to choose the most efficient methods which their implementation is feasible on these devices. One of the most crucial and difficult parts of learning a new language is learning and memorizing vocabulary as Thornbury (2004) cited; vocabulary is generally a matter of remembering, dissimilar to e.g. grammar learning, which is based mainly on rules. There are various effective methods for learning vocabularies such as using photos as Wright (1990) pointed out that pictures are inspiring and draw learners' attention. Wright has also mentioned that images provide sense of context of the language and give particular reference point. The other method which is implementable on Apps is using sound to hear the pronunciation of the words. McCarthy (1992) has also cited that besides explaining the meaning of a word, it is also substantial to concentrate on forms, because the sound of words is one of the aspects that affect the organization of the mental lexicon.

2.2 Benefits of Mobile Learning

The M-Learning provides a significant educational environment which in students can recieve information more conveniently. The M-Learning enhances opportunity for learning because students can access to diverse information sources and topics. It also assist students to develop their knowledge in using technology for different purposes and improve their 21st century skills. Now a days the Mobile Learning has become very popular and it has engaged many students from all around the world. One reason why there is so much discussion about mobile learning is that there are many benefits and advantages in using M-Learning that will be mentioned in the rest of this chapter.

2.2.1 Cost-Effectiveness of Mobile Learning

The cost of education especially language learning is increasing due to the high requirement of learning a foreign language in this era which is filled with international affairs, and the issue of education cost has been a big challenge for many learners. "The lifetime earning gap between high school graduates and college graduates is continuing to widen" (Dynarski &Scott-Clayton, 2013). On the other hand, the cost of college and universities tuition is growing rapidly. Most of people believe that mobile learning can reduce the cost of education because the institutions which provide mobile and online learning classes, receive much lower tuition fees, on the other hand they have a huge number of students in comparison to traditional classrooms.

2.2.2 M-Learning Provides Ubiquitous Learning Environment

Because of the hustle and bustle of today's life, many learners would not have free time to spend on traffic jam to reach the classroom and many students do not appreciate to learn at their office desk. Therefore, the biggest benefit of mobile learning is its intrinsic capability to provide anytime-anywhere learning environment for learners.

2.2.3 M-Learning Improves Learners' Skills in Using Computers and Smart Devices

Joseph Katz defined general education as "the knowledge, skills, and attitudes that all of us use and live by during most of our lives—whether as parents, citizens, lovers, travelers, participants in the arts, leaders, volunteers, or Good Samaritans" (AAC 1988, 3). At the present time, computers and operating systems have embedded in many devices such as mobile phones, telephones, TVs, and even most of modern house hold appliances. Therefore, it is one of most significant criteria of an educated person to be capable of utilizing these systems and devices, and one of the benefits of M-Learning, particularly for older learners, is that it compels them to improve their skills for using these systems.

2.2.4 Convenient Time Management

The traditional classes usually requires fixed free time for a period of time which is really difficult to dedicate this amount of time every day for attending classes specially, for learners who have full time jobs. However mobile learning can solve this problem by providing a flexible environment which allows learners to study and practice whenever they can and where ever they are, such as practicing at home, at public transportations or even during travel.

2.2.5 Convenience in Discovering Sources

As it has been discussed in (Leung, C. & Chan, Y., 2003) article, by using Mobile Learning approach, the learners would be able to access numerous courses and sources conveniently. They are also able to choose the methods they prefer to learn, which is on the contrary to the traditional classrooms that all learners are ought to follow one method which will be no beneficial for some students.

2.3 Disadvantages of Mobile Learning

2.3.1 Connectivity and Technical Issues

E-Learning environment requires technological facilities to be active permanently. Some people are responsible for web server access, required hardware and run software for preparing a course on mobile devices. Any kind of problem/s on network or any of the mentioned devices can interrupt online courses, hence, probable technical problems should be appraised by developers of Mobile Learning courses in advance. "The wider the student demographics, the more complicated the problem becomes" (Taylor, 2002; Appana.S, 2008).

2.3.2 Limited Ability to Access Course Materials

For developing a Mobile Learning course, it is necessary to design a software as an App or a website, and it also requires proper devices to get that software implemented. Therefore, students without access to adequate technology who live in isolated areas such as regions which internet does not support or countries that have limited access to the internet, and also according to the increase of prices of all smart phones and tablets and distributing the new models of devices rapidly by companies, that persuade customers to purchase those new models, learners who have limited revenue, would be unable to utilize these type of courses.

2.3.3 Difficulty in Engaging Learners Online

Earlier in this paper, it was mentioned that one of benefits of M-Learning is that is convenient in time managing that students do not need to study at the certain time. However, it possess disadvantages as well. As cited in (Chu, Hwang, Tsai. 2009) article, one of the main problems which causes students to lose interest in using an educational App is the lack of quality and proper learning strategies and facilities that can help students to learn this complex learning method. Evrim Üstünlüoğlu also did

a research on several students to realize whether they are able to be autonomous and he concluded "students do not perceive themselves as sufficiently autonomous, that they are unwilling to take responsibility and that they continue to see the teacher as a dominant figure who is the decision maker in the classroom."(Üstünlüoğlu, E. 2009).

According to Üstünlüoğlu's opinion, most of leaners need teachers and classrooms to force them to attend and to study their course, and a few number of students are autonomous in comparison to majority. Therefore, the M-Learning would not be that much efficient for many students.

2.4 Related Researches

Luiz Fernando Capretz, Abdalha Ali and Abdelkader Ouda (2012)**,** measured the quality of the Mobile Learning experience based on the usability of the software which is representing a course. Considering ISO/IEC-9126-1, usability contains the comprehensibility, learnability, feasibility, and attractiveness. The most substantial criteria for representing a course is its understandability which has a direct relationship with the user interface. Usually the best way for designing an efficient and comprehensible interface is to make it simple, so it does not confuse users and utilize variety of colors and appropriate font sizes to conduct learners which parts to pay attention more. Furthermore, by using a quality index based on learners' perceptions (OLQ-TLP) which includes eleven categories: "learning support, social presence, instruction, learning platform, instructor interaction, learner interaction, learning content, course design, learner satisfaction, knowledge acquisition, and ability to transfer" proposed that the most important variables, according to the teachers' perceptions, are "social presence, instruction, instructor interaction and learner interaction" and high rated variables from the students' point of view are "ability to

transfer, knowledge acquisition, learner satisfaction, course design, learner content and learner interaction". Consequently, it is highly recommended to educational App developers to design a section so that students can have social activities there and have interactions with instructors and other learners.

Wen-Hsiung Wu, Yen-Chun Jim Wu, Chun-Yu Chen, Hao-Yun Kao, Che-Hung Lin & Sih-Han Huang (2012) examined M-Learning via meta-analysis of 164 studies between 2003 and 2010 and the final results of that survey are: 1) The most effective criteria of a M-Learning system is the design of it. 2) The research results of the M-Learning studies are remarkably positive. 3) Mobile learning is more widespread at higher education institutions. 4) The most common devices that are utilized for M-Learning are mobile phones and PDAs but it will be replaced by the new technology.

Creating a strong framework for Mobile Learning depends on three crucial elements that are integration of tools, pedagogical approaches, and assessment techniques. These elements lead instruction method to a student-center approach and carry out Constructivism as a theory that describes the learning procedures. It is necessary that teachers should check the learning strategy of the Mobile Learning system because the lack of effective teaching strategies may cause an unsuccessful learning.

Tom H Brown (2003) explains the role of M-Learning in the future of E-Learning and its educational qualifications by reviewing the impacts of M-Learning in South Africa. He has also explained the difference between E-Learning and M-Learning and its benefits and drawbacks along with introducing some models for M-Learning via mobile phones in 2003 and 2004. He believes that the challenge is to design and develop proper learning environments and softwares, based on sound instructional

principles in order to optimize learning in the M-Learning environment. Nowadays most of students own smart phones with the ability to connect to the internet and it is beneficial to develop a didactical environment on these devices to engage the distance learners with courses while at home or work, or on a journey.

Chapter 3

RESEARCH METHODOLOGY

3.1 Presentation

This chapter offers the philosophical state of the researcher, research method, research design, data collection instrument, population and finally data analysis.

3.2 The Philosophical Stance of the Researcher

A philosophical position is a set of opinions and viewpoints that explains a particular philosophy. Current research which is about providing a language learning App falls into positivism philosophical stance.

The primary aim of distance education is to provide "pedagogic opportunities" for people who do not have access to educational institutes due to the lack of time or money and many other reasons. According to (Kim & Bonk, 2006) technologies for distance learning are emerging and advance in internet technology increase the use of more advanced technology in distance education. E-Learning is one of the subsets of distance education which engage learners in utilizing computers, laptops, smart phones and tablets along with internet as the delivery method. According to the fast progress in computer technologies related to E-Learning and the advance in internet technology, the use of more advanced technology in E-Learning has increased. Recent figures and numbers indicate that E-Learning has become a popular favorite strategy in education and due to the dramatic growth of distance education, considering the implementation of teaching and learning methods in order to increase the quality of distance education

is essential. Nowadays, the relation and connection between technology and education is inevitable, therefore providing an environment to connect technology to education is very substantial.

As mentioned earlier, the philosophical stance of this research is positivist because, in fact, positivism is an approach which is based on experiments and statics to divulge the true essence of the study case. The purpose of science in this stance is to "stick what we observe and evaluate". Positivist believes that the whole science is extracted from sense-experience and the basic part of scientific endeavour is observation and experimentation.

3.3 Research Methods

Actually research methods are subsets of educational research. The educational research is the systematic use of a group of methods that are employed to prepare reliable data about educational issues. The research methods are divided into qualitative, quantitative and a mix method design.

Qualitative and quantitative research approach vary in several aspects and they work to achieve different goals and also utilize different methods and designs. Qualitative research generally uses a small sample to explore and describe experiences through the use of rich descriptions of detailed information in an attempt to comprehend and interpret human perspectives. It is less interested in generalizing to the population as a whole. On the other hand, Quantitative studies generally apply large samples to test numerical data by comparing or finding correlations among sample attributes so that the findings can be generalized to the population. Choosing a specific methodology depend on our Researcher questions. The quantitative approach is used in this study.

3.3.1 Quantitative Research

The general purpose of quantitative research is to explain, predict, investigate relationships, and to clarify current conditions or to examine possible impacts and influences on designated outcomes. Quantitative research method is an approach that applies numerical data to explain a particular fact. Numerical information and statistics are analyzed mathematically. Quantitative research desires to expand explanatory general laws based on statically evaluating assumptions which are expected to be accurate and true. A quantitative approach authorize that psychological and social events have a visual reality that is free of the studied subjects. Therefore, researchers need to consider the interval between themselves and what is being investigated. In a quantitative research, researchers exploit a pre-constructed instrument into survey which is suitable to different types of participants. They haphazardly select a large representative samples in order to generalize their discoveries.

The main benefit of this method is that it simplifies comparisons and statistics of the data because it authorizes one to analyze the answers of a number of contributors to all questions. The gathered information from questionnaires aid researchers to find a general opinion of participants' perception and idea about the particular program. These methods help researchers to have a wide range of findings by mathematical models and then guide them to deliver those findings via using numbers.

3.4 Research Design

3.4.1 Case Study – Research Strategy

A case study is "A strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence" (Robson, 2002). A case study is an approach that

apply different research technique such as questionnaire, interviews, observations and document analysis in order to gather data. Researchers proposed that case study is a heuristic strategy that involves the precise description of the phenomena for which evidence is collected (event, program, process, etc.). In this research, a case study will be utilized to discover learning methods which are useful and implementable on M-Learning systems in School of Foreign Languages at Eastern Mediterranean University. There are plenty of reasons for applying case study research strategy. One of them is what Yin (2003) suggested that the case study is an efficient method when the questions contain "how" or "why". The other reason is when researchers don't have control over current phenomenon. Case study focuses on particular and small sample size and analyzing a large number of data. Overall, case studies collect data and information by using different methods such as interviews, questionnaires, and observations. Therefore, high variety of data sources guide researchers to find more accurate and correct results.

3.4.2 A Case Study of Eastern Mediterranean University, North Cyprus (School of Foreign Languages)

This study took place in School of Foreign Languages at Eastern Mediterranean University. As a population, the beginner level students who are involved in German language learning are going to be worked with. Regarding the reliability and validity the researcher will use a questionnaire which is already published by: Chen, X. B. (2013). Tablets for informal language learning: Student usage and attitudes. *Language learning & technology,* 17(1), 20-36. The permission from the author of this article has already been taken. Finally the findings from then questionnaire are going to be analyzed by using the SPSS program. This thesis requires the basic knowledge of German language, Java programming and the knowledge and ability to employ the

methods inside of the application. So the researcher should be able to speak the German language and to be able to recognize and implement the most useful and exciting methods for the language learners of German. The researcher needs to gather data from language learning books about the division of information and components in every lesson and pay attention to the proper numbers of exercises per each lesson.

