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The use of Mobile Phones for Learning English in Armenian High Schools and Universities: A Survey Study

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Abstract

Mobile assisted language learning is novice and not developed in Armenia, so the current survey study can serve as a starting point to find out whether MALL: Mobile Assisted Language Learning, particularly the use of mobile phones is feasible for teaching and learning English in Armenian high schools and universities and to what extent mobile phones are currently being used for teaching and learning English in Armenia.

Mobile phones are considered to help learners and teachers in making language learning faster, easier and more engaging, and help creating an optimal language-learning environment. The use of mobile devices in language learning helps coordinate and enhance learning. Mobile phones as M-learning devices are very common and popular. Mobile phones are making our lives easier and it's hard to imagine life without mobile phones. Mobile phones have become so advanced and smart that they actually perform almost the same functions and features as personal computers.

The current survey study has been conducted using quantitative research methodology. The participants were pupils/students and teachers/instructors. The data of the questionnaires were analyzed quantitatively. Students' answers to the 0/1/2/3 and 0/1/2/ scale questionnaires were entered into the Statistical Packages for Social Sciences (SPSS 16.0) and Microsoft office Excel 2007.

The collected data was analyzed descriptively and inferentially, and the results were as follows: there is not significance between the means among the groups of schools and universities or the mean of data for university is higher than in school case.

Chapter 1: Background and Purpose

1.1 Introduction

Mobile assisted language learning is novice and not developed in Armenia, so the current survey study can serve as a starting point to find out whether MALL: Mobile Assisted Language Learning, particularly the use of mobile phones is feasible in teaching and learning English in Armenian high schools and universities and to what extent mobile phones are currently being used for these purposes. Mobile technologies offer numerous practical uses in language learning. In many cases, they are readily available. For example, nowadays mobile phone ownership has been reported to be nearly universal among college-aged individuals (Dias 2002, Thornton & Houser, 2005).

Since this is the first research related to the use of mobile phones for language learning in Armenian high schools and universities, it can be regarded as an exploratory study on which further research can be conducted. The study is significant for a very important reason: it draws the pupils'/students' and teachers'/instructors' attention to the existence of the use of mobile phones for language teaching/learning process.

Mobile devices such as mobile phones, netbooks, iPods, MP3 Players are powerful and fascinating tools in the hands of language learners. Mobile learning creates an idea of "anytime, anywhere learning", which is really fantastic (Dias, 2002, p. 10). Mobile phones may be useful in language education, as a means for students to communicate free of classroom pressures, and to help teachers in distant locations and/or working across a range of schools.

M-learning encourages creativity and innovation of both learners and teachers and it provides greater flexibility in learning. Mobile devices provide unique opportunities for instructors to deliver educational materials efficiently, and to support and encourage the cognitive and social process of learning. Using mobile technology students can communicate and

interact with their peers and teachers in real-time. Mobile devices can also be integrated into curriculum design to improve interactivity in the classroom.

Mobile devices are portable, small, lightweight, and not very expensive. They can be integrated into a wide range of instructional activities, both in and out of the classroom. The use of mobile devices in language learning helps coordinate and enhance learning. Moreover, there is a research done in Korea which proved that a psychological factor that owning handheld devices increases students motivation and deepens the commitment to using and learning with them (Freedman 2008, p. 27). Mobile technologies can also provide a safe, private and non-judgmental environment for learners to try out ideas and make mistakes in order to progress (Thornton & Houser, 2005).

In many countries such as in Austria, Korea, Japan, USA, Chinese survey research have been conducted and the results of using mobile phones have been positive, i.e. pupils/students and teachers/instructors from different schools and universities were using mobile phones for language learning and teaching purposes. The research showed that the attitudes of the majority of the students to using the mobile phones in learning English were positive and motivating (Freedman, 2008).

Five years ago in LLT, George Chinnery (2006) surveyed the use of mobile phones in some language learning projects in Austria. He reported on projects using mobile phones for language teaching and learning purposes. According to Chinnery (2006) the results of the study showed that technical problems arose due to the limitations inherent in the devices, in particular small, low-resolution screens (problematic for image/video display or even good text reading), poor audio quality (both in phoning and audio playback), awkward text entry, limited storage/memory and slow Internet connectivity. Many of the language learning projects were seriously hampered by these issues (G. Chinnery, 2006, p. 2).

The results of survey research in Japan (Thornton & Houser 2005, pp. 217-228) showed that Japanese university students use mobile phones very often for language learning purposes. The studies showed that Japanese university students are comfortable reading texts and viewing videos on small screens. Rich multimedia can capture their interest, and pushing study opportunities at students via mobile e-mail is effective in helping them acquire new vocabulary. The investigations suggested that mobile devices can be effective tools for a broad range of educational activities (Thornton & Houser 2005, pp. 217-228).

Another research in Korea (Freedman 2008, p. 27) investigated the use of mobile phones in language learning. The results showed improvements in using mobile phones for learning and teaching purposes suggesting that there is an advantage in considering this technology for more broad-based use in teaching languages and other subjects. The research sparked enthusiasm in both teachers and students using technology. It generated positive learning outcomes (Freedman 2008, p. 27).

In view of growing tendencies in m-learning it is necessary to conduct research and to find out the feasibility of using mobile phones for learning English in Armenia.

The current survey study is guided by the following two research questions:

1. *How feasible is the use of mobile phones for teaching and learning English in Armenian High Schools and Universities?* Why capitalized
2. *To what extent Mobile Phones are currently being used for language learning and teaching purposes?*
3. *How do pupils/students and teachers/instructors use mobile phones in their daily life?*

The hypothesis tested in this survey research is:

"Mobile Phones are currently being used for language learning and teaching purposes in Armenian High Schools and Universities"

Chapter 2: Literature Review

2.1 Introduction for Literature Review

The current survey research investigates whether mobile phones are used in teaching and learning English in Armenian high schools and universities and to what extent Mobile Phones are currently being used for learning and teaching purposes. The aim of this chapter is to provide relevant background for the present research.

First, it will investigate what MALL: Mobile Assisted Language Learning is. It will introduce the concept of Mobile Learning and will discuss the use of Mobile Phones for teaching and learning purposes.

2.2 MALL: Mobile Assisted Language Learning

According to Agnes Kukulska-Hulme's (2009), MALL: Mobile Assisted Language Learning can be defined as any educational material that can be stored in such technologies, which are handheld and palmtop devices and can be available anytime, anywhere and any place. MALL differs from CALL: Computer Assisted Language Learning in its use of personal, portable devices that enable new ways of learning, emphasizing continuity or naturalness of access and interaction across different contexts of use (Agnes Kukulska-Hulme's, 2009, pp. 271–289).

According to Prensky (2007), educators might use MALL to encourage rather than stop student innovation. However, if teachers are not aware of the ways that MALL, particularly mobile phones can be used for teaching and learning purposes, they can view it as disruptive. As mobile phones with ever-expanding possibilities of texting, web browsing, and game playing have multiplied in recent years among teenagers and even preteens, so have the concerns of

teachers and administrators about the distractions these devices can cause. Many schools around the country ban student mobile phone use during the school day (Prensky, 2007).

W. Dias (2002) promotes learner-learner interaction of the work using more expensive mobile devices. He states that MALL encourages collaboration and co-construction of knowledge; learners have to find information and share it with their peers in order to build up an overall understanding of a real-world problem, namely, the layout of the campus and the location and purpose of various buildings. According to W. Dias (2002), materials can be delivered to learners via SMS or a website. Very few activities support learner collaboration or communication.

In general, MALL would be expected to use technologies such as mobile phones, MP3/MP4 players, iPODs, PDAs and palmtop computers. The focus of this research is on the use of mobile phones in language learning.

Mobile phones are part of an "anytime, anywhere" learning movement that leaves laptops and even smaller netbooks behind, proponents say, in favor of more mobile, affordable and reliable handheld devices from "Smartphones", which can run operating systems such as Windows Mobile and a host of software, to iPods, known more for playing audio and video but adaptable to more interactive applications through new educational platforms (W. Dias, 2002).

According to Kvavik (2005), mobile phones are less expensive than standard equipments such as PCs. "Mobile phone is superior to a computer in portability; as some students do not have their own computer and mobile phones can be just as easily used outside of the classroom as they can in it" (Kvavik 2005, p. 57).

Yamaguchi (2005) states that a computer is better than a mobile phone for handling various types of information such as: visual, sound and textual information.

2.3 What is mobile learning?

M-Learning is learning mediated via handheld devices and are potentially available anytime, anywhere (Kukulska-Hulme & Shield, 2008). Mobile learning is undergoing rapid evolution. Mobile learning provides a high degree of mobility, flexibility and independence. Individuals can learn at any time and any location according to their personal learning budget. They can use unexpected free times spontaneously for learning, preventing the need for computer access and availability of learning materials (Bernd J. Kramer, 2005). Facer (2004) states that mobile technologies are a familiar part of the lives of most teachers and students.

Mobile devices such as mobile phones, personal digital assistants (PDAs), smart phones, etc., are carrying powerful functions as do personal computers. Because these devices are small, smart, portable, and comfortable to use, particularly to the digital natives, all these devices are regarded as teaching instruments in the M-Learning. Among all the mobile devices, mobile phones are probably the most popular and widely used all over the world (M. Geary, 2008).

2.4 The scope of the Usage of Mobile Learning; Mobile Phones: Advantages and Disadvantages of Using Mobile Phones

"Mobile Phone is a portable device for connecting to a telecommunications network in order to transmit and receive voice, video, or other data" (H. Reinder, 2010). Phones, netbooks and iPods are finding a place in the curriculum and expanding student access to technology. Chinnery (2007) identifies Internet access, voice- and SMS text messaging, cameras and even video-recording as common mobile phone features that enable communicative language practice, access to authentic content, and task completion.

M. Geary (2008) states that the number of mobile phone users is increasing because of the advanced functions offered by mobile phones such as text messaging, wireless Internet, MP3 players, global positioning system (GPS), etc. However, in Geary's opinion (2008), most people use mobile phones as a communication or entertaining tool for teaching and learning.

M-learning encourages creativity and innovation by both learners and teachers and it provides greater flexibility in learning. The scopes of the usage of mobile learning are:

- ✓ M-Learning enhances group collaboration among students and instructors using a Pocket PC.
- ✓ Job training, learning with handheld or wearable technologies solve a problem of classroom education
- ✓ Student can learn outdoors, for example on field trips.
- ✓ Support informal or lifelong learning, such as using handheld dictionaries and other devices for language learning.
- ✓ Provide audiovisual support in order to enhance training similar to a corporate business or other classroom environment (M. Patel, 2010).

Mobile phones as M-learning devices are very common and popular. Today, there are almost three billion mobile phone subscribers worldwide. Mobile phones are making our lives easier and it is becoming hard to imagine modern life without mobile phones. Mobile phones are so advanced and smart that they actually perform almost the same functions and features as personal computers. Prensky (2004) states that mobile phones are not just communication devices sparking new modalities of interacting between people, they are also particularly useful computers that fit your pocket, are always with you, and are always on. Supporters of mobile phones highlight that students' mobile phones have many benefits, like improving student safety and enhancing learning (R. Richards, 2010).

Mobile phones are easy to use, interactive and connected. Because of their usability, mobile phones allow users to go beyond the boundaries of time and space forced by schools to connect to a world of information anytime and anywhere (Rogers & Price, 2007). In addition, mobile phones allow learners to collaborate, create new knowledge, and share this knowledge immediately on the Internet, all within real-world contexts (Alexander, 2004).

Mobile Phones have both advantages and disadvantages. Kvavik (2005) states that the advantages of mobile phones are more than the disadvantages. According to Kvavik (2005), mobile phones are less expensive than standard equipments, such as PCs. He states that the portability of mobile media is also considered a benefit. "Mobile phone is superior to a computer in portability, as some students do not have their own computer" (Kvavik 2005, p. 57).

Mobile phones can be just as easily used outside of the classroom as they can in it. Learners can study or practice manageable chunks of information in any place on their own time, thus taking advantage of their convenience. These benefits indicate the potential that mobile technologies as mobile phones have in expanding social inclusion in language learning (Kvavik, 2005).

Agnes Kukulska-Hulme (2009) suggests taking into consideration the effective and defective aspects of m-learning.

Some effective aspects of integrating mobile devices in language learning are as follows:

- ✓ Enhance, engage and motivate students in the process of language learning
- ✓ Make students be more self-directed learners
- ✓ Meet the needs of the 21st century in terms of language competency and technological literacy
- ✓ Use mobile devices not only for social contents but also for educational purposes (Agnes Kukulska-Hulme, 2009).