The next phase of the thesis is the programming. For developing an application the developer should decide which operating system he/she wants to run the application on. The researcher decided to choose the android operating system due to its large market share with the percentage of 85 in comparison to others including IOS and windows with the proportion of 14.7% and 0.1% respectively. Therefore, to design an application on android, the developer needs to choose a developer tool and the best and newest one for android is the Android Studio.

Android Studio has two phases, the first one is the User Interface designing which is really significant, because the language learners will observe the interface and if it is not pleasant enough they would not get attracted to the application and lose the interest. The other phase is programming. The language used for programming with this tool is Java. In this phase the developer applies the whole logic and structure of the application which is the most important part of the application.

3.5 Data Collection Instrument

This study applies questionnaire as an instrument for collecting data about the language learners' perception about E-learning and use of technology in education. After receiving the approval from the Head of the Department of School of Foreign Languages and the Ethical Board, as a researcher a suitable date has been arranged to meet with the class teacher in order to deliver the questionnaires. Then the

questionnaires have been distributed to students and necessary explanations have been made for them. During data collection, the researcher has also made necessary clarifications for the students in order to prevent any misunderstandings.

Any project requires appropriate instruments for achieving determined goals. Like all projects, a researcher requires some instruments and approaches for gathering required data and information. According to the subject and the field of a research, researchers utilize different method of data collection such as questionnaire, interviews, observation, tests, video and audio record and etc.

3.5.1 Questionnaire

Using various types of questionnaire for gathering data is one of the most common methods in a research study. Questionnaire is a research instrument which contains a list of questions with instructions on how to record the answers. Researchers utilize questionnaires to collect information about participants' ideas, experiences and perceptions and this is an appropriate method for every project specially the ones with sensitive subject with wide range of participants, because it gather information from many participants in a short time. The structure of a questionnaire and also the number and type of questions is related to research's subject which should be clear and realistic. In this research, the aim of the applied questionnaire is to reveal the participants opinion about the efficiency and the satisfaction of using smart devices for language learning.

The other factor is the reliability of the questionnaire. Reliability and validity of a questionnaire demonstrate the practical value of a questionnaire. Conducting a questionnaire is a complicated task and preparing a questionnaire that helps researchers to meet the objective of a study requires skill and knowledge about a key issue.

Considering the reliability and validity first of all the instrument which is used, questionnaire, has already been piloted and published by: Chen, X. B. (2013) beforehand. Secondly, according to the article the reliability statistics is shown as below:

Reliability Statistics

Cronbach's Alpha	N of Items
.862	30

The author of the article used multi dimensional questionnaire. For example he used this explanation:

> Sharples (2009) proposed that a useful way to approach the evaluation of MALL technology is to address its usability (will it work?), effectiveness (is it enhancing learning?) and satisfaction (is it liked?). Following Sharples's suggestions and Davis's (1993) Technology Acceptance Model (TAM), an attitude survey questionnaire (Appendix C) was composed to assess students' perceptions of the usability, effectiveness, and satisfaction with the tablets for language learning. The survey, which consisted of 30 statements eliciting student opinions on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree), was administered after the participants had been using the tablets for four weeks.

This can show that the questionnaire he used supported multi dimensional factors.

3.6 Population

The students who studies German language at the School of Foreign Languages at Eastern Mediterranean University are the participants of this research. These students are from different countries such as Turkey, Jordan, Cyprus, Libya etc. with different educational background that is to say not all of them studied German as a foreign language before. They have various aims for learning German language, some of them mentioned that they want to become a teacher, some of them are willing to go to Germany and a few would like to just pass the course. The participants are between 20 and 26. They will be given questionnaires and it is on voluntarily basis to participate

into the research in order to collect information about the M-Learning courses and their habits in use of electronic devices in educational purpose.

3.7 Sample

Since in this case, the population consisted of only 16 students, whole population has been considered as the sample.

3.8 Data Collection Period

In order to proceed this research study, the researcher has prepared a formal letter (see Appendix A) and sent it to the head of the School of Foreign Languages at Eastern Mediterranean University with the sample of the attached for the department's consideration. After one week the permission request was approved by the head of the department in order to apply the research and the questionnaires in the School of Foreign Languages. Within four month (during the spring semester) the data was collected.

3.9 Data Analysis

The SPSS v.24 is used to analyze the quantitative data. All the gathered data from the questionnaire is entered into SPSS in order to analyse and reach for the findings. The value of mean and median of the collected data have been calculated in order to demonstrate that it has been distributed correctly. Also by applying one-sample t-test (p.28), the significance level of all items are revealed to show how correct the statistical evidence is. The goal of analyzing data and information is to gain usable and effective information via examining, cleansing and modeling gathered data. The researchers need to analyze all the data they have gathered in order to illustrate the data and comprehend the all of the participants answers accurately.

Chapter 4

RESULTS AND FINDINGS

4.1 Results & Analysis

As a methodology, quantitative approach is used. The researcher applied questionnaire in order to gather information from students at the School of Foreign Languages at Eastern Mediterranean University and apply all the data to create a better and more effective App for German Language Learning.

For gathering information, the researcher had carried out the questionnaire which was handed over to all the German Language Learning students which included sixteen students from the School of Foreign Languages. In order to analyse the questionnaire SPSS is utilized with the guidance of an expertise.

In this study, total of 16 students were surveyed about the effectiveness of using mobile phones and tablet computers in their quality of learning of foreign language during their academic program. For doing so, thirty 5-point Likert scale questions were designed. In the 5-point Likert scale, point 1 is represented for "Strongly Disagree", point 2 is represented for "Disagree", point 3 is represented for "Neutral", point 4 is represented for "Agree", and point 5 is represented for "Strongly Agree".

The software used for analysis and reporting is Statistical Package for Social Sciences (SPSS) version 24.

The questions along with the means and medians of answers have been shown in the following table.

Table 4 1: The participants' point of view of using tablet computers in language learning.

Items	Mean	Median
Q1. I find the tablet computer cumbersome to use.	3.67	4.00
Q2. Learning to use the tablet computer is easy for me.	4.06	4.00
Q3. Interacting with the tablet computer is often frustrating.	2.67	3.00
Q4. I find it easy to get the tablet computer to do what I want it to do.	4.06	4.00
Q5. The tablet computer is rigid and inflexible to interact with.	3.00	3.00
Q6. It is easy for me to remember how to perform tasks when using the tablet computer.	4.06	4.00
Q7. Interacting with the tablet computer requires a lot of mental effort.	2.75	3.00
Q8. My interaction with the tablet computer is clear and understandable.	4.00	4.00
Q9. I find it takes a lot of effort to become skillful at using the tablet computer.	3.19	3.50
Q10. Overall, I find the tablet computer easy to use.	3.88	4.00
Q11. Using the tablet computer helps me a lot in foreign language learning.	4.19	4.00
Q12. Using the tablet computer gives me greater control over my learning of the foreign language.	3.88	4.00
Q13. The tablet computer enables me to accomplish learning tasks more quickly.	3.81	4.00
Q14. The tablet computer supports critical aspects of my study.	3.69	4.00
Q15. Using the tablet computer increases my learning outcomes.	3.88	4.00
Q16. Using the tablet computer improves my foreign language performance.	3.81	4.00
Q17. Using the tablet computer allows me to accomplish more learning tasks than would otherwise be possible.	3.50	4.00
Q18. Using the tablet computer enhances my effectiveness on study.	3.88	4.00
Q19. Using the tablet computer makes it easier to study.	3.88	4.00
Q20. Overall, I find the tablet computer useful in my study.	3.94	4.00
Q21. I find it interesting to use the tablet computer for foreign language learning.	3.94	4.00
Q22. I find it interesting to participate in the project.	3.69	4.00
Q23. I find it interesting to carry out tasks on the tablet computer.	3.81	4.00
Q24. I am willing to continue using tablet computers for foreign language learning.	4.06	4.00
Q25. I am willing to participate in any follow-up research on tablet-assisted language learning.	3.88	4.00
Q26. I am willing to carry out more tasks on tablet computers.	3.56	4.00
Q27. I am happy to have learned more about how to use tablet computer for foreign language learning.	4.06	4.00
Q28. I am willing to learn more about how to better utilize tablet computers to learn a foreign language more effectively.	3.81	4.00
Q29. I am satisfied with the functions offered by the tablet computer.	3.63	4.00
Q30. Overall, I am satisfied with using tablet computers for learning a foreign language.	3.81	4.00

4.2 Comparing Mean and Median

According to the table (4.1), the value of mean and median in all questions are close together and even in some questions they are exactly same. This fact illustrates that the data has been distributed normally.

As it can be observed in the table, all means and medians are above 3 except means of questions 3 and 7 showing the tendency to "agreement". Among all, the answer to question 11 has the highest mean value showing the tendency to "strongly agreement". Answers of question 11 (Using the tablet computer helps me a lot in foreign language learning) reflect the usefulness of using table in learning of a foreign language.

In order to realize which items are significant, one-sample t-test has been applied in this research and the results of this test are presented on the next page. According to the p-value in the t-test table, it reveals that all the items except questions 3, 5, 7, 9, 13 and 26 are significant because their p-value are higher than 0.05.

Based on the mean values it is seen that in general students were not agree that using of table either need a lot of mental effort or is frustrating, although based on the related standard deviations students have different opinion about these considerations.

Based on the computed standard deviations students have the most degree of dissension about question 20 (Overall, I find the tablet computer useful in my study) with the standard deviation 1.389.

Table 4 2: The table of one-sample t-test.

One-sample t-test

Test Value = 3

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference Lower	Upper
Q.1	3.162	14	.007	.667	.21	1.12
Q.2	4.576	15	.000	1.063	.57	1.56
Q.3	-1.160	14	.265	-.333	-.95	.28
Q.4	4.000	15	.001	1.063	.50	1.63
Q.5	.000	15	1.000	.000	-.55	.55
Q.6	5.506	15	.000	1.063	.65	1.47
Q.7	-1.074	15	.300	-.250	-.75	.25
Q.8	4.140	15	.001	1.000	.49	1.51
Q.9	.716	15	.485	.188	-.37	.75
Q.10	3.217	15	.006	.875	.30	1.45
Q.11	4.842	15	.000	1.188	.66	1.71
Q.12	3.217	15	.006	.875	.30	1.45
Q.13	2.931	15	.010	.813	.22	1.40
Q.14	3.467	15	.003	.688	.26	1.11
Q.15	2.671	15	.017	.875	.18	1.57
Q.16	2.546	15	.022	.813	.13	1.49
Q.17	1.581	15	.135	.500	-.17	1.17
Q.18	3.050	15	.008	.875	.26	1.49
Q.19	3.217	15	.006	.875	.30	1.45
Q.20	2.700	15	.016	.938	.20	1.68
Q.21	2.798	15	.014	.938	.22	1.65
Q.22	2.551	15	.022	.688	.11	1.26
Q.23	3.105	15	.007	.813	.25	1.37
Q.24	6.249	15	.000	1.063	.70	1.42
Q.25	3.656	15	.002	.875	.36	1.39
Q.26	2.058	15	.057	.563	-.02	1.15
Q.27	3.782	15	.002	1.063	.46	1.66
Q.28	2.546	15	.022	.813	.13	1.49
Q.29	3.101	15	.007	.625	.20	1.05
Q.30	3.105	15	.007	.813	.25	1.37

4.3 Frequency Tables

In the following, frequency analysis is separately done for each question.

Table 4.3: The difficulty of using tablet computers for students.

	Freq.	%
Disagree	1	6.3
Neutral	5	31.3
Agree	7	43.8
Strongly agree	2	12.5
Total	**15**	**93.8**
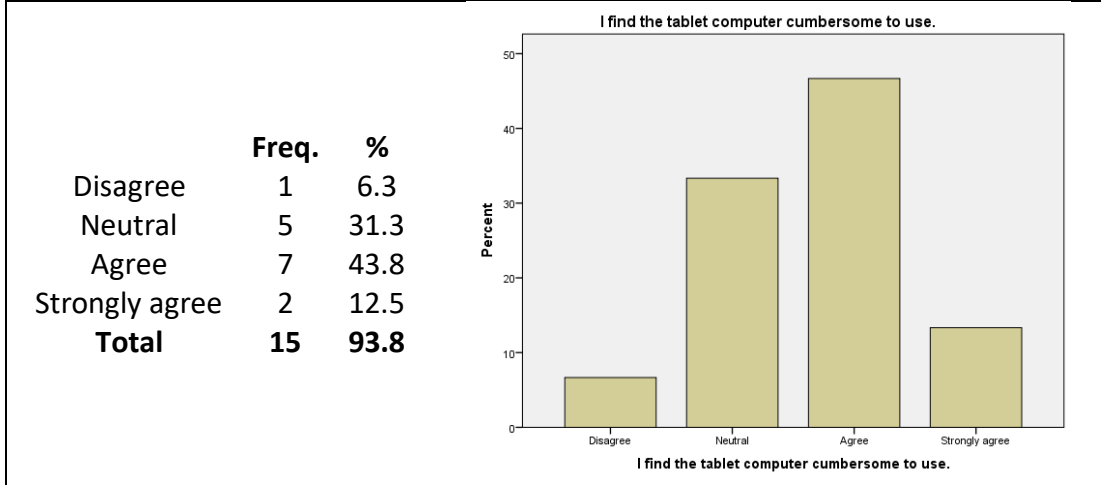
The above table shows that majority of students where agree to Q1 with almost total of 54% general agreement. Only 6.3% of students were disagreeing. In another words, majority of them found that using of tablet computers is cumbersome.

Table 4.4: The convenience of using tablet computers for participants.

	Freq.	%
Strongly disagree	1	6.3
Agree	11	68.8
Strongly agree	4	25
Total	**16**	**100**
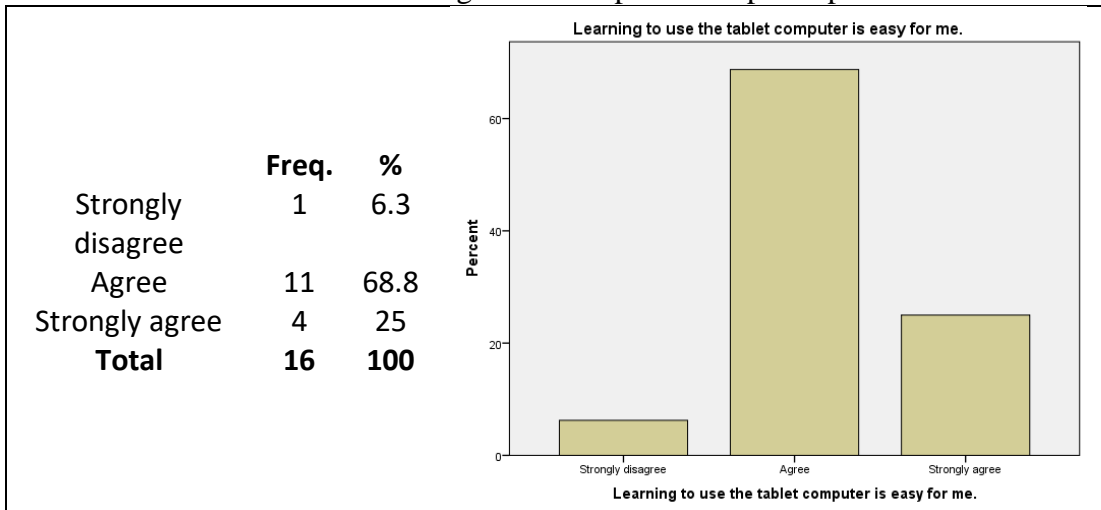
Similar to Q1, majority of students were agree to Q2 with almost total of 94% general agreement. Again only 6.3% of students were disagreeing. This means students were comfortable in learning through using tablet computers, 4 students were disagreed though.

Table 4.5: The frustration of using tablet computers.

	Freq.	%
Strongly disagree	2	12.5
Disagree	5	31.3
Neutral	5	31.3
Agree	2	12.5
Strongly agree	1	6.3
Total	**15**	**93.8**
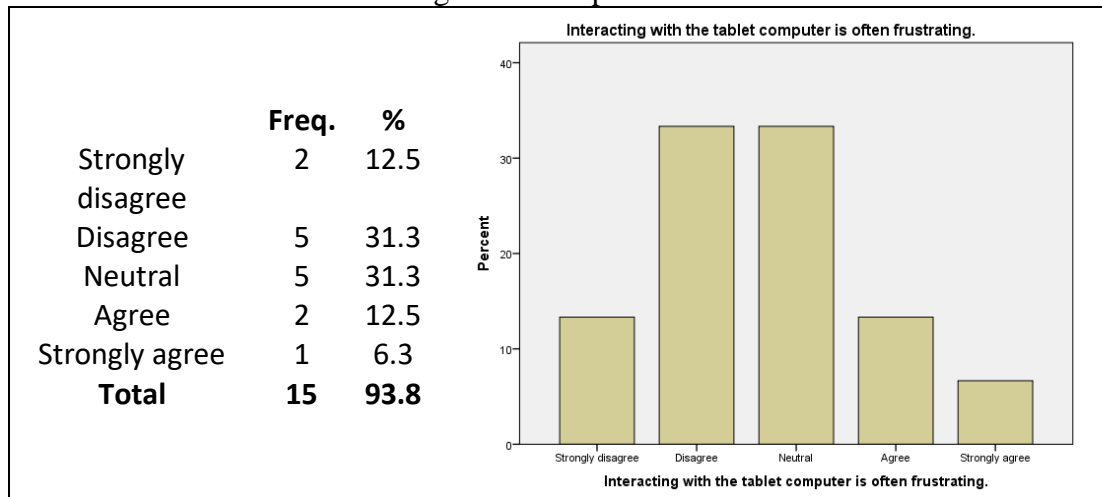
For Q3, the general agreement was almost 19% against the general disagreement 44% and 31.3% were neutral. It shows that students had different and varying opinions w.r.t. being frustrating of interacting with the tablet computers in learning.

Table 4.6: The convenience of using tablet computers for doing different things.

	Freq.	%
Strongly disagree	1	6.3
Neutral	2	12.5
Agree	7	43.8
Strongly agree	6	37.5
Total	**16**	**100**
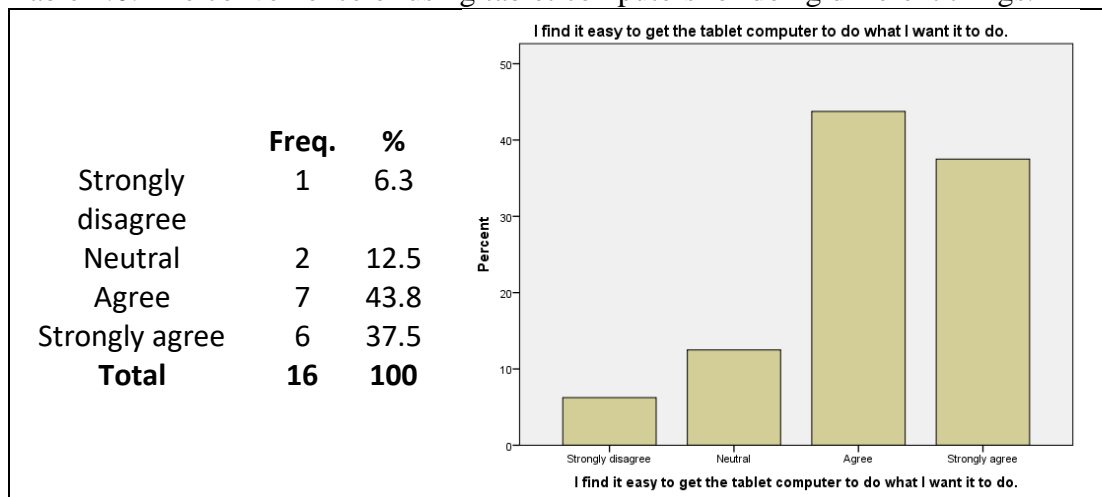
For Q4, the opinions were considerable positive with the almost total of 81% of general agreement. In other words, majority of students could easily interact with table computers to accomplish their needs.

Table 4.7: The rigidness of interacting with tablet computers.

	Freq.	%
Disagree	6	37.5
Neutral	6	37.5
Agree	2	12.5
Strongly agree	2	12.5
Total	**16**	**100**
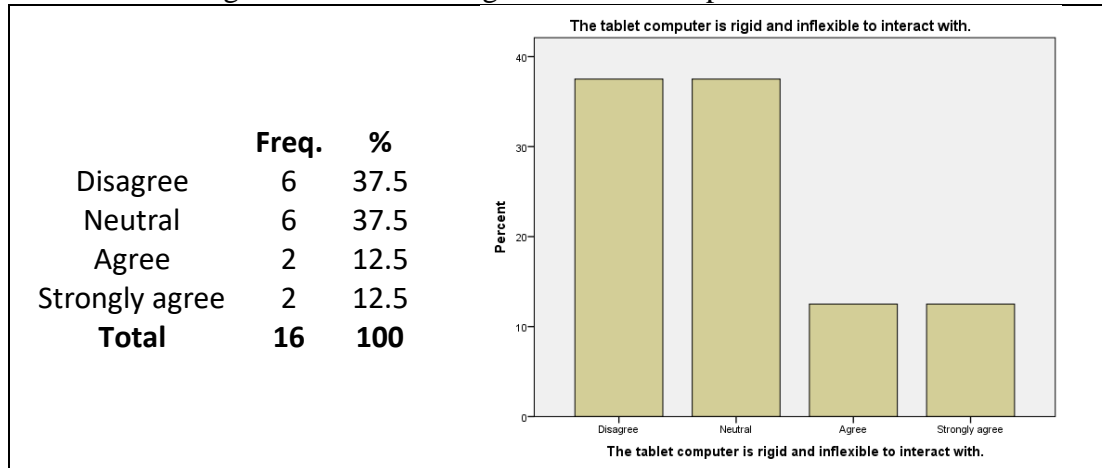
For Q5, almost two-third of students were either disagree or neutral and the rest were generally agree. That means, students did not have similar opinions regrading to interacting experience with tablet computers. Some of them found tablet computers rigid and inflexible, some of them did not conclude that and considerable number of them had neutral opinion regarding this issue.

Table 4.8: The easiness of remembering how to perform tasks with tablet computers.

	Freq.	%
Disagree	1	6.3
Neutral	1	6.3
Agree	10	62.5
Strongly agree	4	25
Total	**16**	**100**
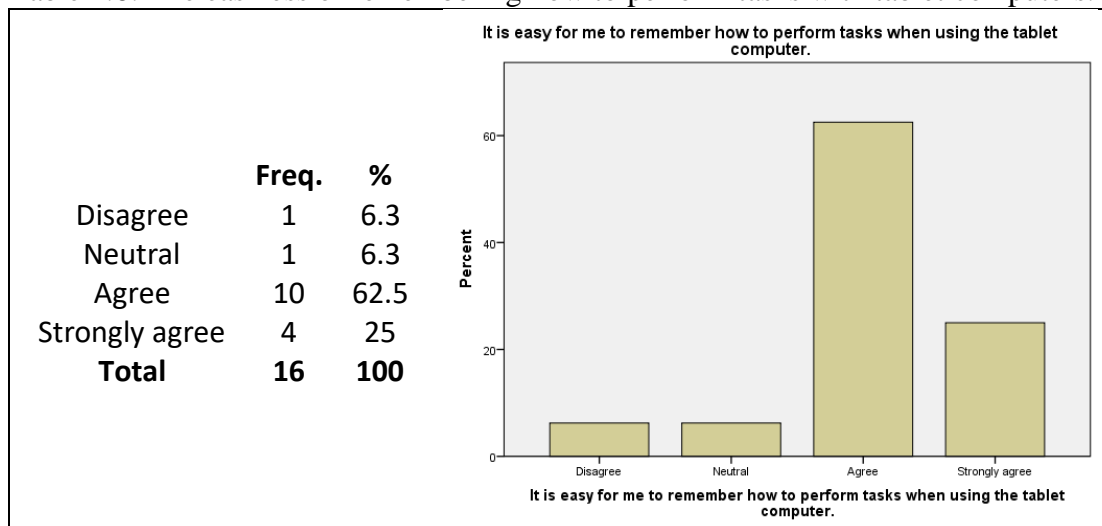
Almost 87% of student s were agreeing with Q6, and only one student was disagreeing. That means majority of students could easily remember what they should do with tablet computers to accomplish tasks.

Table 4. 9: The mental requirement of interacting with tablet computers.