Some defective aspects of integrating mobile devices in language learning, according to Agnes Kukulska-Hulme (2009, pp. 267-269), are as follows:

- ✓ Some students may not be able to afford themselves to have contemporary mobile devices
- ✓ Teaching/learning processes may be interrupted because of secondary raised concerns (such as internet connection, software problems, voice recognition problems) (Agnes Kukulska-Hulme , 2009, pp. 267–269).

Brown (2005) argues stating that mobile learning and its worldwide capabilities can contribute greatly to education, especially in areas of the world with limited technological infrastructure in place. Brown (2005) suggests that the primary benefit of mobile devices in education is not only the unlimited access/support but also richness in communication skills. Not proposing that m-learning be used exclusively, Brown (2005) suggests that mobile communication can optimize the interaction between the teachers with the student.

2.5 How can teachers use mobile phones for EFL learning/teaching in Armenia in and out of classroom?

P. Jobe (2010) highlights that Mobile Phone use is increasing, though it is still repressed more than accepted as an educational tool in many high schools. P. Jobe (2010) goes on stating that the key problems teachers have with unsanctioned mobile phone use in schools include:

- ✓ Sending friends text messages during class time.
- ✓ Sending or receiving test answers.
- ✓ Bully or harassment via unwanted text messaging.
- ✓ Taking and distributing inappropriate digital photos of students (P. Jobe, 2010).

Some schools are questioning whether the policy of schools and universities is truly serving to make the school a more secure environment, or whether they simply make it easier for inappropriate behaviors to go unnoticed. How the active interaction between teachers and students can change if teachers tell the students to put away their mobile phones that mobile phones are not allowed to be used during the class time (P. Jobe, 2010). In P. Jobe's (2010) opinion, people are not ready to use them yet. P. Jobe's (2010) states that among many countries mobile phones have been banned in schools. He is critical of the attitude which is banning mobile phones while Fisch (2008) thinks that mobile phones are being widely used due to their multi functionality such as sending messages to contacts, taking photos and videos, surfing the Internet and more for learning and teaching purposes.

Learners can be encouraged to:

- ✓ Use online or downloaded dictionaries
- ✓ Read online or downloaded books
- ✓ Type a letter

- ✓ Create a podcast
- ✓ Listen to a podcast
- ✓ Create a blog
- ✓ Keep weekly journals
- ✓ Play educational games
- ✓ Record the instructor and playback the lesson
- ✓ Take pictures and use for a presentation
- ✓ Research online for papers, articles, etc
- ✓ Use the video or audio recording capabilities of mobile phones to get students to record themselves or each other during speaking or pronunciation activities (F. K. Schlosser, 2002, pp. 365-367).

According to F. K. Schlosser (2002), teachers can also use SMS texting in the target language to enhance learning. They can send quick quiz questions to students to help them revise or check their understanding of new vocabulary. They can also send students definitions of new words or expressions as they learn them, or send gapped sentences for completing to check their grammar.

J. Anderson (2005) states that most schools ban mobile phones in the classrooms. Dr Elizabeth Hartnell-Young (2005) argues with J. Anderson (2005) stating that the idea of banning mobile phones at schools and universities is a mistake. The devices commonly regarded as the bane of educators' intent on creating the right environment for learning may yet emerge as a superior teaching tool. In this new idea, mobile phones take on an unexpected quality because they enable students to achieve more.

According to Dr Elizabeth Hartnell-Young (2005), the lead researcher, one of the key rationales behind the project is that students are using technology they value and with which they feel comfortable. She states that it is understandable that many educators view these phones as a huge distraction, dreadful intrusions and tools of the evil. In addition, she goes on stating that with all tools of learning, once a purpose is established, mobile devices will have a role to play.

Lesley (2008) states that if, like some teachers, one wants to try to use the mobile phone as a teaching tool, one should consider its ever-evolving range of functions:

- ✓ Digital cameras. Not all schools or classrooms are equipped with digital cameras, although many can benefit from them. For example, students can use them to document a variety of things for multimedia presentations or reports during their English classes. Fieldtrips can be documented and incorporated into digital travelogues.
- ✓ Internet access. Many phones have wireless Internet access, thus opening up a world of possibilities for class use. Students can subscribe to podcasts offered by a multitude of other sources.
- ✓ Dictionaries. Students in their English classes can benefit from being able to quickly look through the definition of a word. Additionally, students who are English learners especially can benefit from translation dictionaries which are becoming available on cell phones. (Kukulska-Hulme, Agnes & Shield, Lesley, 2008).

H. Reinder (2010) states that because of the size, opportunities, internet connection, students use mobile phones almost all day. In order to learn languages through mobile phones H. Reinder (2010) suggest the following advantages:

- ✓ Communication both inside and outside of the classroom
- ✓ Recordings, downloading podcasts, interviewing people, writing reflections
- ✓ Getting free translations, photos, taking videos/pictures and sending them to online map.

- ✓ Sending emails in the target language, commenting on each other's work, doing homework assignments/activities.

H. Reinder (2010) states that despite the advantages, mobile phones have also the following disadvantages:

- ✓ They can be disturbing
- ✓ Counterproductive as the students may chat with each other in the classroom or it can ring in the middle of the lesson.

H. Reinder (2010) suggests that in order to avoid all these, mobile phones should only be used outside of the classroom and not inside of it. However, Agnes Kukulska-Hulme (2009) considers that mobile devices can be successfully used in both inside and outside of the classroom. Agnes Kukulska-Hulme (2009) goes on stating that it would be beneficial to start using Mobile devices outside of the classroom and in case of successful accomplishment of the tasks, integrate mobile devices inside the classroom as well.

2.6 The functions of mobile phones and 20 ideas how to use Mobile Phones for language learning

According to Prensky (2004), a thorough look and analysis of their basic and up-to-date functions is necessary before teaching and learning with mobile phones can be done:

- ✓ Voice. This is the basic function of mobile phones; people use voice to communicate. Every day, people all around the world spend a large amount of time talking through mobile phones.

But, how can people best integrate the voice function of the mobile phones into education? According to Prensky (2004), in some new computer applications such as VoiceThread, people can use their mobile phones to call and record their voices to communicate with others or post their comments to their VoiceThread page. Recently, a new type of mobile phone is equipped with a voice recorder that people can record messages and then send them via Internet or Bluetooth. In UK, the CTAD Company even created "voice-only mobile phone learning for school dropouts with language needs" (Prensky, 2004, p. 4).

Another latest free source, Snapvine, allows anyone to use their mobile phones to audioblog or record voice. Users can post directly to a public blog on their site, or to a private voice comments page" (Kolb, 2008, p. 1).

- ✓ SMS (short message service). SMS is a service that allows people to interchange text messages between mobile phones. A great number of short messages are sent every day and people usually find that sending SMS is a good alternative to communicate with other people compared with face-to-face communication. They may feel more comfortable and relaxed while sending SMS because they can have more time to ponder what to write. Besides, sending SMS is much cheaper than making calls. SMS system can be used to help students learn foreign languages and teachers can use SMS to communicate with one student or even one group of students (Prensky, 2004).

- ✓ Browsing. To browse with mobile phones is a very convenient way for students to be online. They can use browsers to check e-mails, read instructional materials, such as online textbooks, and watch lectures from anywhere and at anytime. There are also many more mobile sites available to students. Students can just log online via their mobile phones and obtain access to the instructional materials (Prensky, 2004).
- ✓ Downloading. People can download various kinds of materials they like to their mobile phones easily. There are more free online material for users to download such as e-books, music, instructional materials, and so on. People can enjoy their downloaded music on their mobile phones rather than having an MP3 player. Students can download their required e-books and read them whenever they have time without carrying the heavy books. People even download useful software and dictionaries (Prensky, 2004).
- ✓ Camera. Recently, people have argued that mobile phone cameras can disturb people's lives and interrupt people's privacy. Proper use of the camera on the mobile phone is of vital importance. Students will greatly benefit from having a camera on the mobile phones when collecting scientific data, documenting information, and storing visual material. However, to maintain the quality of the images, a higher camera resolution is required (Prensky, 2004).
- ✓ Gaming. The game feature is available in almost every mobile phone, either entertaining or instructional. Games offer people a good way to relax and people can also benefit a lot from playing games such as developing problem solving and critical thinking skills. Presently, there are many instructional games available such as memorizing the spelling of words (Kolb, 2008).

However, after giving all the functions, Prensky (2004), in addition, states that though mobile phones have their unique features and functions as well as their great potentials in teaching and learning, people have to accept the fact that they also have some flaws. Like some other mobile devices, in Prensky's opinion (2004), mobile phones do not have enough screen size for people to read. The limited battery does not allow longevity of use. Mobile phones usually cannot offer users as much storage space as computers and the absence of keyboard can

also disenable people to type long. All of these factors cannot be overlooked and should be considered when exploring the medium's usage and potential.

H. Reinder (2010, pp. 16-19) suggests 20 ideas of how mobile phones can be used for language learning which are as follows:

1. Use the notes feature to collect everyday language
2. Use the camera feature to take pictures of text
3. Use free programs to organize language samples like evernote.com
4. Use the Voice Memo recorder feature to record language from media outlets.
5. Use the Voice Memo Recorder to record conversations outside the classroom
6. Use the Text Messaging feature to reinforce vocabulary learning
7. Use free programs to make flashcards for mobile phones like flashmybrain.com which isn not free.
8. Use the Text Messaging feature for circular writing. That is, you write a sentence and then every adds a sentence or so to the story. This good specifically for those students who do not like writing.
9. Use the Text Messaging feature for tandem learning. That is, when two students from different countries want to learn each other's languages.
10. Use the mobile to keep a blog.
11. Use the mobile phone for microblogging on Twitter.
12. Use the mobile phone for social networking.
13. Use the mobile phone for a language exchange.
14. Use the mobile phone for a "phlogging" a recent four of blogging that entails calling and a number and leaving a message on a website like ipadio.com
15. Use mobile phone memory to distribute listening material
16. Use mobile phone memory
17. Use the Mobile phones to play games

18. Use the Voice memo Recorder, Notes and Calendar features to keep a portfolio.

19. Use the Mobile Phones to check student comprehension and get feedback

20. Use mobile phone memory for research and data collection.

2.7 Suggestions on Mobile Phone Use

George Lucas (2009) highlights that students use digital technologies, particularly mobile phones as a digital native, as immersed. Students can learn languages on mobile phones by listening to music, reading, writing text messages. Students can read books; moreover, they can listen to the books via mobile phones.

According to Henry Jenkins (2009), students can interact with their instructors on the phones. He also states that teachers may have a more personal relationship with the students, because they interact on the phone, they can really get to know students better and they can also identify students' strengths and weaknesses quickly.

H. Jenkins (2009) states that with the great development of mobile phone technologies, services, and the realization of mobile phones' instructional potential, educators are more than ready to apply mobile phones in EFL learning. How can educators best take advantage of the mobile phone popularity and apply them in Armenian EFL teaching and learning? The following suggested elements and steps are being considered:

- ✓ **Attitudes.** The primary issue is people's attitudes toward the usage of mobile phones. Schools and institutions do have their reasons to worry about mobile phone usage on campus. For example, students might abuse them by browsing online or playing games while they are in class or they might even become too addicted. But, considering great advantages that mobile phones can bring, the adoption of mobile phones in education should be greatly encouraged. As Fryer (2009) states it's time to ask the kids to get them out and use them for learning, rather than just banning them for use at school where more relevant work is required like filling out worksheet study guides based on a textbook that is five years old (Fryer, 2009, p. 107).

Educational departments, schools and teachers should support and promote the integration of mobile phones in educational fields. For example, proper and updated policy or guidance regarding the promotion of technology integration in education such as mobile phones

should be drawn up. More funds and attention should be allocated so that teachers and students can benefit more from the use of mobile phones. With joint efforts, mobile phones would be more welcomed and play an increasing role in education (Wauschkuhn, 2001).

- ✓ **Transmission system.** Mobile phone transmission systems need to be upgraded to ensure the quality of calling, sending, and receiving. All the disadvantages of mobile phone transmissions such as weak signals, connection costs, radiation, etc. need to be seriously treated so that users can make full use of all the features without much barrier (Wauschkuhn, 2001, p.7).

Universities should set up their own campus wireless mobile phone call system to minimize the cost of phone calls. So that students can feel free to communicate with each other in English or ask questions from teachers without worrying about the cost. Students can record their oral tasks and send them back to the teacher for evaluation. To cut down the cost, universities can seek cooperation with telecommunications companies to obtain free or cheaper instructional mobile phones for students (Wauschkuhn, 2001).