	Freq.	%
Strongly disagree	1	6.3
Disagree	5	31.3
Neutral	8	50
Agree	1	6.3
Strongly agree	1	6.3
Total	**16**	**100**
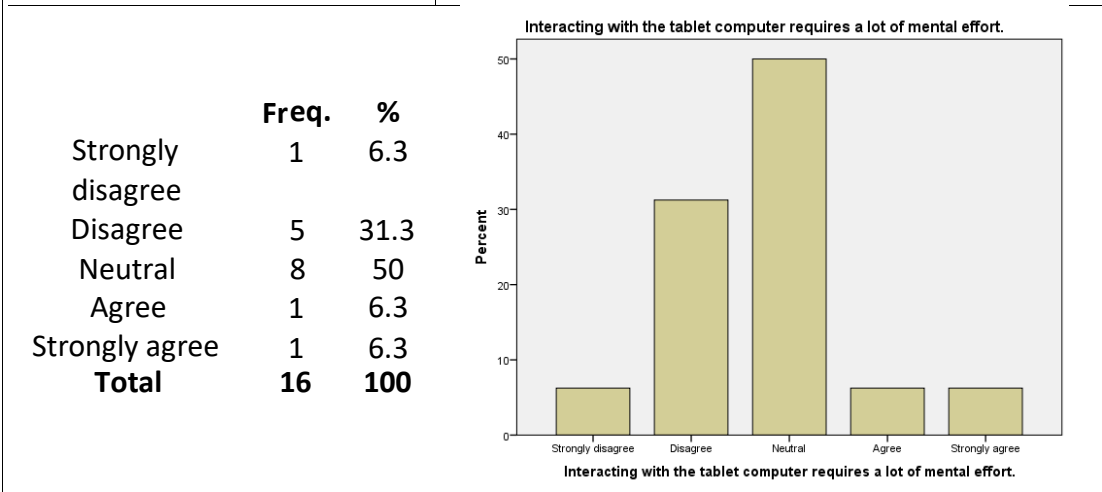
Majority of students were either disagreeing or neutral with Q7 and only almost total of 14% were agreeing. Therefore, in general, students did not believe that working with tablet computers needs a lot of mental effort.

Table 4.10: The understandability of interactions with tablet computers.

	Freq.	%
Strongly disagree	1	6.3
Neutral	1	6.3
Agree	10	62.5
Strongly agree	4	25
Total	**16**	**100**
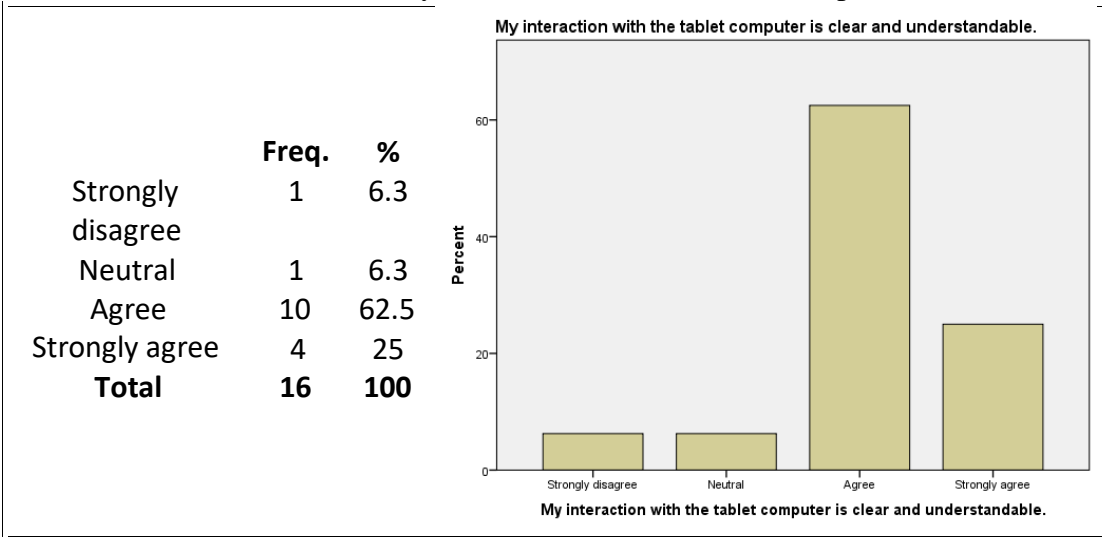
Majority of students (above 85%) were agreeing with Q8 while less than 7% were disagreeing with it. This shows that, in general, students clearly knew how to interact with tablet computers.

Table 4.11: The participants' opinion about the required skill for using tablet computers.

	Freq.	%
Disagree	6	37.5
Neutral	2	12.5
Agree	7	43.8
Strongly agree	1	6.3
Total	**16**	**100**

I find it takes a lot of effort to become skillful at using the tablet computer.
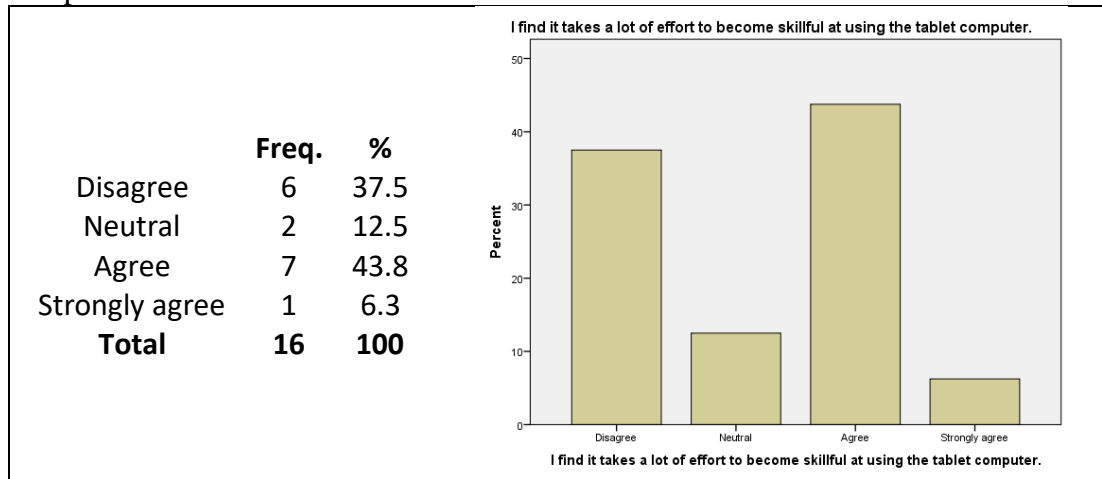
Less than 50% of students were agreeing with Q9 while 37.5% were disagreeing with it. It shows that students had diverged opinion about the effort needed to become skillful at using tablet computers. Some of them were agree and some of them were disagree.

Table 4.12: The convenience of utilizing tablet computers.

	Freq.	%
Strongly disagree	1	6.3
Disagree	1	6.3
Neutral	1	6.3
Agree	9	56.3
Strongly agree	4	25
Total	**16**	**100**

Overall, I find the tablet computer easy to use.
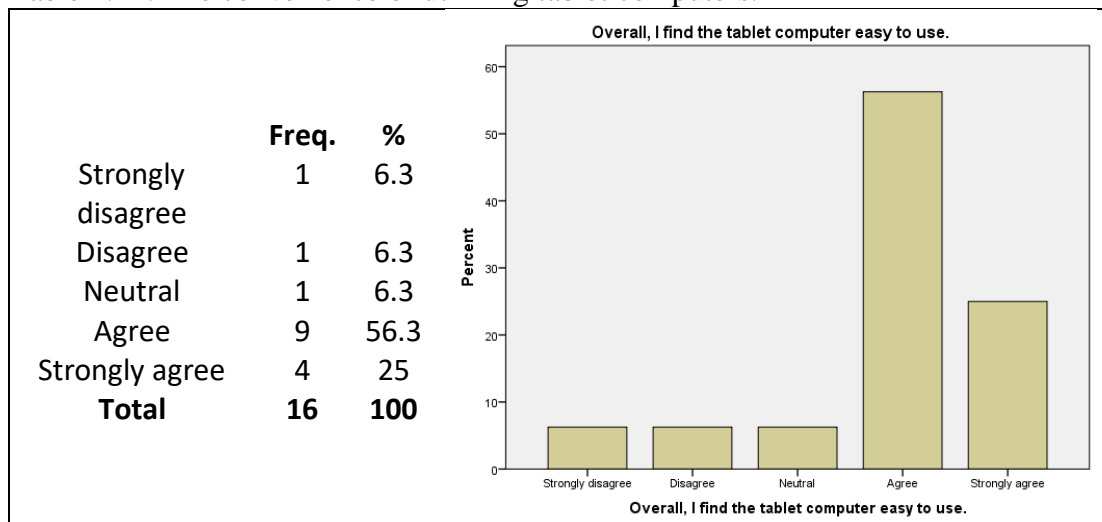
More than 80% of students were agreeing with Q10 and almost 13% were disagreeing with it. We can conclude that in general, majority of students found tablet computers easy to use.

Table 4.13: The efficiency of tablet computers in learning a new language.

	Freq.	%
Strongly disagree	1	6.3
Agree	9	56.3
Strongly agree	6	37.5
Total	**16**	**100**
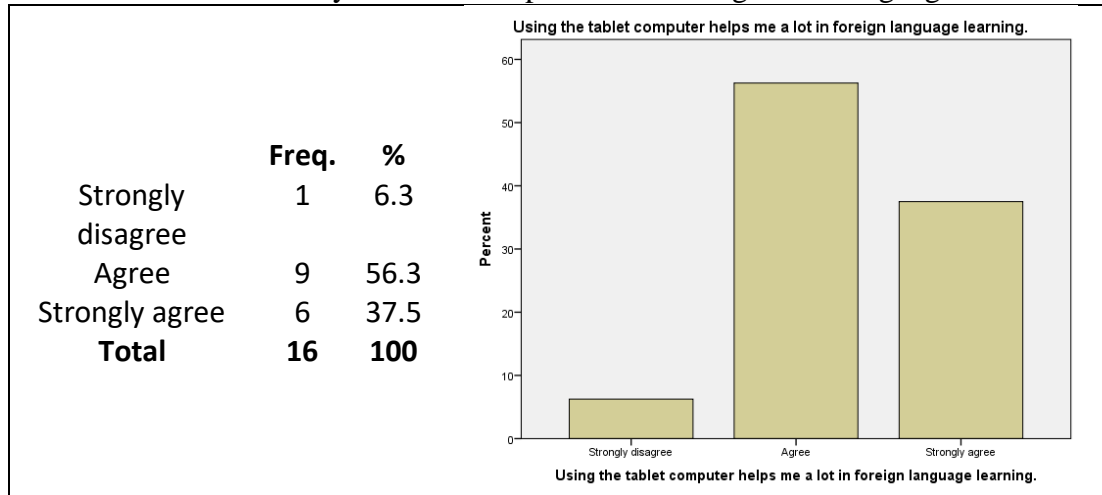
Above 94% of students were agreeing with Q11 and only 6.3% of them were disagreeing. In other words there was no doubt among students that tablet computers helped them a lot in foreign language learning.

Table 4.14: The participants' control over learning a foreign language with tablet computers.

	Freq.	%
Strongly disagree	1	6.3
Neutral	4	25
Agree	6	37.5
Strongly agree	5	31.3
Total	**16**	**100**
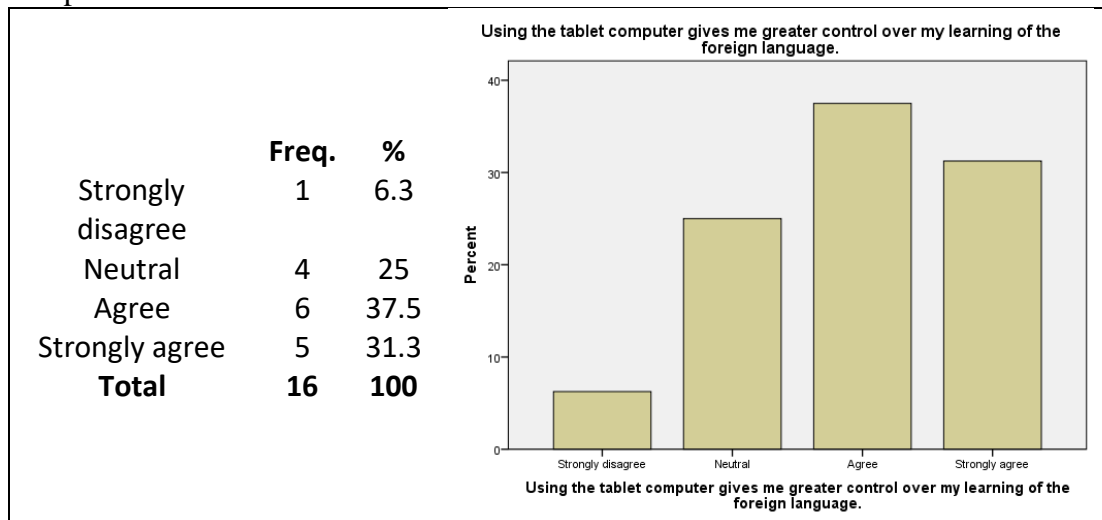
Almost 69% of students were agreeing with Q12 and only 6.3% were disagreeing. That means larger number of students had greater control over their learning of the foreign language while using tablet computers.

Table 4.15: The speed of learning tasks in the participants' view by using tablet computers.

	Freq.	%
Strongly disagree	1	6.3
Disagree	1	6.3
Neutral	2	12.5
Agree	8	50
Strongly agree	4	25
Total	**16**	**100**
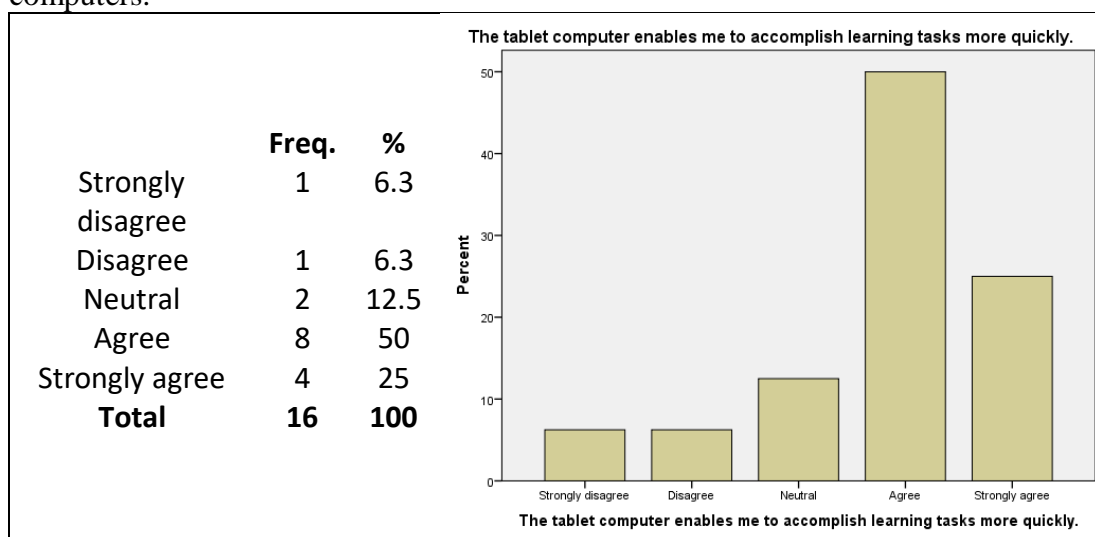
Seventy-five per cent of students were agreeing with Q13 while almost 13% were disagreeing. It shows that strong majority of students were enabled to accomplish learning tasks more quickly by using tablet computers.

Table 4.16: The support of critical aspects of the participants' study.

	Freq.	%
Disagree	1	6.3
Neutral	5	31.3
Agree	8	50
Strongly agree	2	12.5
Total	**16**	**100**
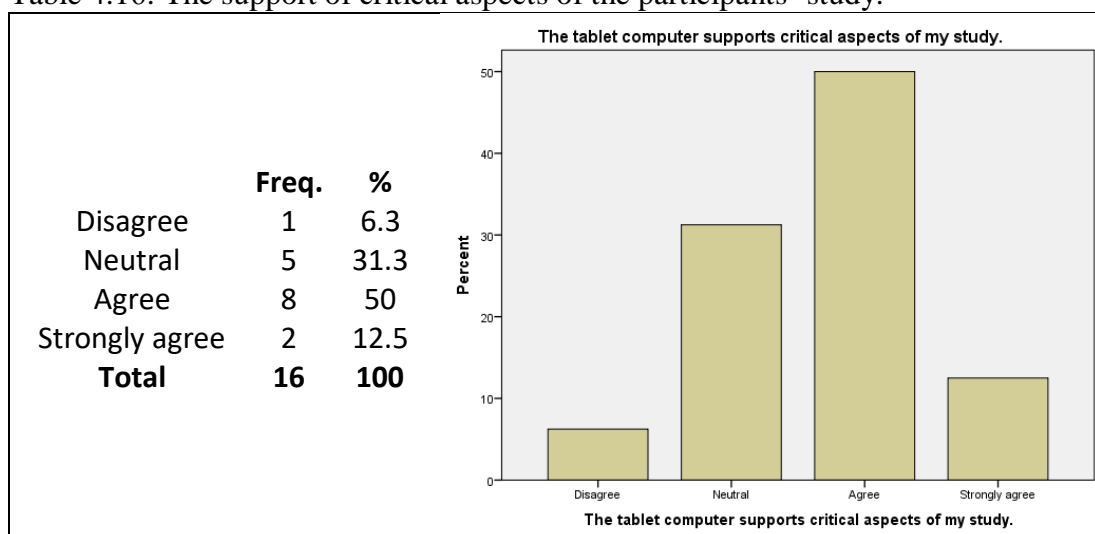
Above 62% of students were agreeing with Q14 while more than 31% were neutral and the rest were disagreeing. In another word, more than half of the students believed tablet computers support critical aspects of their study.

Table 4.17: The learning outcome of participants by utilizing tablet computers.

	Freq.	%
Strongly disagree	2	12.5
Neutral	2	12.5
Agree	6	37.5
Strongly agree	6	37.5
Total	**16**	**100**

Using the tablet computer increases my learning outcomes.
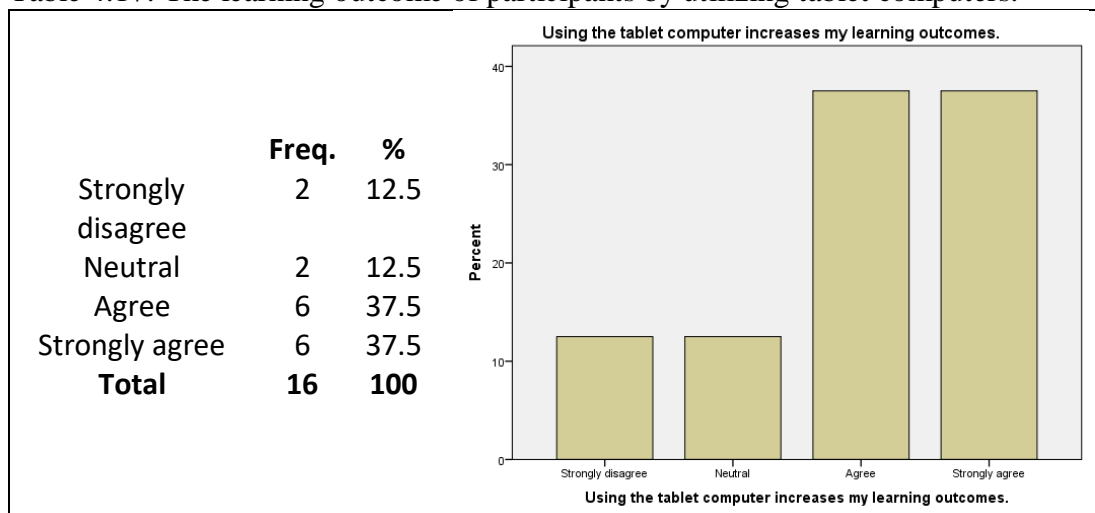
Seventy-five per cent of students were agreeing with Q15 whereas almost 12% were disagreeing. That means strong majority of students experienced increase in their learning outcomes via utilizing tablet computers.

Table 4.18: The participants' opinion about the improvement of their language performance.

	Freq.	%
Strongly disagree	2	12.5
Neutral	2	12.5
Agree	7	43.8
Strongly agree	5	31.3
Total	**16**	**100**

Using the tablet computer improves my foreign language performance.
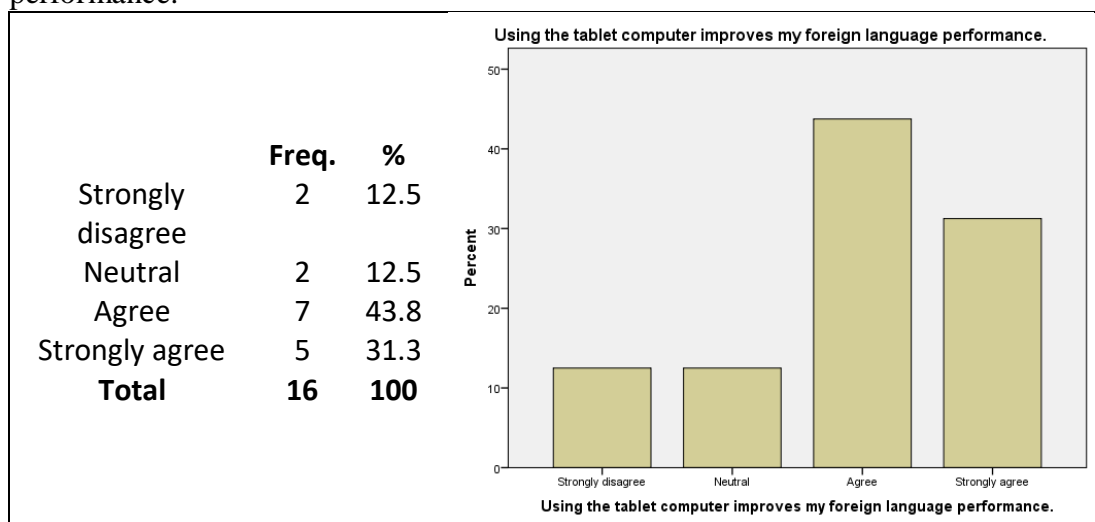
Almost 75% of students were agreeing with Q16 whereas 12.5% were disagreeing, and 12.5% were neutral. The students generally agreed that their performance in learning a foreign language was improved by use of tablet computers.

Table 4.19: The participants' view of how motivated they become by doing task with tablet computers.

	Freq.	%
Strongly disagree	2	12.5
Disagree	1	6.3
Neutral	3	18.8
Agree	7	43.8
Strongly agree	3	18.8
Total	**16**	**100**
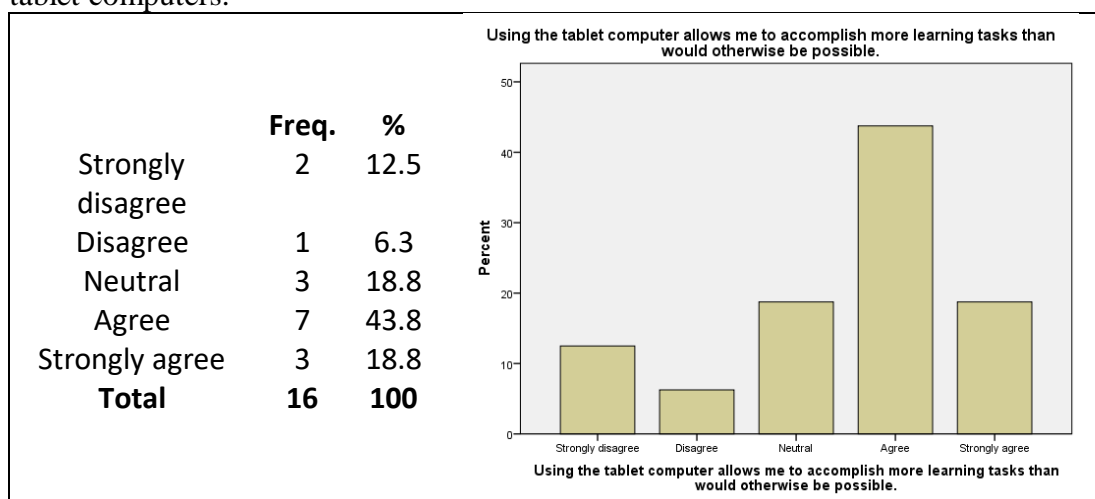
More than 62% of students were agreeing with Q17 while 12.5% were disagreeing. It shows that more than half of the students realized that using tablet computers allowed them to complete and do more learning tasks in compare with the traditional ways of doing tasks.

Table 4.20: The effectiveness of studding in the participants' view via table computers.