At the same time, schools should also take great consideration of the SMS system. They should take efforts to cut down the cost of sending text and ensure the high quality of sending and receiving. Students do not want to send text messages early in the morning only to receive the replies at night. Schools can also use SMS system to send out administrative information. They can send information such as events or reminders, so it is convenient for users to discover the information stored in their mobile phones without writing notes. Students can provide feedback to teachers via SMS. Homework and some tests can also be delivered in this way. Bandwidth issue should also be considered so that students can download all their instructional materials in a short time. With limited bandwidth, downloading can be frustrating because it might take hours to accomplish even a simple task. Telecommunications Company or schools with Intranet should update their systems so students can easily obtain their learning materials from online (Wauschkuhn, 2001).

- ✓ **Teacher's training**. Teachers are the key factors in integrating technology such as adopting mobile phones in EFL teaching. Teachers should become familiar with all the updated technology and acquire essential skills toward applying technology in their teaching. Teachers also need to provide instructions to students on the use of technology in class. In order to ensure success, government and schools should offer training opportunities to teachers, so that they will be prepared and confident in using all of these technologies. With more skills and confidence in applying all the technologies, teachers can better facilitate EFL teaching and learning and students can learn and benefit more (Nikolova, 2002).
- ✓ **Student's participation.** Students need to have basic computer literacy and actively engage in using all of the technologies. They should be encouraged to acquire basic training from the computer center or from their teachers. They should also be guided toward learning all the options while using their mobile phones. With adequate guidance, students can view their teacher's Web page or access some other online English learning resources via mobile phones, and they can also take online tests. Schools and teachers could also design customized mobile Websites based on the unique features of the mobile phones so that students will find it is easier to use their mobile phones.

Students could download materials or software for further reading, listening, and finishing their assignments or obtaining help in learning English after class. If teachers and students are in the same location, they can also share files via Bluetooth. Students should know how to store educational materials such as listening materials or books in their cell phones for later review. They should also be able to store reading materials such as the passages and articles from their textbooks or keep the listening materials downloaded from other places. With all the instructional multimedia materials stored in their mobile phones, students can have more opportunities to work within an authentic context (Nikolova, 2002).

- ✓ **Development of mobile phone and its applications.** With the adoption and development of mobile phone usage in EFL teaching and learning, companies should help

students update their mobile phones and programmers, technologists, and teachers should also develop suitable software or applications for teachers and students to use. Mobile phones could be produced with more volume capability for students to store information and materials. Teachers and students will also expect to obtain an alternative solution for the limited screen size and the lack of a keyboard.

Programmers and game designers can produce some inspiring and meaningful mobile phone games for students. Playing games is always an enjoyable experience and if a considerable number of instructional programs can be converted to games, students would demonstrate a greater interest in learning English language. Games, such as word shooting, would be especially helpful and meaningful to English learners because they can learn words while playing games (Fryer, 2009).

2.8 Conclusion

With the development of technology and mobile learning, mobile phones will play a more important role in language learning. They are powerful tools and can bear almost the same functions as personal computers. There should be mentioned that this is the fact that mobile phones are relatively inexpensive as compared with, for example, wireless laptop computers, and with functions such as Internet browsers that are available in current mobile phones, the range of possibilities of mobile phones as tools for learning increases even further. Podcasting is another area which has gained in popularity over the past few years, e.g. there are limitations in the interactivity that MP3 players can achieve, generally restricted to playing audio or, more recently, video.

In contrast, most modern mobile phones have either e-mail or Short Message Service (SMS) functionality, which means that information can be forwarded to and from mobile phones by teachers or students. Internet-capable mobile phones allow immediate connection to a server, which makes it possible for learners to retrieve updated or specific information as they require it, and for teachers to maintain detailed logs of access (Rosell-Aguilar, 2007, Ducate & Lomicka, 2009).

In addition, the fact that mobile phones are relatively inexpensive as compared with, for example, wireless laptop computers, and with functions such as Internet browsers that are available in current mobile phones, the range of possibilities of mobile phones as tools for learning increases even further (Rosell-Aguilar, 2007).

Chapter 3: Methodology

3.1 Introduction

The current survey research investigates whether mobile phones are used in teaching and learning English in Armenian high schools and universities and to what extent Mobile Phones are currently being used for learning and teaching purposes.

The current survey study is guided by the following two research questions:

1. *How feasible is the use of mobile phones for teaching and learning English in Armenian High Schools and Universities?* Why capitalized
2. *To what extent Mobile Phones are currently being used for language learning and teaching purposes?*
3. *How do pupils/students and teachers/instructors use mobile phones in their daily life?*

The hypothesis tested in this survey research is:

"Mobile Phones are currently being used for language learning and teaching purposes in Armenian High Schools and Universities"

A *survey* is simply a data collection tool for carrying out survey research. Pinsonneault and Kraemer (1993) defined a survey as a "means for gathering information about the characteristics, actions, or opinions of a large group of people" (p. 77). Surveys can also be used to assess needs, evaluate demand, and examine impact (Salant & Dillman, 1994, p. 2).

"Survey research is used to answer questions that have been raised, to solve problems that have been posed or observed, to assess needs and set goals, to determine whether or not specific objectives have been met, to establish baselines against which future comparisons can be

made, to analyze trends across time, and generally, to describe what exists, in what amount, and in what context" (Isaac & Michael, 1997, p. 136).

The current study is a survey research, which has been conducted using quantitative research methodology. The questionnaires include both closed-ended questions open-ended questions. Because of lack of qualitative data the research has been conducted only quantitatively. The participants did not show interest to open-ended questions except two students. This chapter provides information about the Setting, participants and Instrumentation.

3.2 Setting and Participants

Sampling is the selection of individual observations intended to yield some knowledge about a population. In statistics, a statistical population is a set of entities concerning which statistical inferences are to be drawn, often based on a random sample taken from the population.

The survey study was done in Armenia, Yerevan. The data has been collected from different universities and high schools of Yerevan that are selected at random. The people selected to participate in the sample are teachers/instructors and students/pupils who are being selected purposefully. For the sampling only English teachers/instructors and adult pupils/students whose foreign language is English have been selected. The age of pupils varies from 12 to 16 and students are of different ages. 11 teachers and 90 pupils from different high schools participated in this survey research. 26 instructors and 81 students from different universities of Armenia participated in the current survey research. All the students were from English department and the pupils' foreign language was English. Most of the participants were female. All the participants who were given the questionnaires replied very kindly to the given questions except open ended-questions. Because of lack of time the participants did not reply any open-ended question. The questionnaires were distributed to participants during the class breaks for not to disturb them.

The data has been collected from:

- ✓ Yerevan State University (English department)
- ✓ Yerevan State Pedagogical University (English department)
- ✓ Eurasia International University(English department)
- ✓ American University of Armenia (English department)
- ✓ Yerevan Haybusak University (English department)
- ✓ Yerevan Hrachya Acharyan University (English department)

- ✓ Yerevan M. Mashtots University (English department)
- ✓ Quantum College of Yerevan (English courses)
- ✓ Yerevan High School N 119
- ✓ Yerevan High School N 159
- ✓ Yerevan High School N 114
- ✓ Yerevan High School of 29
- ✓ Yerevan High School N 190
- ✓ Yerevan High School N 83
- ✓ Yerevan High School N 170

3.3 Instrumentation

The instruments used in this survey study were questionnaires: questionnaire for pupils/students and questionnaire for teachers/instructors and the questions were formed based on literature review. The questionnaires were piloted with some students of American University of Armenia and some teachers of Quantum College. The participants replied all the questions with pleasure. Then the answers of the questionnaires were discussed and validated. After that the researcher started to collect the data from different pupils/students and teachers/instructors. The questionnaires were filled out anonymously.

3.3.1 Questionnaire for the pupils/students

Because of lack of qualitative data the results of this survey study have been described only quantitatively. The questionnaire consists of closed-ended questions and open-ended questions. The advantage of closed form questionnaires is that they are easy to be filled out on the part of the participants. The pupils'/students' questionnaire contains 14 questions with 12 closed items and two open-ended items and each question item is responded to with scale such as 0/1/2/3/ never, rarely, sometimes, often and 0/1/2-yes, not sure, no. The questions in the questionnaire are written both in English and Armenian languages. The questions are formulated in a way that could be easily read and understood.

3.3.2 Questionnaire for the teachers/instructors

The same way the teacher'/instructors' questionnaire are (see above 3.3.1). The questionnaire for the teachers/instructors consists of 12 questions with 10 closed items and two open-ended items.

3.4 Procedures

The data collection procedure lasted for 4 weeks starting 26 April and finishing 22 May 2011. Permission to conduct the research among pupils/students of different high schools and teachers/instructors of different universities was gained from the principles of the high schools the head of the English Department of universities. The questionnaires have been distributed directly to the participants. In this way the researcher could explain the purpose of the questionnaire and the significance of the survey. The questionnaires have been completed during breaks in the particular educational institution.

The anonymity of students' identity and responses has been kept and the students had been informed about that before they were distributed the questionnaires. Before distributing the questionnaire, the students have been informed that they were volunteers and they were not forced to answer the questions if they did not want to do that.

In the same way the teachers'/instructors' questionnaire was distributed to teachers/instructors. The questionnaires were distributed during the breaks of the classes in the staff room of the high schools and universities. Whenever during the break there was an English teacher or an instructor they were asked for filling in the questionnaires. And whoever met in the staff room they participated in the survey with great pleasure.

3.5 Analysis

Because of lack of qualitative data, the data of the questionnaires was analyzed only quantitatively. Only two students commented saying:

Student 1

- Mobile Phones form an inseparate part of our lives and let us learn at anytime and become active learners, and use the language outside of the classroom.

Student 2

- Armenian students like mobiles and I guess they will be happy to use their phones for English language purposes.

They were students from American University of Armenia. Students' answers to the 0/1/2/3 and 0/1/2/ scale questionnaires were entered into the Statistical Packages for Social Sciences (SPSS 16.0) and Microsoft office Excel 2007. Descriptive and inferential statistical analyses are used in this survey study. The results of these analyses are reported in the next chapter in more details (See chapter 4).

Chapter 4: Analysis and Results

4.1 Introduction

This chapter includes the description of the tools used for analysis: SPSS 16 and MS Office Excel. It also contains the analysis of quantitative data for pupils, students, teachers and instructors separately and hypothesis and statistical inferences.

4.2 Description of tools used for analysis: SPSS and MS Office Excel

Tools which are used in this current survey research are: SPSS and MS Office Excel. SPSS (originally, Statistical Package for the Social Sciences) was released in its first version in 1968 after being developed by Norman H. Nie and C. Hadlai Hull. Statistical analysis provide a set of tools for helping us to evaluate and improve the qualities of the tests we use, and to help us assume that we use these tests in ways that are valid and fair (L. F. Bachman 2008).

Next tool is Data analysis in MS Office Excel which develops statistical analyses. It provides the data and parameters for each analysis, and the tool uses the appropriate statistical macro functions to calculate and display the results in an output table (Michael S., 1995). This tool was used also to produce output graphs.

4.3 Analysis of the Quantitative Data

Numerical data (or quantitative data) is data measured or identified on a numerical scale. Numerical data can be analyzed using statistical methods, and results can be displayed using tables, charts, histograms and graphs (Michael S. 1995). The level of the measurement scale of the data is nominal.

4.3.1 Analysis of the quantitative data: questionnaire for pupils

Research Question 1

How feasible is the use of mobile phones for teaching and learning English in Armenian High Schools and Universities?

Item Q8

The results of this survey study have been described quantitatively. The pupils' questionnaire contains 14 questions with 12 closed items and 2 open-ended items and each question item is responded to with scales such as 0/1/2/3/ never, rarely, sometimes, often and 0/1/2-yes, not sure, no.

Background of pupils

Descriptive statistical analysis consists of procedures of describing the characteristics of the scores of a particular group or of individuals (L. F Bachman, 2004).

Table 1 shows the background information about the pupils. The current data has been collected from different high schools of Yerevan that are selected at random. The participants that have been selected for the current sampling are pupils at the age of 12 to 16. 90 pupils from different high schools responded the questions (see appendix Table 1).

Table 2 shows that out of 100% participants 10 % pupils are from N114 high school, 15,6 % are from N119, 6,7 % are from N159, 7,8 % are from N170, 8,9 % are from N190, 7,8% are from N29, 7,8 % are from N83 and 35, 6 % are from Quantum (see appendix Table 2).

Pie Chart

The proportion of the Pie represents the category's percentage in the population or sample (L. F. Bachman, 2008).

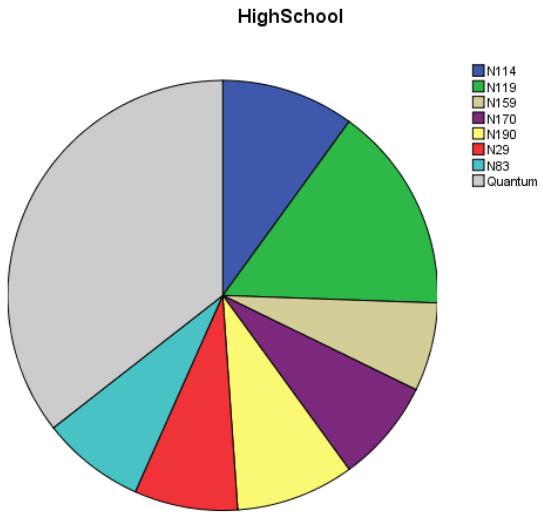


Table 3 shows that out of 100 % participants 5,6 % pupils are studying at the year of 8, 60% are at 10 and 14,4 % are at 11(see appendix Table 3).

Pie Chart

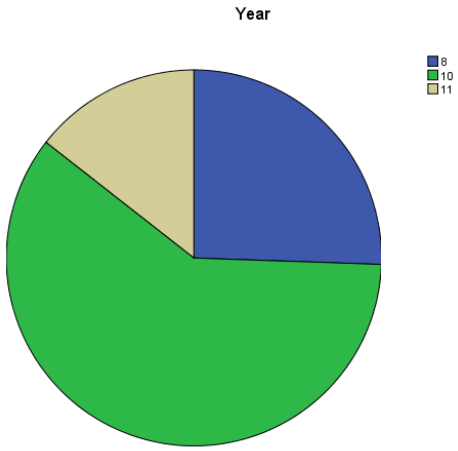


Table 4 shows that out of 100% participants 2,2 % pupils are at the age of 12, 23,3 % are at the age of 13, 23,3 % are at the age of 14, 46,7 % are at the age of 15 and 4,4 % are at the age of 16(see appendix Table 4).

Pie Chart

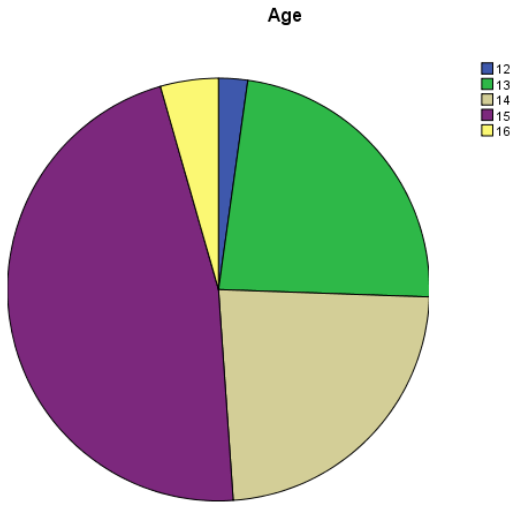


Table 5 shows that out of 100 % pupils 45,6 % pupils are female and 54,4 % pupils are male (see appendix Table 5).

Pie Chart

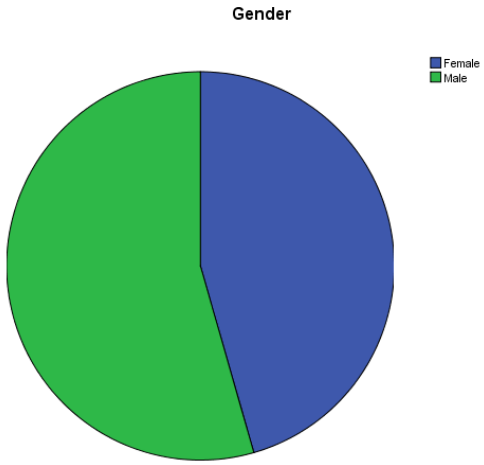


Table 6 shows that 100 % pupils' foreign language is English(see appendix Table 6).

Pie Chart

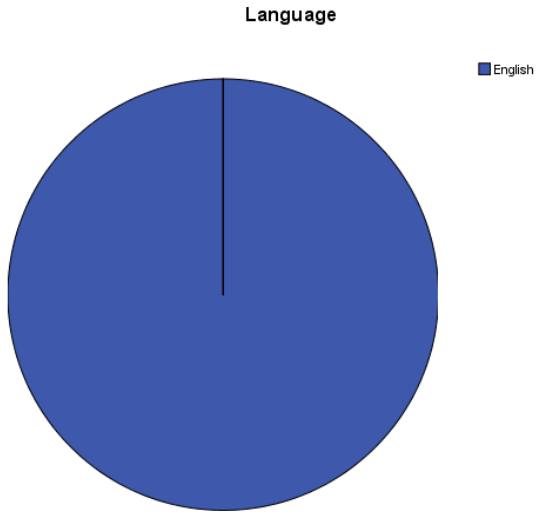


Table 7 shows that out of 100 % participants 4,4 % pupils use IPhone, 5,6 % use LG, 5,6 % use Motorola, 44,4 % use Nokia, 28,9 % use Samsung, 10 % use Sony Ericson and 1,1 % pupils use Vertue (see appendix Table 7).

Pie Chart

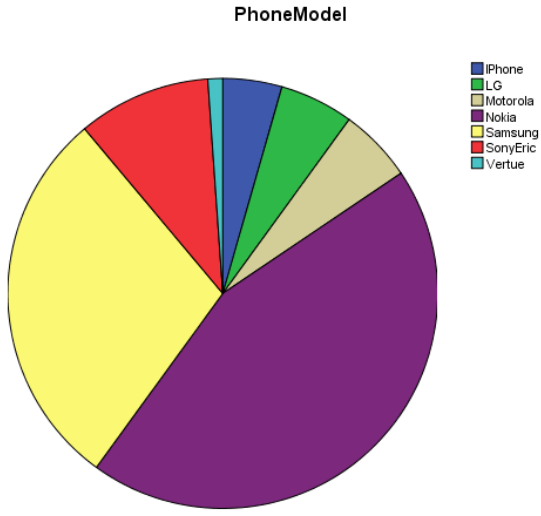
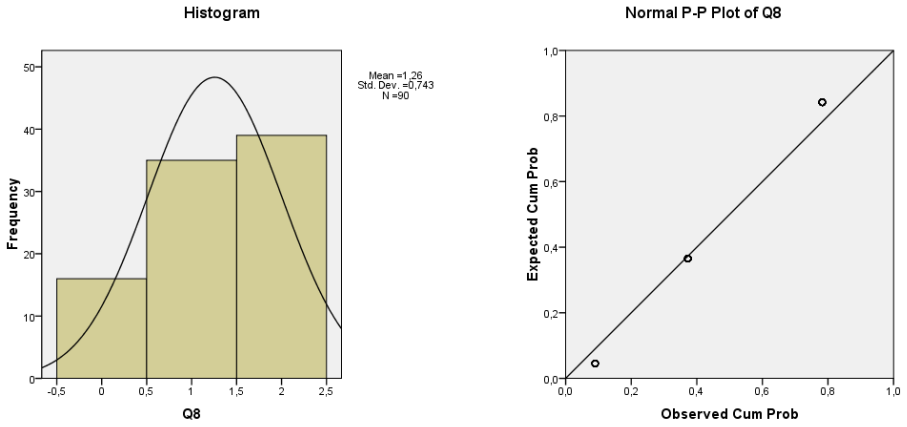


Table Q8 is: Do you think mobile phones could help you improve your English?

Table Q8a shows that out of 100 % respondents 17,8 % pupils think mobile phones could not help them improve their English, 38,9 % of pupils are not sure of that and 43,3 % pupils gave a positive answer(see appendix Table 8a).

In this current survey research histograms and plots are also used to show a visual impression of the distribution of data. The Histogram analysis tool calculates individual and cumulative frequencies for a cell range of data and data bins. This tool generates data for the number of occurrences of a value in a data set (L. F. Bachman, 2008).

Plots are variable's cumulative proportions against the cumulative proportions of any of a number of test distributions. Probability plots are generally used to determine whether the distribution of a variable matches a given distribution. If the selected variable matches the test distribution, the points cluster around a straight line (L. F. Bachman, 2008).



As we can see in both figures the assumption of normality for the population from which the response results are sampled is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure "Normal P-P Plot".

Findings of research question 1 show that many pupils (43.3%) are using mobile phones for learning purposes and are thinking that mobile phones can help them improve their English.

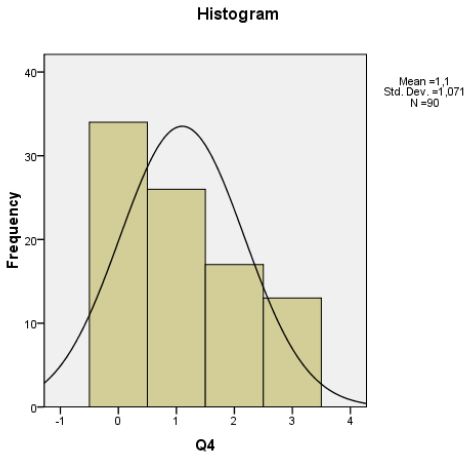
Research Question 2

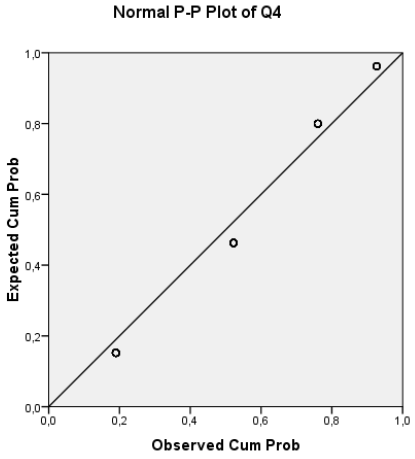
Item Q4

To what extent Mobile Phones are currently being used for language learning and teaching purposes?

Table Q4 is: **Do you use mobile phones for learning English?**

Table Q4a shows that out of 100 % respondents 37,8 % pupils often use mobile phones for learning English, 28,9 % rarely use, 18,9 % sometimes use and only 14,4 % pupils never use.





As we can see in both figures the assumption of normality for the population from which the response results are sampled is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure “Normal P-P Plot”.

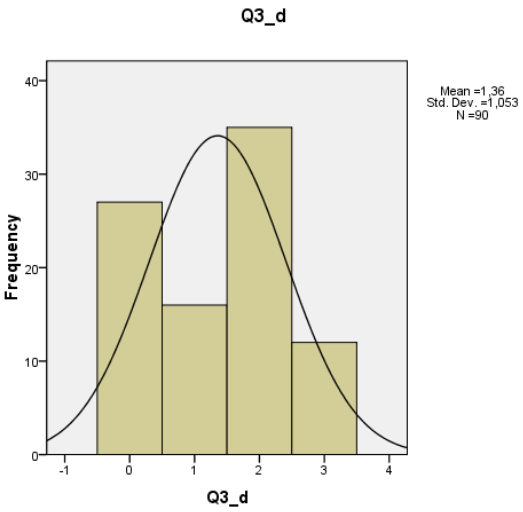
The findings of research question 2 show that many pupils (37.8%) often use mobile phones for learning English.

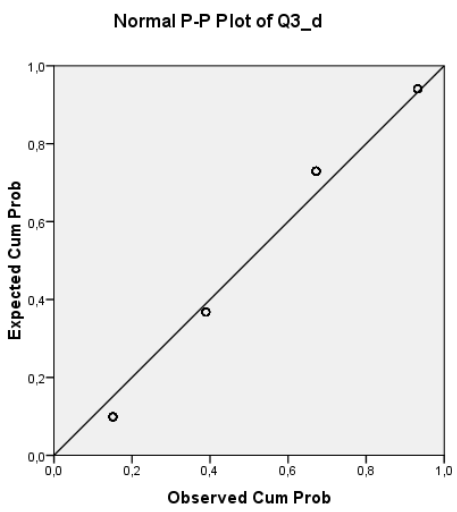
Research Question 3

Table Q3(d) is: **Which of the given functions of mobile phones do you use in your daily life?**

Frequency Table

Table Q3d shows that out of 100 % respondents 38,9 % pupils sometimes listen to different audio materials in daily life.





As we can see in both figures the assumption of normality for the population from which the response results are sampled is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure “Normal P-P Plot”.

Findings of research question 3 show that many pupils (38.9%) sometimes listen to different audio materials in daily life.

Detailed work for each question you can find in the file called "Thesis report/School Pupils" in attached CD.

4.3.2 Analysis of the quantitative data: questionnaire for students

The results of this survey have been described quantitatively. The students' questionnaire contains 14 questions with 12 closed items and two open-ended items and each question item is responded to with scales such as 0/1/2/3/ never, rarely, sometimes, often and 0/1/2-yes, not sure, no.