	Freq.	%
Strongly disagree	1	6.3
Disagree	1	6.3
Neutral	2	12.5
Agree	7	43.8
Strongly agree	5	31.3
Total	**16**	**100**
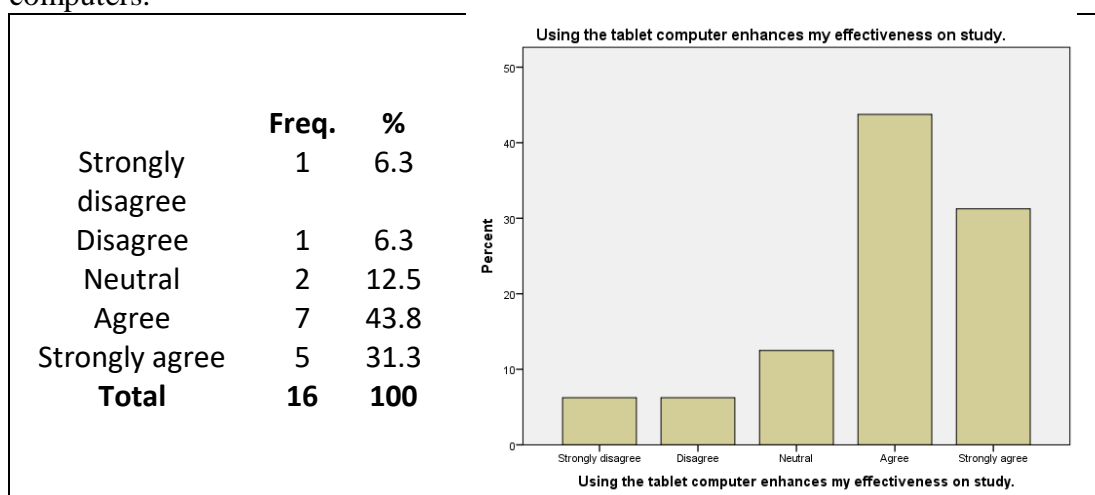
More than 75% of students were agreeing with Q18 and just 6.3% were disagreeing with it. Therefore, we can conclude that larger number of students experienced enhancement in effectiveness of their studies while utilizing tablet computers.

Table 4.21: The participants' opinion about whether tablet computers make it easier to study or not.

	Freq.	%
Strongly disagree	1	6.3
Neutral	4	25
Agree	6	37.5
Strongly agree	5	31.3
Total	**16**	**100**
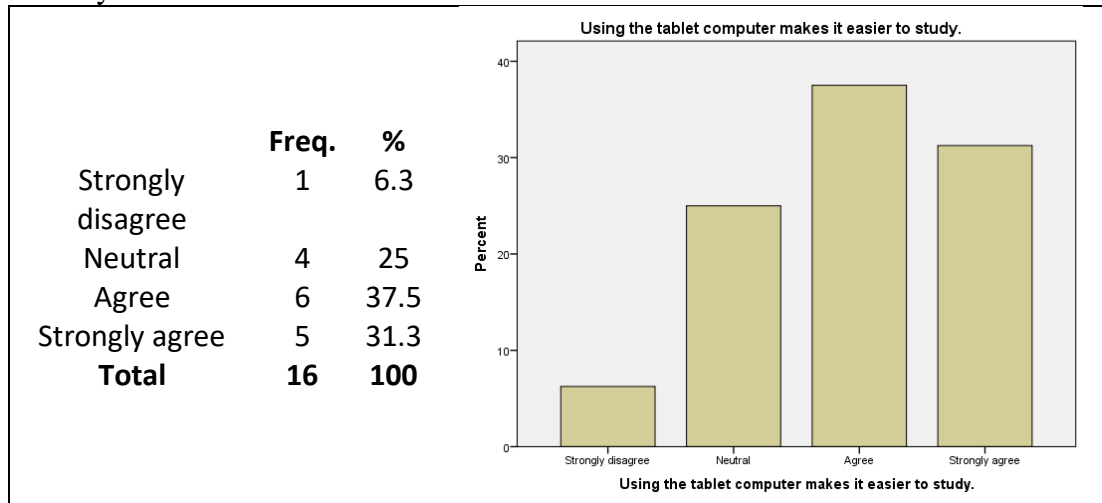
Just below 69% of students were agreeing with Q19 and just 6.3% were disagreeing while 25% were neutral. Generally, students found that using tablet computers makes it easier to study.

Table 4.22: The participants' opinion whether tablet computers are useful in study or not.

	Freq.	%
Strongly disagree	2	12.5
Disagree	1	6.3
Agree	6	37.5
Strongly agree	7	43.8
Total	**16**	**100**
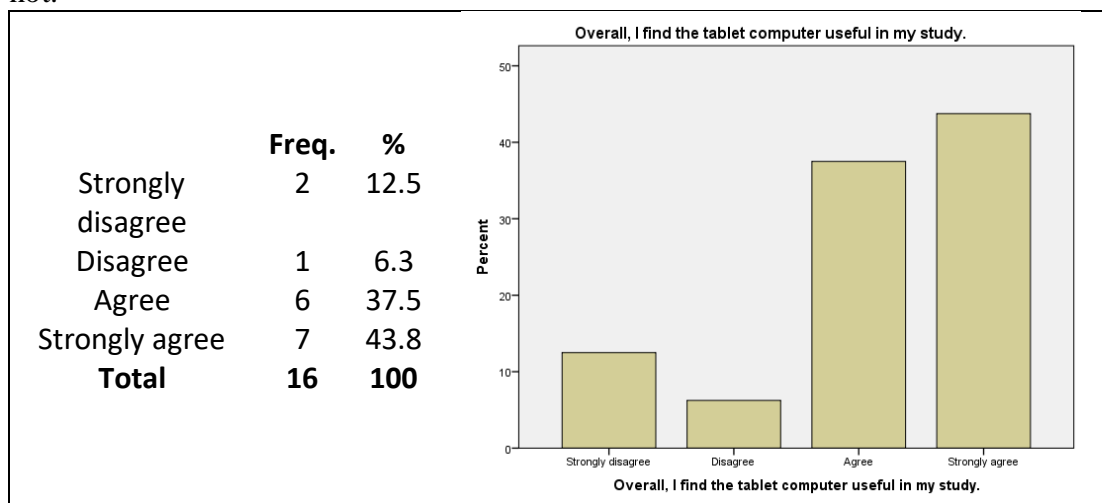
Just above 80% of students were agreeing with Q20. Almost 19% were disagreeing with this question. That means strong majority of students found the tablet computer as a useful device in their study.

Table 4.23: The participants' interest in using tablet computers in learning a new language.

	Freq.	%
Strongly disagree	2	12.5
Neutral	2	12.5
Agree	5	31.3
Strongly agree	7	43.8
Total	**16**	**100**

More than 75% of students were agreeing with Q21 whereas only 12.5% were disagreeing. We can say strong majority of students found it interesting to use tablet computer for learning of a foreign language.

Table 4.24: The students' interest in participating in the project.

	Freq.	%
Strongly disagree	1	6.3
Disagree	1	6.3
Neutral	3	18.8
Agree	8	50
Strongly agree	3	18.8
Total	**16**	**100**

39
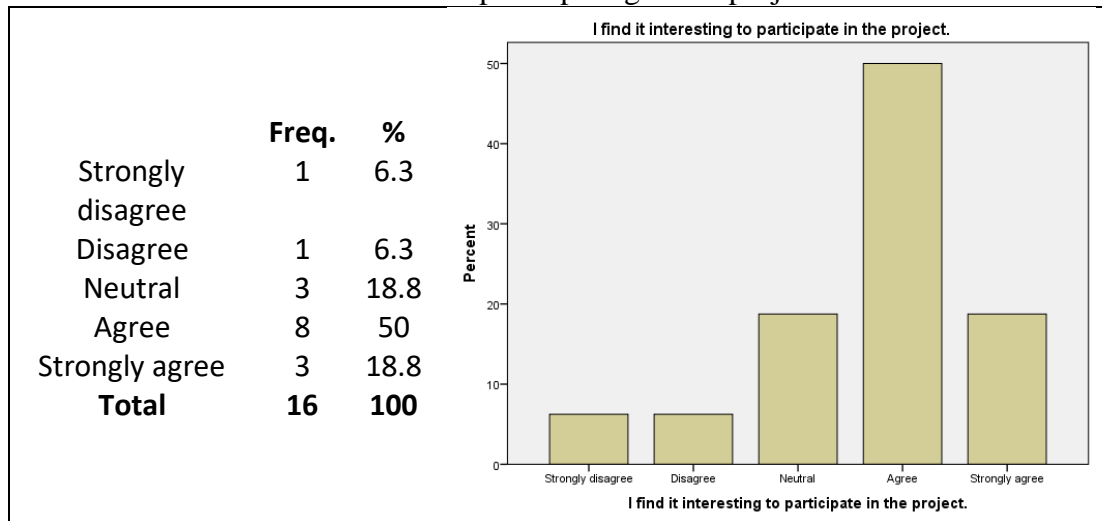
More than 68% of students were agreeing with Q22 while only 6.3% were disagreeing. Therefore, we can conclude that the participation in this project was generally interesting for the students.

Table 4.25: The students' interest in carrying out tasks via tablet computers.

	Freq.	%
Strongly disagree	1	6.3
Neutral	4	25
Agree	7	43.8
Strongly agree	4	25
Total	**16**	**100**
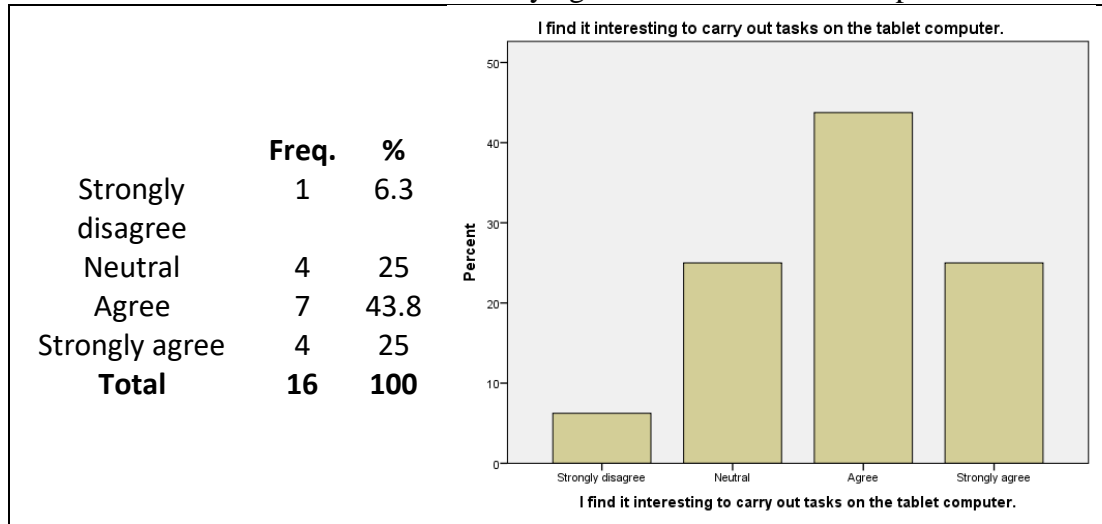
Majority of students (just less than 69%) were agreeing with Q23 and just 6.3% of them were disagreeing. That means students were generally found that carrying out tasks on table computers is interesting.

Table 4.26: The enthusiasm of participants in using tablet computers for learning a foreign language.

	Freq.	%
Neutral	3	18.8
Agree	9	56.3
Strongly agree	4	25
Total	**16**	**100**

40
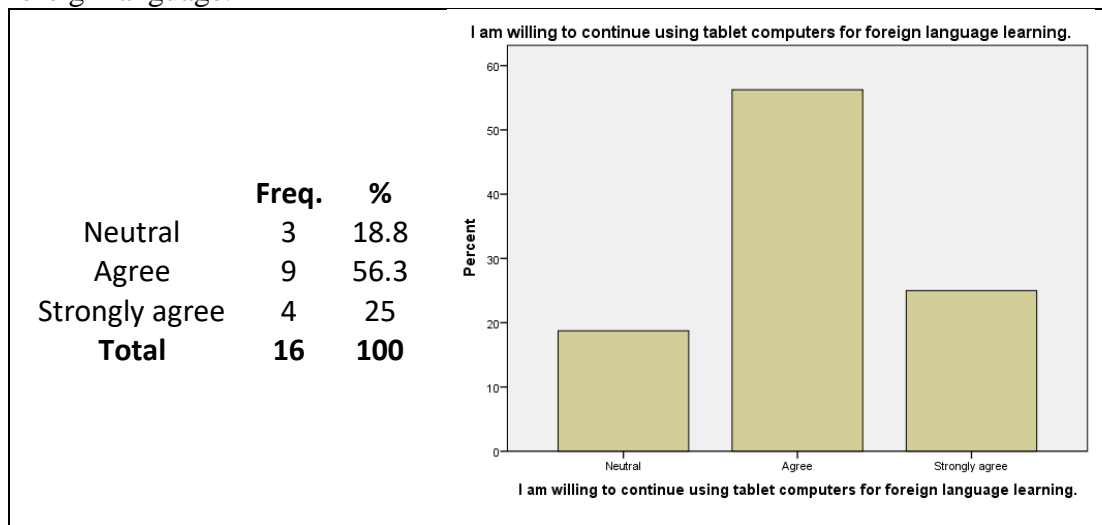
Almost 81% of students were agreeing with Q24. Nobody was disagreeing. It shows that strong majority of students were keen on continuing using tablet computers for foreign language learning.