Background of Students

Table 1 shows the background information about the students. The current data has been collected from different universities of Yerevan that are selected at random. The students that have been selected for the current sampling are students at the age of 17 to 39. 80 students from different universities answered the questions (see appendix Table 1).

Table 2 shows that out of 100% participants 10 % students are from Acharyan University, 26,2 % are from AUA, 13,8 % are from Eurasia University, 8,8 % are from Haybusak University, 8,8 % are from Mashtots, 18,8 % are from Pedagogical University and 13,8 % are from State University (see appendix Table 2).

Pie Chart

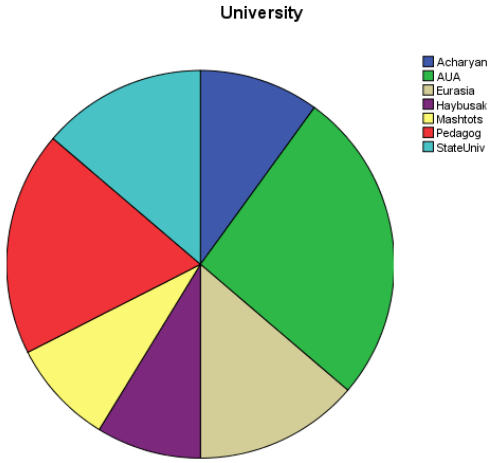


Table 3 shows that out of 100 % students are from English department (see appendix Table 3).

Pie Chart

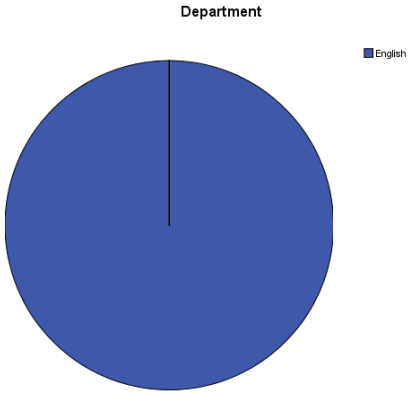


Table 4 shows that out of 100 % participants 43,8 % students are 2 year students, 30% students are 3 year students and 26,2 % students are 4 year students(see appendix Table 4).

Pie Chart

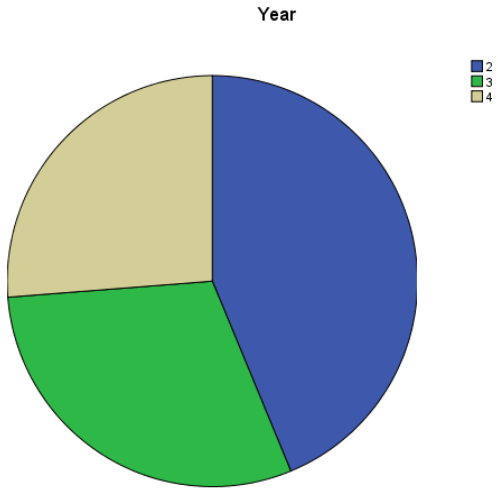


Table 5 shows that students are from different ages: from 17 to 39 (see appendix Table 5).

Pie Chart

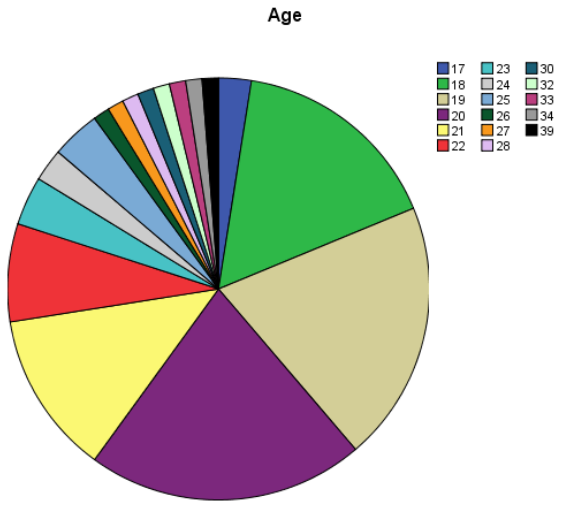


Table 6 shows that 100 % students are female(see appendix Table 6).

Pie Chart

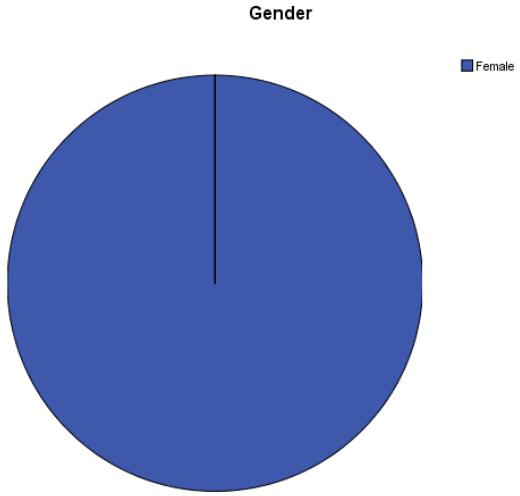


Table 7 shows that 100 % pupils' foreign language is English (see appendix Table 7).

Pie Chart

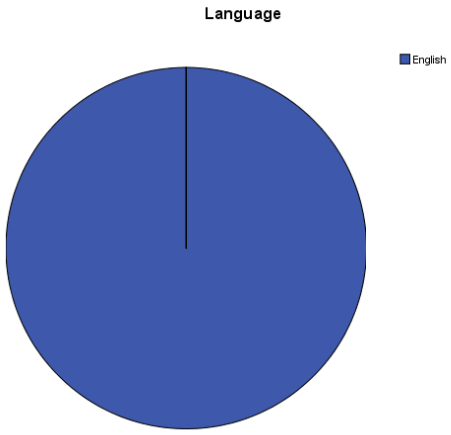
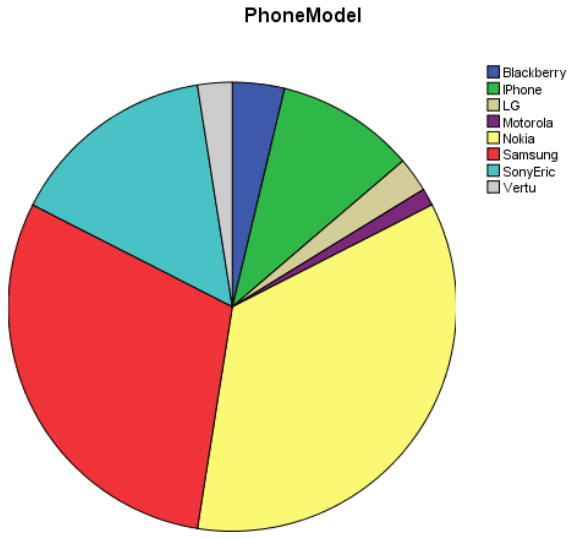


Table 8 shows that out of 100 % participants 3,8 % students use Blackberry, 10 % students use IPhone, 2,5 % students use LG, 1,2 % students use Motorola, 35 % students use Nokia, 30 % students use Samsung and 15 % students use Sony Ericson and 2,5 students use Vertu (see appendix Table 8).

Pie Chart

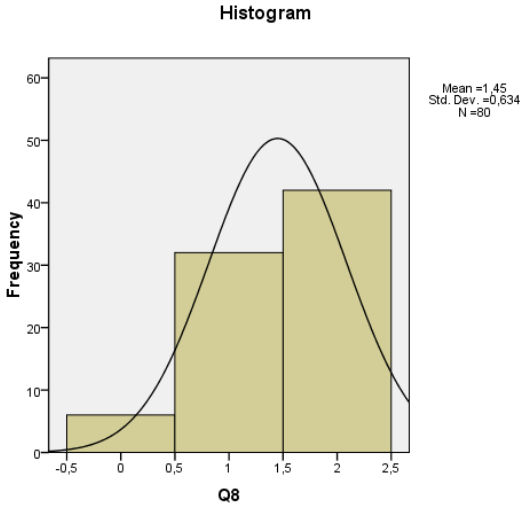


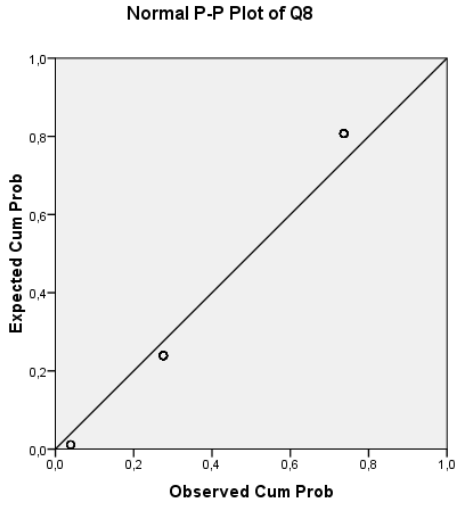
Research Question 1

How feasible is the use of mobile phones for teaching and learning English in Armenian High Schools and Universities?

Table Q8 is: **Do you think mobile phones could help you improve your English?**

Table Q8a shows that out of 100 % respondents 52,5 % students think mobile phones could help them improve their English, 40 % students are not sure of that and 7,5 % students gave a negative answer (see appendix Table Q8).





As we can see in both figures the assumption of normality for the population from which the response results are sampled is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure "Normal P-P Plot".

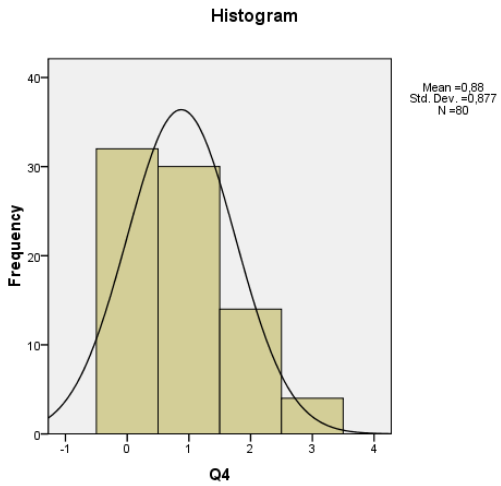
The findings of research question 1 show that many students (52.5%) are using mobile phones and are thinking that mobile phones can help them improve their English.

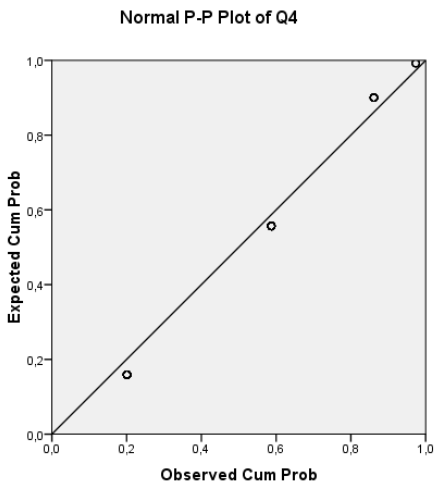
Research Question 2

To what extent Mobile Phones are currently being used for language learning and teaching purposes?

Table Q4: Do you use mobile phones for learning English?

Table Q4a shows that out of 100 % respondents 40 % students never use mobile phones for learning English, 37,5 % students rarely use, 17,5 % students sometimes use and only 5 % students often use (see appendix Table Q4a).





As we can see in both figures that the assumption of normality for the population from which the response results are sampled, wouldn't be far from reality. As it can be concluded, the collected data are normally distributed shown in the Normal P-P Plot.

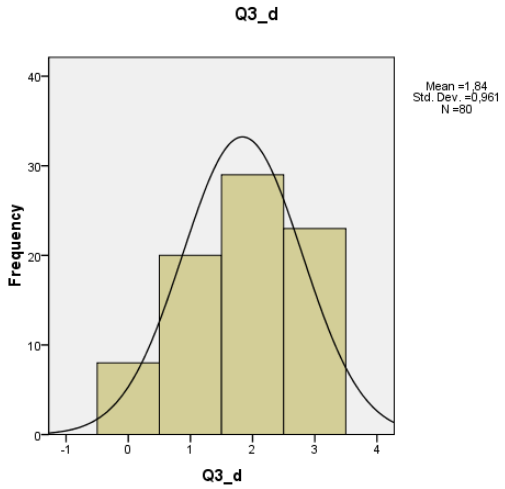
Findings of research question 2 show that many students (40%) often use mobile phones for learning English.