Table 4.27: The enthusiasm of students in participating in researches on tablet computers.

	Freq.	%
Disagree	1	6.3
Neutral	5	31.3
Agree	5	31.3
Strongly agree	5	31.3
Total	**16**	**100**
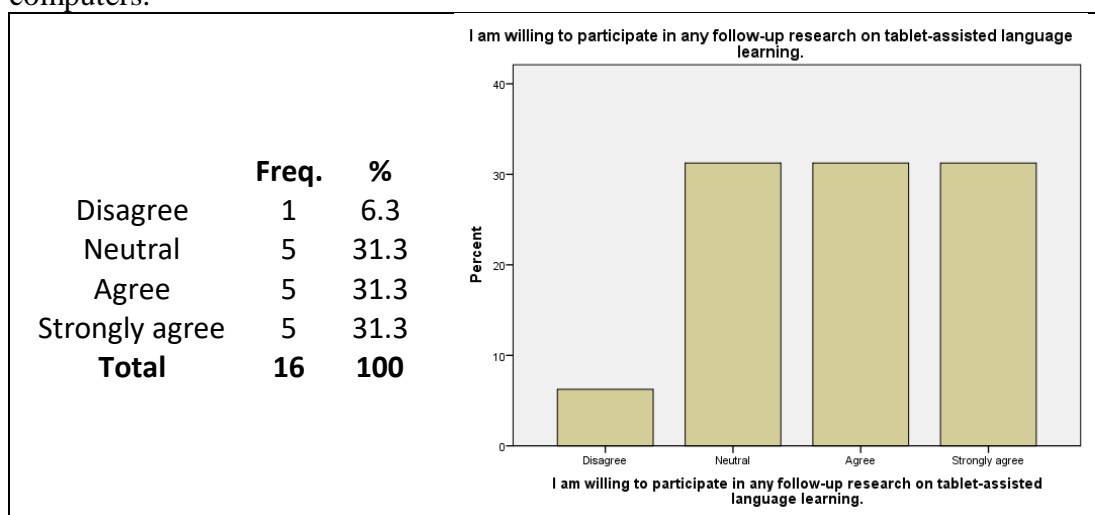
Two-third of students were agree with Q25 and one-third were neutral. Hence, majority of them were willing to participate in any follow-up research on tablet assisted language learning.

Table 4.28: The willing of carrying out mores tasks in tablet computers from behalf of participants.

	Freq.	%
Strongly disagree	1	6.3
Disagree	1	6.3
Neutral	5	31.3
Agree	6	37.5
Strongly agree	3	18.8
Total	**16**	**100**
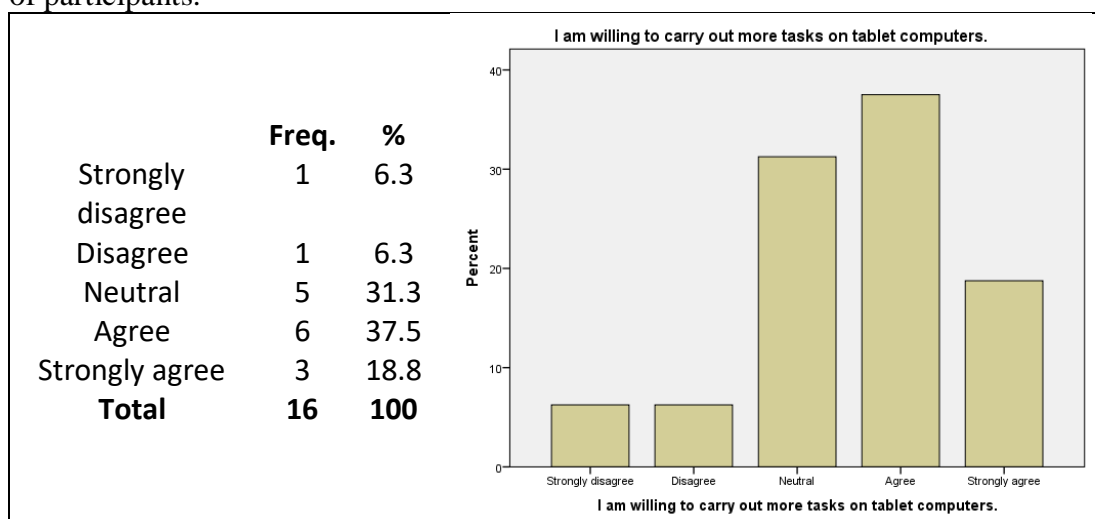
More than 56% of students were agreeing and almost 31% were neutral with Q26. Therefore just above half of the students were willing to carry out more tasks on tablet computers.

Table 4.29: The satisfaction of participants with learning how to use tablet computers to learn a foreign language.

	Freq.	%
Strongly disagree	1	6.3
Neutral	3	18.8
Agree	5	31.3
Strongly agree	7	43.8
Total	**16**	**100**
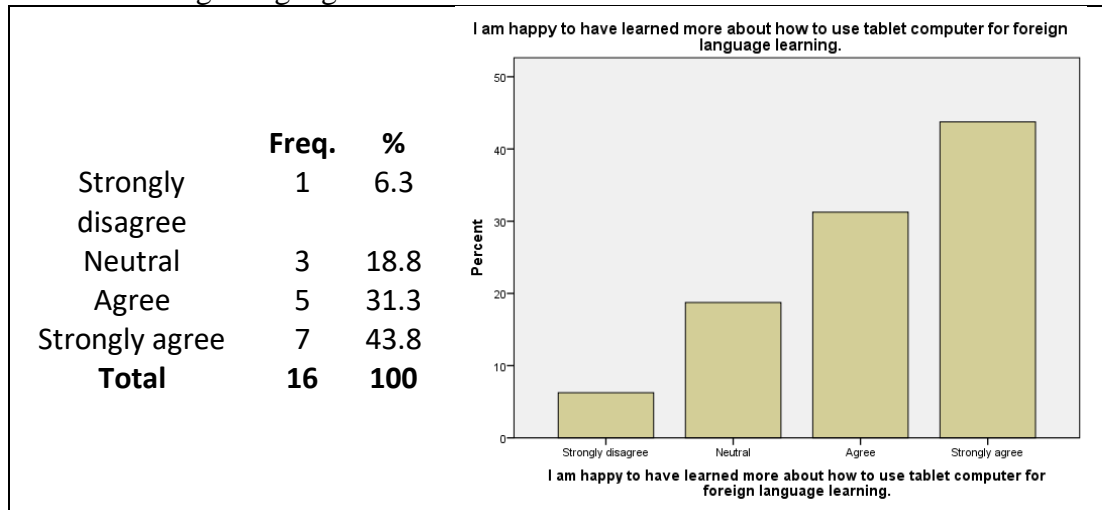
Almost 75% of students were agreeing with Q27. However, almost 19% were neutral. We can conclude in general that students were happy about experiencing the way they could utilize tablet computers for foreign language learning.

Table 4.30: The participants willing to learn more about how to use tablet computers more efficient for learning a new language.

	Freq.	%
Strongly disagree	1	6.3
Disagree	2	12.5
Neutral	2	12.5
Agree	5	31.3
Strongly agree	6	37.5
Total	**16**	**100**
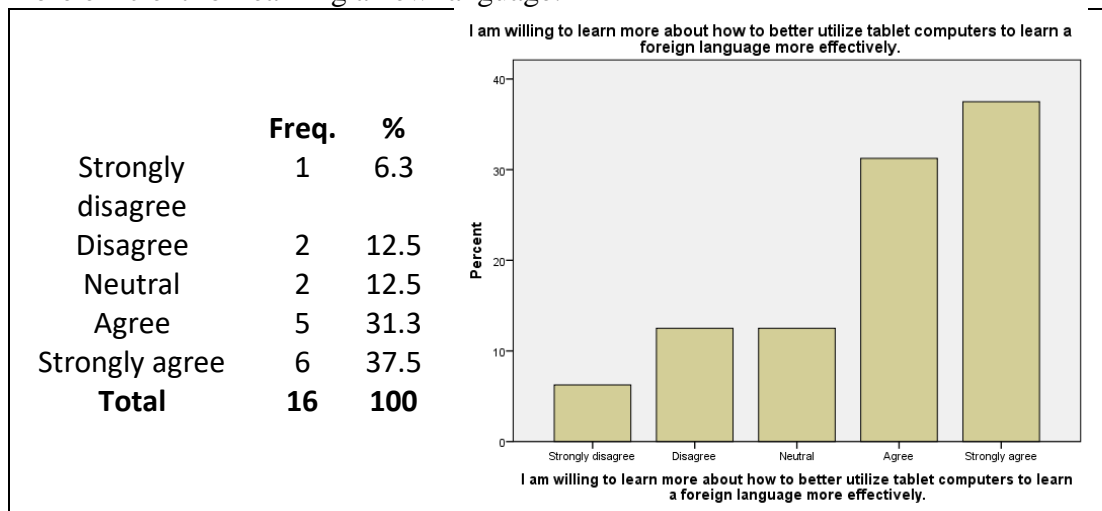
Just below 69% of students were agreeing to Q28 but almost 19% were disagreeing. Therefore, majority of students have been motivated to learn how to better utilize tablet computers to learn a foreign language more effectively.

Table 4.31: The participants' satisfaction with functions offered by tablet computers.

	Freq.	%
Disagree	1	6.3
Neutral	6	37.5
Agree	7	43.8
Strongly agree	2	12.5
Total	**16**	**100**
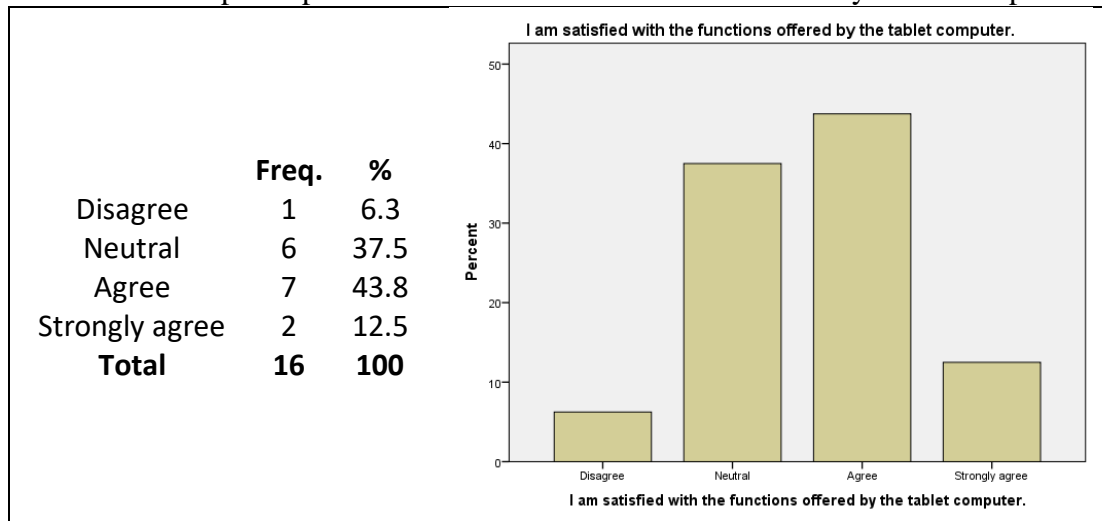
Just above 56% of students were agree with Q29 whereas 37.5% were neutral. It shows that just above half of the students were satisfied with the functionalities offered by tablet computers.

Table 4.32: The participants' overall satisfaction with utilizing tablet computers for learning a foreign language.

	Freq.	%
Strongly disagree	1	6.3
Neutral	4	25
Agree	7	43.8
Strongly agree	4	25
Total	**16**	**100**
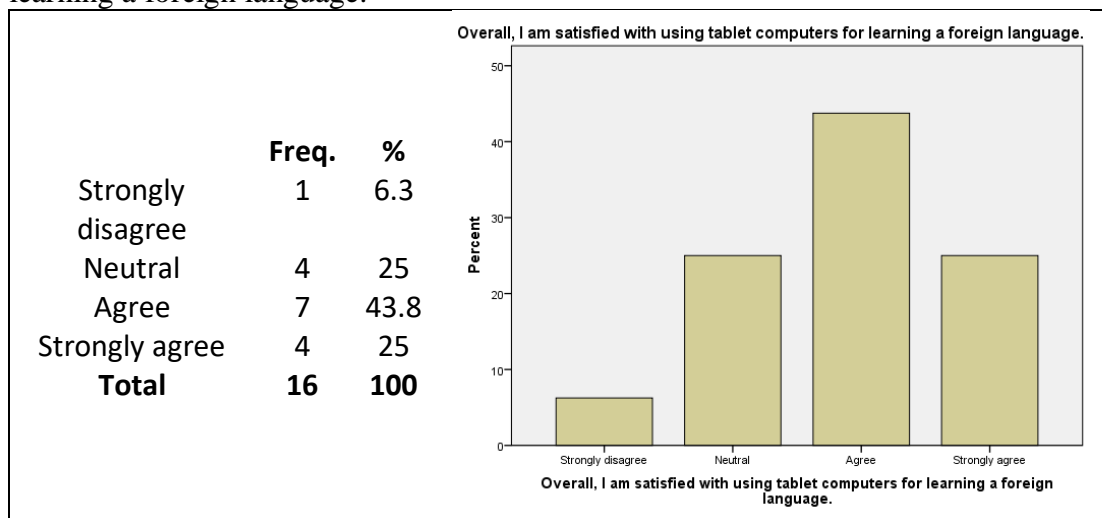
Almost 69% of students were agreeing with Q30. Almost 6% were disagreeing and 25% were neutral. In another words, majority of students were satisfied with using tablet computers for learning a foreign language.

Chapter 5

CONCLUSION

In order to develop a successful German language learning application, it is compulsory to create it according to the results gathered from this research and a proper language learning application can be substantially beneficial regarding the students opinions. Owing to these, it can be concluded as follows.

5.1 Conclusion

During this research, the researcher could eventually find the answers to all the research questions and the main goal mentioned in introduction, by studying various papers, gathering data from students and writing the program to implement the App. According to research question 1 (see page 5), the research outcomes explain that the majority of the students believe using smart devices are convenient and they usually find it appealing. The research results also illustrate that the greater number of learners remember how to perform tasks on the smart devices and they have also mentioned that their interactions with these devices are clear and comprehensible. Although the lack of interest and the confusion in utilizing the smart devices from behalf of learners used to be one of the main problems in D-Learning and M-Learning as discussed in the literature review, the young university students has shown enthusiasm and flexibility in using technology for learning which solves many problems in this field. Moreover, most of the learners who have previously tried learning a new language with mobile phones and tablets, believe that it was effective and helpful and they are willing to use these devices continuously.

On the contrary, as it was discussed in the literature review, one of the most substantial drawbacks and problems of the mobile learning as stated by Ustunlouglu, E. (2009), is the difficulty in engaging the students. Ustunlouglu believes that students does not sufficiently autonomous without the presence of a teacher. Therefore, it is necessary to create enough interest and motivation in people to use mobile phones or tablets for educational purposes.

According to research question 2 (see page 5), the results of the research illustrate that most of the educational Apps suffer from the lack of proper learning strategies and quality. And in the literature review, (Chu, Hwang, Tsai. 2009) also cited that one of the main existing problems in learning a foreign language through smart devices, is the lack of proper learning strategies and facilities that can conduct students to learn a new language via mobile Apps. Therefore, it is highly recommended to have a skilled instructor in charge of representing and controlling the course materials.

For question 3 (see page 5), according to the literature review McCarthy (1990) and Wright (2004) expressed their own opinions about the significance and effectiveness of using pictures and sound in learning a new language. Moreover, creating a task based environment causes more repetition for learners and it will accelerate the process of learning. And also to motivate students to practice the new language more, it is beneficial to create an opportunity for them to communicate with other learners or experts.

According to research question 4 (see page 5), there are some approaches which are novel and can be applied on smart devices as well such as: 1) Asking students to take picture from every new word they learn and upload it and share it with other learners

in order to help them in more efficient memorising, 2) Embedding some games in the learning App which will be done by learners through writing or speaking with the device in German, 3) Creating the possibility for learners and encouraging them to communicate not just with writing or uploading pictures, but also with uploading music with lyrics and videos.

The summery of the conclusions are presented below:

- Some of the most popular methods are: 1) Creating a task based learning environment, 2) Using pictures instead of explaining something for learners, 3) Applying vocal method for learners which is tremendously effective in vocabulary learning, 4) Encouraging students to communicate with each other.

- Some novel approaches that can be applied on smart devices: 1) Asking students to take picture from every new word they learn and upload it and share it with other learners in order to help them in more efficient memorising, 2) Embedding some games in the learning App which will be done by learners through writing or speaking with the device in German, 3) Creating the possibility for learners and encouraging them to communicate not just with writing or uploading pictures, but also with uploading music with lyrics and videos.

- One of the main existing problems in learning a foreign language through smart devices, is the lack of proper learning strategies and facilities that can conduct students to learn a new language via mobile Apps. The other problem is the lack of independency in students without the presence of a teacher.

- The majority of the learners believe that using smart devices are convenient and they usually find it appealing.

- The larger number of students mentioned that their interactions with these devices are clear and understandable.

- Most of the learners who have previously tried learning a new language with mobile phones and tablets, believe that it was effective and helpful and they are keen on to use these devices continuously.

- It is highly recommended to design a simple and user friendly environment for the App to reduce the complexity and increase the efficiency.

5.2 Researcher's Reflection

As it is discussed in the literature review, "M-Learning" is an effective learning approach so it represents courses materials to learners regardless the time and place. Nowadays as supported by other researchers such as (Keegan, 2002) and (Caudill, 2007) the M-Learning will definitely grow in future due to the advances in hardware and software technologies. Traxler (2005): "Any educational provision where the sole or dominant technologies are handheld or palmtop devices."

Through this thesis, the researcher figured out that the traditional teaching and learning method is under attack from many criticisms, particularly who supports the constructivist teaching approach which focuses on the students' activity and endeavour. These facts guided the researchers to apply the methods in application which gives opportunity to students to become an active learner by creating a student

centre environment which engage them in learning by doing different types of exercises.

On the other hand, this research has increased the researcher's programming skills in order to carry out a substantial project and implement the ideas and algorithms to create an App for Android devices. But the main question is, what makes a successful language learning App? The answer of this question according to the research and results is that, the App should have the ability to attract learners and users and encourage them to use the App and learn more. In order to that, the application requires to have an appealing and user friendly interface so it does not intimidate and make learners reluctant from learning a new skill. It is also essential to have various methods and types of exercises which students find them interesting so it helps them to study more efficient and increase their enthusiasm for more learning.

5.3 Future Work

- This research has only been applied to German language however; this App can support other languages as well in order to foster online teaching-learning by using the latest technologies and teaching/learning methods.

- Only the first lesson of this App has been prepared due to the lack of time and manpower. This App will be completed and will support all courses required for beginners in German.

- Applying *"Communication Segment"* in the App enhances the quality of mobile learning and give students the opportunity to communicate with others and experts as well.

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APPENDICES

Appendix A: Consent Form for Student Questionnaire

Dear Students,

The purpose of this research is to develop 'A German Language Learning Application for Beginners on Android Systems'. Regarding the topic, it is essential to gather information from users. This information will be gathered from the students of the School of Foreign Languages at Eastern Mediterranean University through questionnaire by the researcher. The major goal of the questionnaire is to recognize the willing of the students in using smart devices in order to learn a foreign language and its effectiveness.

The questionnaire consists of three parts. It will take approximately fifteen minutes to answer all the questions. Participating for this research study is voluntarily and you are free to withdraw from it at any time. I assure you that all the provided data will be kept confidential and will only be used for the research. If you agree to participate the questionnaire, please fill in and sign the form below.

Arian Mostashari	Asst.Prof.Dr. Bengi Sonyel
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Eastern Mediterranean University	
6303122	
arian992@gmail.com	

I would like to state that I accept to participate into this research and answer the questionnaire and share my knowledge with the researcher.

Participant

Name and Surname: ....

Signature: ....

Date: ..../......................../.....................

Appendix B: Questionnaire

Participant Background Survey Your Name: Gender: ☐ Male ☐ Female Age:

Mobile: QQ: E-mail: Twitter (Weibo):

1. Do you own a tablet computer? ☐ Yes ☐ No

If so:
How often do you use it?

1 ☐2 ☐3 ☐4 ☐ 5 (1 = not very often; 5 = on a daily basis)

2. Have you used a tablet computer before to learn foreign language?

No, because _____.

Yes, I used it to _____(state the activities you did with the tablet).

3. Which of the following mobile technology do you own?

☐ Ordinary mobile phone ☐ Smartphone ☐ iTouch ☐ other MP3 player

4. Have you used these mobile devices for learning foreign language?

☐ No, because _____.
☐ Yes, I used _____ (device) to _____(activities).

5. If so, how much do you agree with the following statement?
Mobile technology is useful for learning a foreign language.

☐ Strongly agree, because _____.

☐ Agree, because _____.

☐ Neither agree nor disagree, because _____.

☐ Disagree, because_____.

☐ Strongly disagree, because _____.

6. How would you rate your computer skills?

☐1 ☐2 ☐3 ☐ 4 ☐ 5 (1 = novice, 5 = expert)

7. How would you rate your overall proficiency in any foreign language?

☐1 ☐2 ☐3 ☐ 4 ☐ 5 (1 = beginner, 5 = highly proficient

Usability	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I find the tablet computer cumbersome to use.	1	2	3	4	5
2. Learning to use the tablet computer is easy for me.	1	2	3	4	5
3. Interacting with the tablet computer is often frustrating.	1	2	3	4	5
4. I find it easy to get the tablet computer to do what I want it to do.	1	2	3	4	5
5. The tablet computer is rigid and inflexible to interact with.	1	2	3	4	5
6. It is easy for me to remember how to perform tasks when using the tablet computer.	1	2	3	4	5
7. Interacting with the tablet computer requires a lot of mental effort.	1	2	3	4	5
8. My interaction with the tablet computer is clear and understandable.	1	2	3	4	5
9. I find it takes a lot of effort to become skillful at using the	1	2	3	4	5

tablet computer.					
10. Overall, I find the tablet computer easy to use.	1	2	3	4	5
Effectiveness	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
11. Using the tablet computer helps me a lot in foreign language learning.	1	2	3	4	5
12. Using the tablet computer gives me greater control over my learning of the foreign language.	1	2	3	4	5
13. The tablet computer enables me to accomplish learning tasks more quickly.	1	2	3	4	5
14. The tablet computer supports critical aspects of my study.	1	2	3	4	5

Effectiveness, continued	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
15. Using the tablet computer increases my learning outcomes.	1	2	3	4	5
16. Using the tablet computer improves my foreign language performance.	1	2	3	4	5
17. Using the tablet computer allows me to	1	2	3	4	5

accomplish more learning tasks than would otherwise be possible.					
18. Using the tablet computer enhances my effectiveness on study.	1	2	3	4	5
19. Using the tablet computer makes it easier to study.	1	2	3	4	5
20. Overall, I find the tablet computer useful in my study.	1	2	3	4	5
Satisfaction	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
21. I find it interesting to use the tablet computer for foreign language learning.	1	2	3	4	5
22. I find it interesting to participate in the project.	1	2	3	4	5
23. I find it interesting to carry out tasks on the tablet computer.	1	2	3	4	5
24. I am willing to continue using tablet computers for foreign language learning.	1	2	3	4	5
25. I am willing to participate in any follow-up research on tablet-assisted	1	2	3	4	5

language learning.					
26. I am willing to carry out more tasks on tablet computers.	1	2	3	4	5
27. I am happy to have learned more about how to use tablet computer for foreign language learning.	1	2	3	4	5
28. I am willing to learn more about how to better utilize tablet computers to learn a foreign language more effectively.	1	2	3	4	5
29. I am satisfied with the functions offered by the tablet computer.	1	2	3	4	5
30. Overall, I am satisfied with using tablet computers for learning a foreign language.	1	2	3	4	5