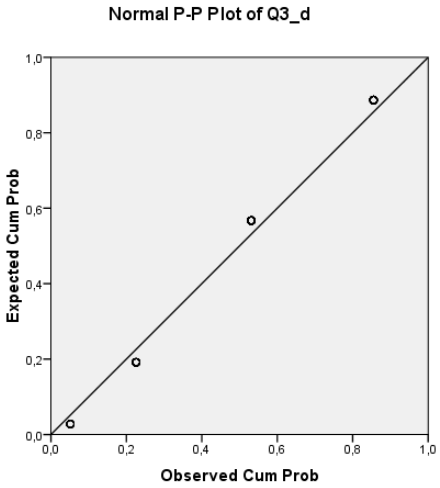
Research Question 3

How do pupils/students and teachers/instructors use mobile phones in their daily life?

Table Q3 (d): **Which of the given functions of mobile phones do you use in your daily life?**

Table Q3d shows that out of 100 % respondents 36,2 % students sometimes listen to different audio materials in daily life(see appendix Table Q4a).





As we can see in both figures the assumption of normality for the population from which the response results are sampled is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure “Normal P-P Plot”.

Detailed work for each question you can find in the file called "Thesis Report/University Students".

4.3.3 Analysis of the quantitative data: questionnaire for teachers

The results of this survey have been described quantitatively. The teachers' questionnaire contains 12 questions with 10 closed items and 2 open-ended items and each question item is responded to with scales such as 0/1/2/3/ never, rarely, sometimes, often and 0/1/2-yes, not sure, no.

Background of teachers

Table 1 shows the background information about the teachers. The current data has been collected from different high schools of Yerevan that are selected at random. The teachers that have been selected for the current sampling are teachers of at the age of 23 to 56. 16 teachers from different high schools answered the questions.

Table 2 shows that out of 100% participants 6,2 % teachers are from N114 high school, 18,8 % teachers are from N119, 18,8 % teachers are from N159, 12,5 % teachers are from N170, 12,5 % teachers are from N190, 12,5% teachers are from N29, 6,2 % teachers are from N83 and 12,5 % teachers are from Quantum (see appendix Table Q2).

Pie Chart

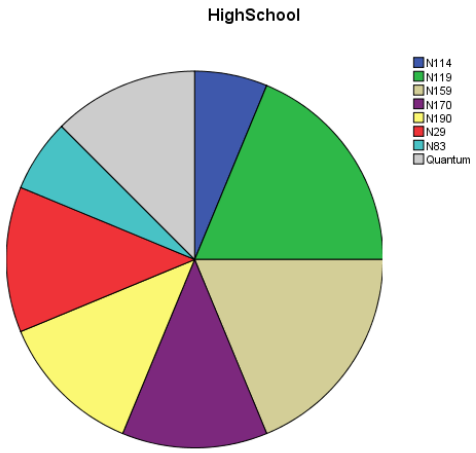


Table 3 shows that 100% teachers have a high education (see appendix Table Q3).

Pie Chart

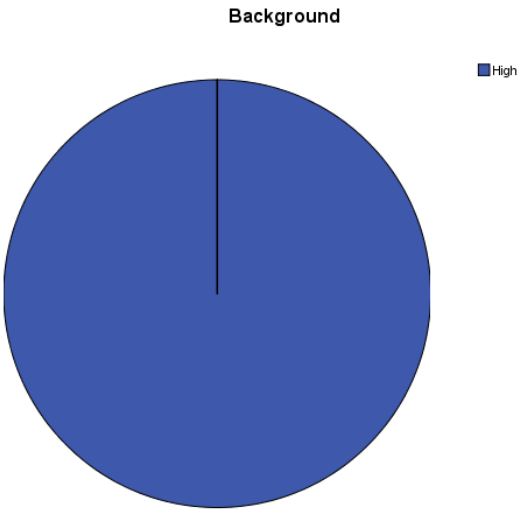


Table 4 shows teachers are at the age of 23 to 56(see appendix Table Q4).

Pie Chart

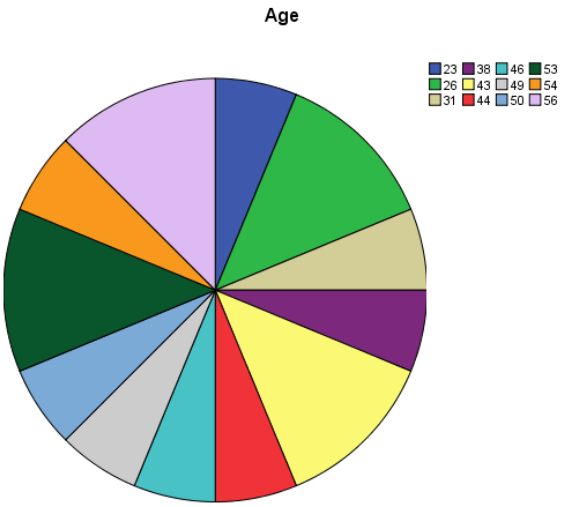


Table 5 shows that 100 % teachers are female (see appendix Table Q5).

Pie Chart

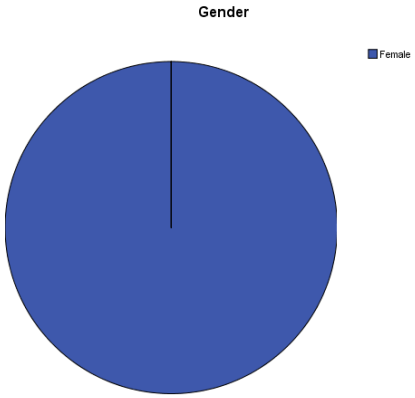


Table 6 shows that 100 % teachers' foreign language is English.

Pie Chart

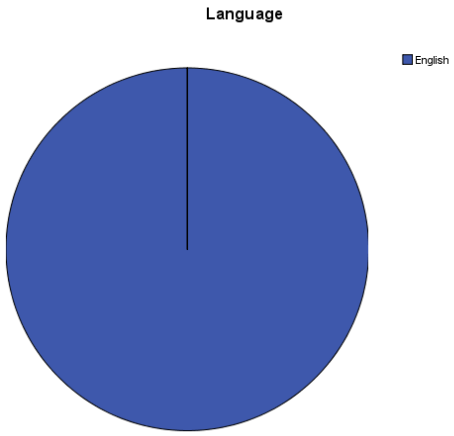
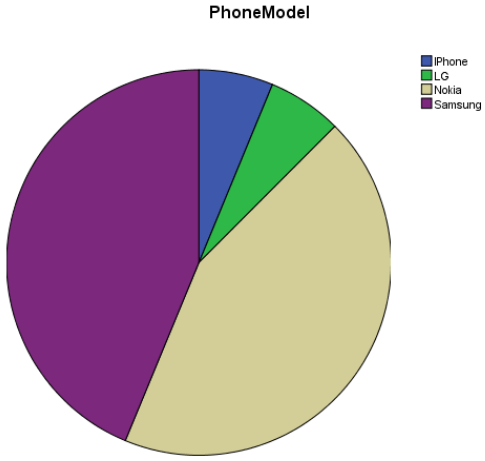


Table 7 shows that out of 100 % participants 6,2 % teachers use IPhone, 6,2 % teachers use LG, 43,8 % teachers use Nokia, 43,8 % teachers use Samsung (see appendix Table Q7).

Pie Chart

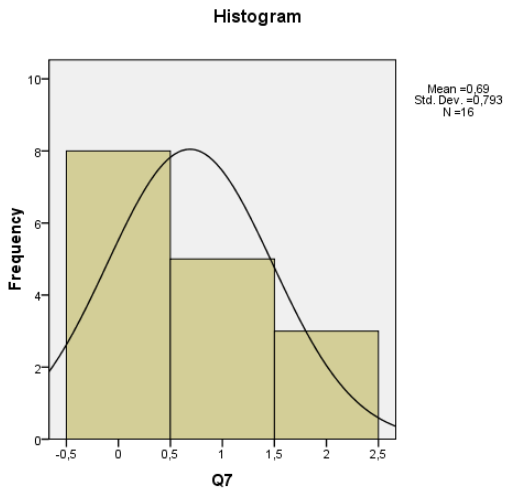


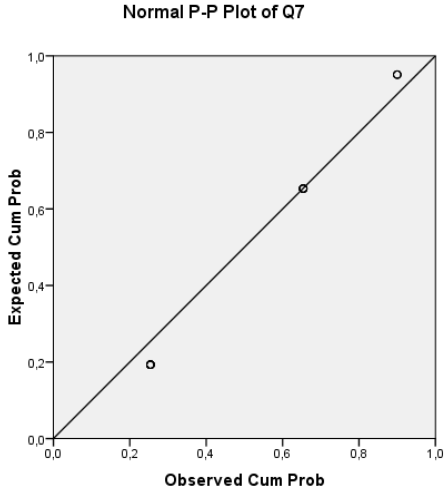
Research Question 1

How feasible is the use of mobile phones for teaching and learning English in Armenian High Schools and Universities?

Table Q7 is: **Do you think mobile phones could help you improve your pupils'/students' English?**

Table Q7a shows that out of 100 % respondents 50 % teachers think mobile phones could not help them improve their English, 31,2 % teachers are not sure of that and 18,8 % teachers gave a positive answer (see appendix Table Q7a).





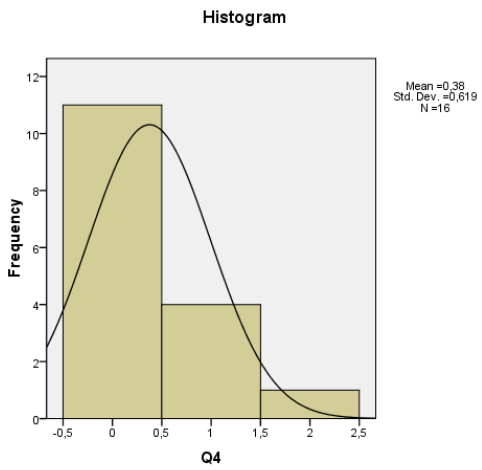
As we can see in both figures the assumption of normality for the population from which the response results are sample is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure "Normal P-P Plot".

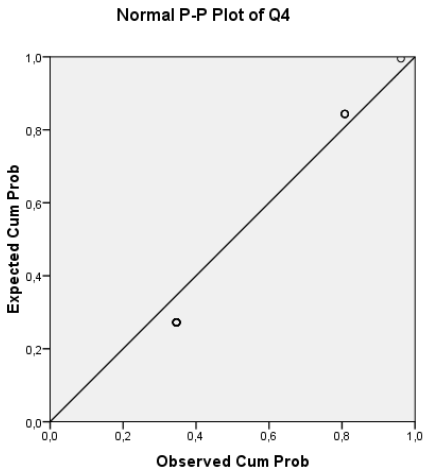
Research Question 2

Table Q4 is**: Do you use mobile phones for teaching English?**

Frequency Table

Table Q4a shows that out of 100 % respondents 68,8 % teachers never use mobile phones for teaching English (see appendix Table Q4a).





As we can see in both figures the assumption of normality for the population from which the response results are sampled is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure "Normal P-P Plot".

Research Question 3

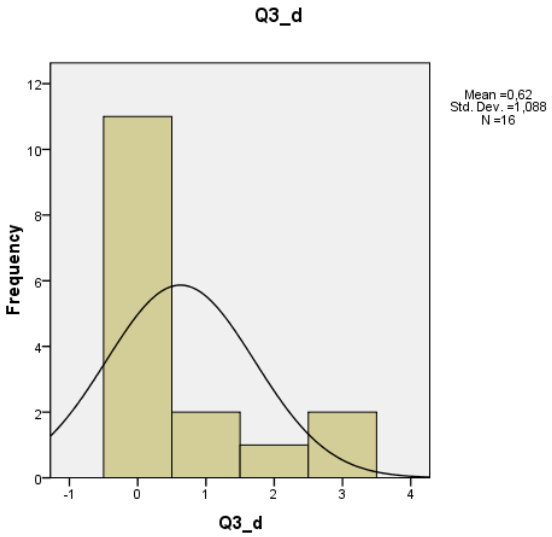
How do pupils/students and teachers/instructors use mobile phones in their daily life?

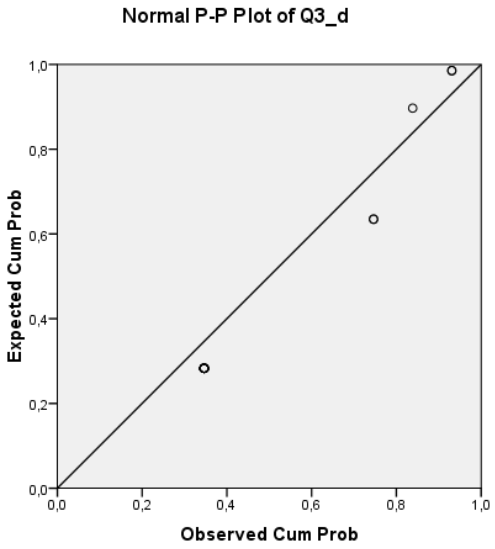
Table Q3(d) is: **Which of the given functions of mobile phones do you use in your daily life?**

Table Q3a shows that out of 100 % respondents 81,2 % teachers never play mobile games in daily life (see appendix Table Q3a).

.

Table Q3d shows that out of 100 % respondents 68,8 % teachers never listen to different audio materials in daily life (see appendix Table Q3d).





As we can see in both figures the assumption of normality for the population from which the response results are sampled is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure “Normal P-P Plot”.

Detailed work for each question you can find in the file called "Thesis Report/School Teachers" in attached CD.

4.3.4 Analysis of the quantitative data: questionnaire for instructors

The results of this survey have been described quantitatively. The instructors' questionnaire contains 12 questions with 10 closed items and 2 open-ended items and each question item is responded to with scales such as 0/1/2/3/ never, rarely, sometimes, often and 0/1/2-yes, not sure, no.

Background of instructors

Table 1 shows the background information about the instructors. The current data has been collected from different universities of Yerevan that are selected at random. The instructors that have been selected for the current sampling are instructors at the age of 24 to 54. 16 teachers from different universities answered the questions.

Table 2 shows that out of 100% participants 12,5 % instructors are from Acharyan, 16,7 % instructors are from AUA, 16,7 % instructors are from Eurasia University, 8,3 % instructors are from Haybusak University, 12,5 % instructors are from Mashtots, 20,8 % instructors are from Pedagogical University, 12,5 % instructors are from State University (see appendix Table Q2).

Pie Chart

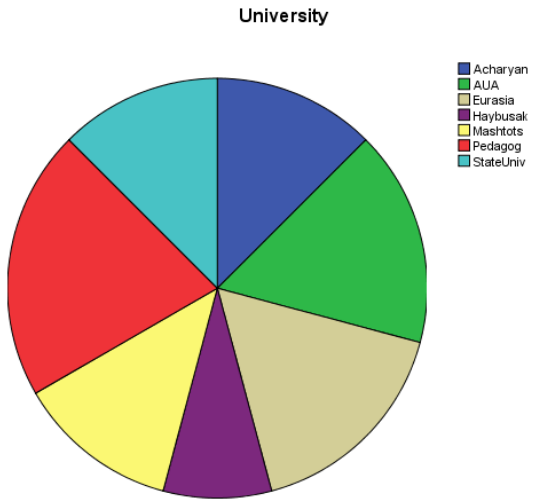


Table 3 shows that 100 % instructors are from English department (see appendix Table Q3).

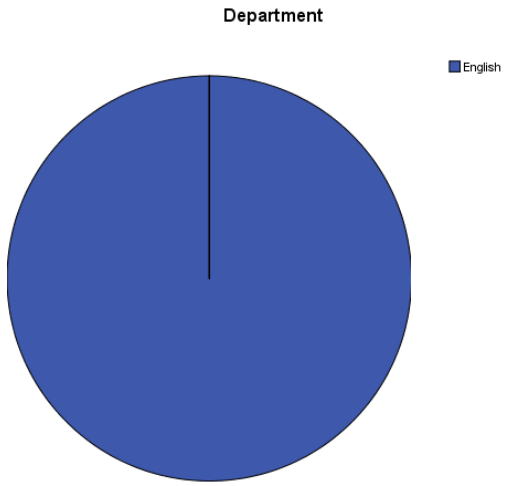


Table 4 shows that 100% teachers have a high education (see appendix Table Q4).

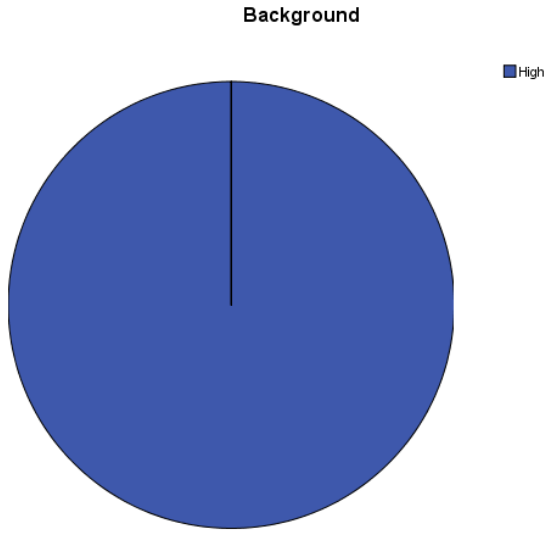


Table 5 shows teachers are at the age of 24 to 54 (see appendix Table Q5).

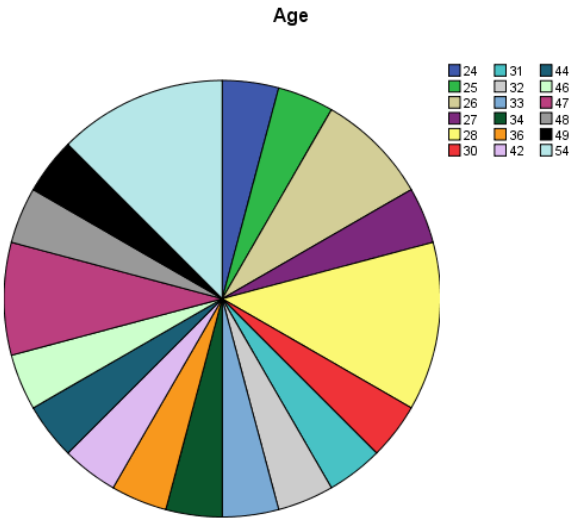


Table 6 shows that 100 % teachers are female (see appendix Table Q6).

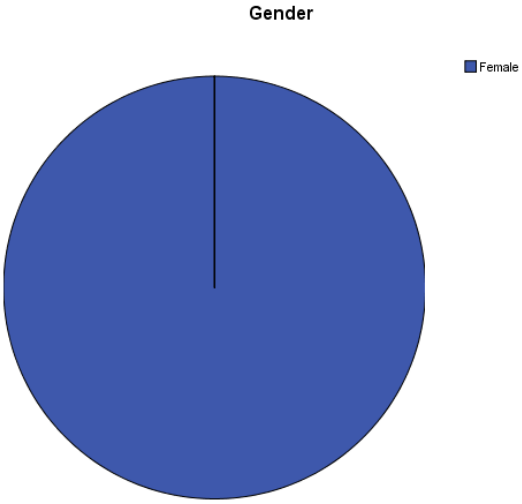


Table 7 shows that 100 % teachers' foreign language is English (see appendix Table Q7).

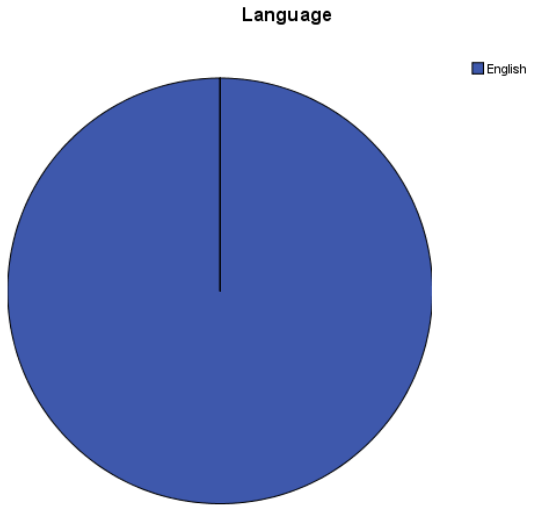
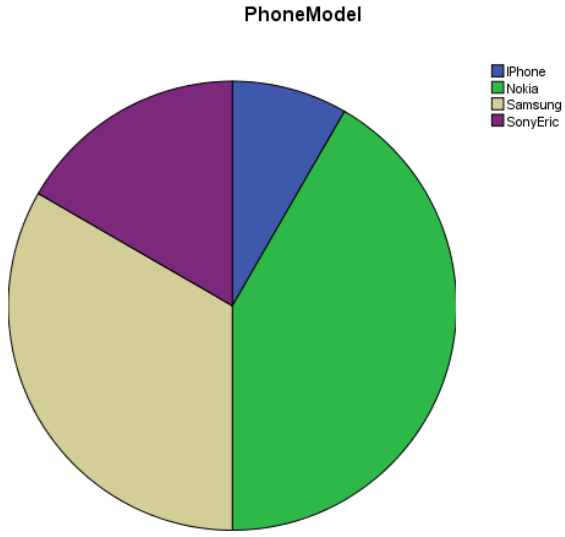


Table 8 shows that out of 100 % participants 8,3 % instructors use IPhone, 41,7 % instructors use Nokia, 33,3 % instructors use Samsung, 16,7 % instructors use Sony Ericson (see appendix Table Q8).

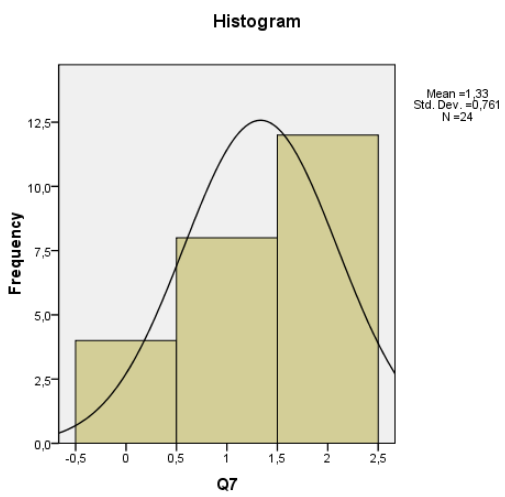


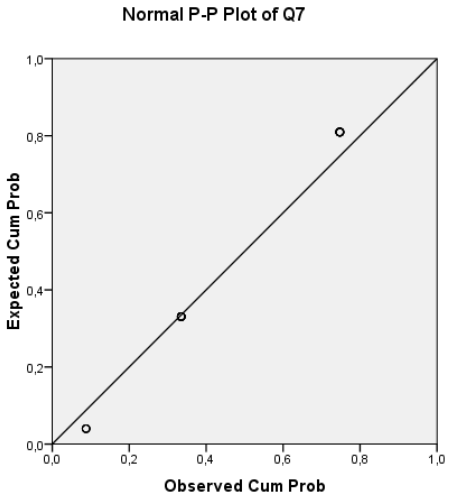
Research Question 1

How feasible is the use of mobile phones for teaching and learning English in Armenian High Schools and Universities?

Table Q7 is: **Do you think mobile phones could help you improve your pupils'/students' English?**

Table Q7a shows that out of 100 % respondents 50 % instructors think mobile phones could not help them improve their English, 33,3 % instructors are not sure of that and 16,7 % instructors gave a positive answer (see appendix Table Q7a).





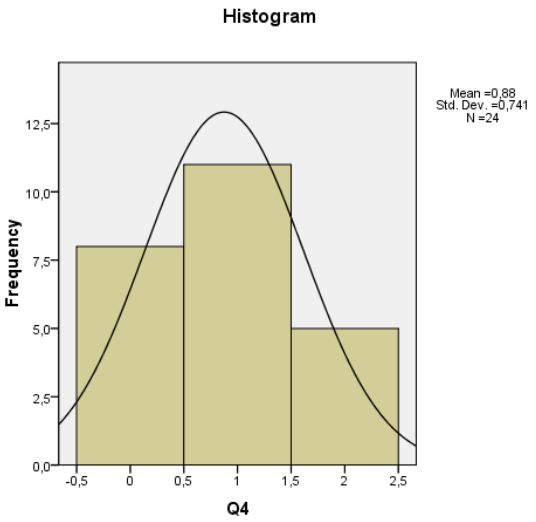
As we can see in both figures the assumption of normality for the population from which the response results are sampled is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure "Normal P-P Plot".

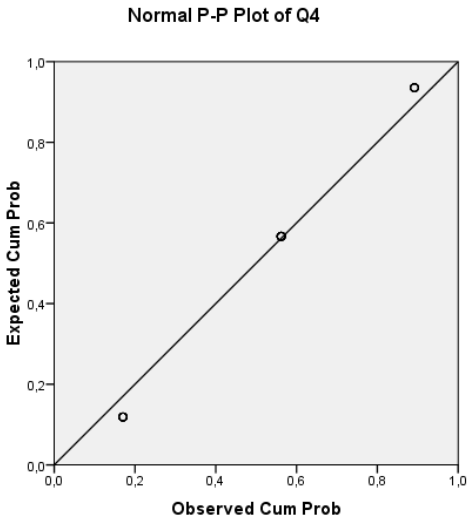
Research question 2

To what extent Mobile Phones are currently being used for language learning and teaching purposes?

Table Q4 is**: Do you use mobile phones for teaching English?**

Table Q4a shows that out of 100 % respondents 45,8 % instructors never use mobile phones for teaching English (see appendix Table Q4a).





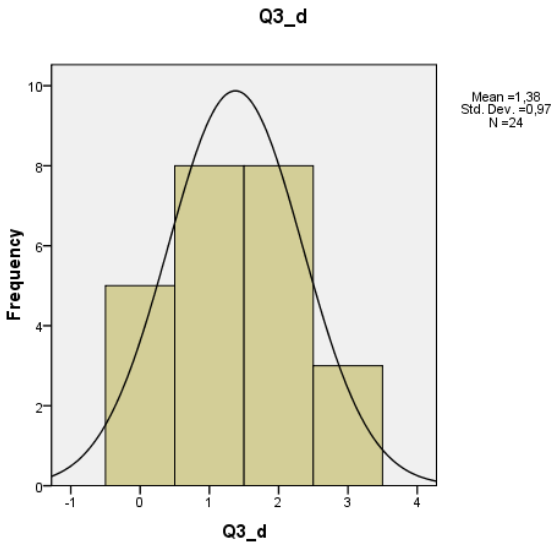
As we can see in both figures the assumption of normality for the population from which the response results are sampled is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure "Normal P-P Plot".

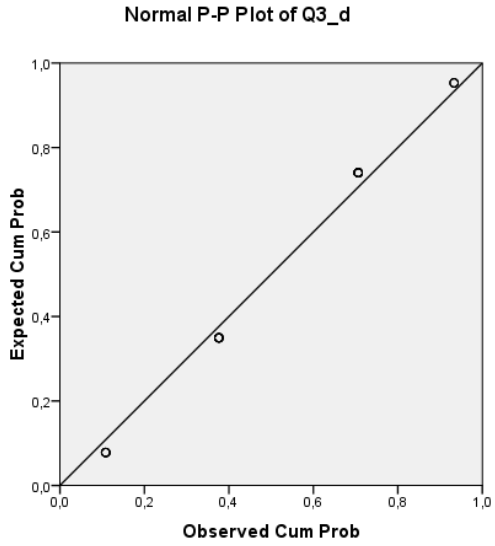
Research Question 3

How do pupils/students and teachers/instructors use mobile phones in their daily life?

Table Q3(d) is: **Which of the given functions of mobile phones do you use in your daily life?**

Table Q3d shows that out of 100 % respondents 20,8 % instructors never listen to different audio materials in daily life, 33,3% instructors rarely do it, 33,3% instructors sometimes do it and 12,5% instructors often listen to different audio materials in daily life(see appendix Table Q3d).





As we can see in both figures the assumption of normality for the population from which the response results are sampled is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure “Normal P-P Plot”.

Detailed work for each question you can find in the file called "Thesis Report/University Instructors" in attached CD.

4.4 Hypotheses and Statistical Inferences

4.4.1 Introduction

The hypothesis tested in this survey research is:

"Mobile Phones are currently being used for language learning and teaching purposes in Armenian High Schools and Universities"

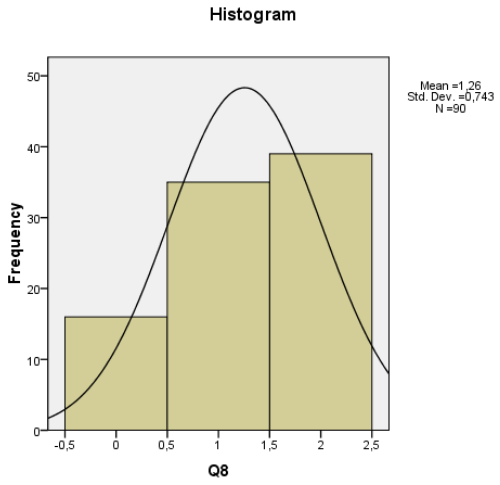
This research hypothesis provides the basis for using statistical inference to decide whether our hypotheses are supported by the results we obtain from our tests (L. F. Bachman, 2008, p. 213).

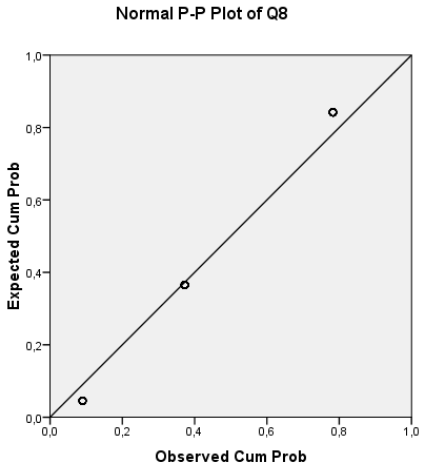
4.4.2 Sampling distribution: Normality Assumption

A normality test is a statistical process used to determine if a sample or any group of data fits a standard normal distribution. A normality test can be performed mathematically or graphically. Using SPSS package the graph of probability plot is constructed. If the selected variable matches the test distribution, the points cluster around a straight line. It means that distribution of data is normally distributed.

In this current survey research histograms and plots are also used to show a visual impression of the distribution of data. The Histogram analysis tool calculates individual and cumulative frequencies for a cell range of data and data bins. This tool generates data for the number of occurrences of a value in a data set (L. F. Bachman, 2008).

Plots are variable's cumulative proportions against the cumulative proportions of any of a number of test distributions. Probability plots are generally used to determine whether the distribution of a variable matches a given distribution. If the selected variable matches the test distribution, the points cluster around a straight line (L. F. Bachman, 2008).





As we can see in both figures the assumption of normality for the population from which the response results are sampled is not far from reality. As it can be concluded, the collected data are normally distributed shown in the figure "Normal P-P Plot".

BestFit

BestFit allows fitting probability distributions to our data. Fitting is done when we have a set of collected data that we want describe using a theoretical distribution function. For this project we collected real life data on a product daily output in order to create distribution of possible future outcomes based on this data.

BestFit provides four types of graphs to help us visually assess the quality of our fits. A comparison graph superimposes the input data and fitted distribution on the same graph, allowing us to visually compare them either as density or cumulative curves. This graph allows us to determine if the Fitted distribution matches the input data in specific areas.

According to provided Graphs, the Triangle distribution was selected to be used in the Risk Model. For each fit, Best Fit reports one or more fit statistics. These statistics measure how good the distribution fits the input data and how confident we can be that the data was produced

by the distribution function. For each of these statistics the logic is the smaller the value, the better the fit.

Looking at the charts (see appendix Figure 1) we can see that in expon is the best fit to the current data and normal distribution is in the seventh place, however, it means that normal distribution is not rejected by the Goodness of Fit Test. We can assume that analysis is done based on normal destribution.

See Best Fit Distribution file for all questions in "Thesis Report" file.

4.4.3 Hypotheses Tests

To test the significance of the difference between two sample variables, it is referred to as the F-test. **Hypothesis test** - Hypothesis testing refers to the process of using statistical analysis to determine if the observed differences between two or more samples are due to random chance (as stated in the null hypothesis) or to true differences in the samples (as stated in the alternate hypothesis).

A null hypothesis (H0) is a stated assumption that there is no difference in parameters (mean, variance) for two or more populations. The alternate hypothesis (Ha) is a statement that the observed difference or relationship between two populations is real and not the result of chance or an error in sampling. Hypothesis testing is the process of using a variety of statistical tools to analyze data and, ultimately, to fail to reject or reject the null hypothesis. From a practical point of view, finding statistical evidence that the null hypothesis is false allows you to reject the null hypothesis and accept the alternate hypothesis (L.F. Bachman, 2008).

4.4.4 F_Test (Fisher's test) and T_Test (two-sample assuming equal variances)

An F-test is used to test if the standard deviations of two populations are equal.

The F hypothesis test is defined as:

H_0: $\sigma_1 = \sigma_2$

H_a: $\sigma_1 \neq \sigma_2$

Test Statistic: $\mathbf{F} = s_1^2 / s_2^2$

where s_1^2 and s_2^2 are the sample variances. The more this ratio deviates from 1, the stronger the evidence for unequal population variances.

Significance Level: α

Rejection Region: The hypothesis that the two standard deviations are equal is rejected if

$$F > F_{(\alpha/2, N1-1, N2-1)}$$

where $F_{(\alpha, k-1, N-k)}$ is the critical value of the F distribution with ν_1 and ν_2 degrees of freedom and a significance level of α.

H_0: σ^2pupils=σ^2students

H_a: σ^2pupils≠σ^2students

F-Test Two-Sample for Variances

Mean	1.247191	1.455696
Variance	0.551839	0.405063
Observations	89	79
df	88	78
F	1.362352	
P(F<=f) one-tail	0.082226	
F Critical one-tail	1.442174	

From this output we see that F=1.362352 is not greater from F critical = 1.442174, it means we can't reject the H_0, hence the corresponding variances are equal.

6 times applying the F test following outputs are getting:

Q8 σ^2 sch_pupils = σ^2 univ_stud

Q7 σ^2 sch_teacher ≠ σ^2 univ_instr

Q4 σ^2 sch_pupils ≠ σ^2 univ_stud

Q4 σ^2 sch_teacher ≠ σ^2 univ_instr

Q3d σ^2 sch_pupils = σ^2 univ_stud

Q3d σ^2 sch_teacher = σ^2 univ_instr

Variance - The sum of the squared deviations of n measurements from their mean divided by (n-1). The deviation from what was expected. The next step is to know whether variances of levels are equal or not. This is necessary for determining the way of comparing means. For this

reason the Fisher's test (F- test) is used. F-test is used to test if the significance of the difference between two sample variables (L. F. Bachman, 2008, p. 236)

Theory

F_test (Fisher's test)

H_0: $\sigma_1 = \sigma_2$

H_a: $\sigma_1 \neq \sigma_2$ for a two tailed test

Test Statistic: F = s_1^2 / s_2^2

Significance Level: a

Rejection region: If $F > F_{(\alpha/2, N1-1, N2-1)}$ reject H_0

TESTS

F_test (Fisher's test)

	Sch_Pupils	Univ_Stud
Q8	F-Test Two-Sample for Variances	
	2	*1*
Mean	1,247191	1,455696

Variance	0,551839	0,405063
Observations	89	79
df	88	78
F	1,362352	
P(F<=f) one-tail	0,082226	
F Critical one-tail	1,442174	

F<F crit then accept Ho (variances are equal)

4.4.5 Comparison of means

Having these results the next step is comparing the means. When we have two groups of different individuals, we can assume that their test scores are independent of each other, and hence the independent or uncorrelated t-test is appropriate. The first step, of course, is to state our hypothesis and decide on a confidence level for rejecting the null hypothesis. Next, we calculate the descriptive statistics and standard errors for two groups and check the distributional assumptions for using the t-test (L. F. Bachman, 2008, p. 237).

Theor

y

T_Test (two-sample assuming equal variances)

Student's test

Right sided hypothesis testing

Two sided hypothesis testing

H_0: μ1=μ2

H_0: μ1=μ2

H_a: μ1>μ2

Test

Statistic: $$T = \frac{\bar{x} - \bar{y}}{s_p \cdot \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Significance

Level: a

Rejection

region: If T>t_a reject H_0

H_a: μ1≠μ2

Test

Statistic: $$T = \frac{\bar{x} - \bar{y}}{s_p \cdot \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Significance

Level: a

Rejection

$|T| > t_{\alpha/2}$ rejec

region: If t H_0

T_Test (two-sample assuming unequal variances)

Smith Satterthwaite's test

Right sided hypothesis testing

H_0: μ1=μ2

H_a: μ1>μ2

Test

Statistic: $$T = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{s_{01}^2}{n_1} + \frac{s_{02}^2}{n_2}}}$$

Significance

Level: a

Rejection

region: If T>t_a reject H_0

Two sided hypothesis testing

H_0: μ1=μ2

H_a: μ1≠μ2

Test

Statistic: $$T = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{s_{01}^2}{n_1} + \frac{s_{02}^2}{n_2}}}$$

Significance

Level: a

Rejection

$|T| > t_{\alpha/2}$ rejec

region: If t H_0

TESTS

If variances are equal we use Student's test for comparing means.

If variances aren't equal we use Smith Satterthwaite's test for comparing means.

	Sch_Pupils	Univ_Stud
Q8		

(variances are equal)

T_Test (two-sample assuming equal variances)

Student's test

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*		
Mean	1,255556	1,45		
Variance	0,551935	0,402532		
Observations	90	80		
Pooled Variance	0,48168			
Hypothesized Mean Difference	0			
df	168			
t Stat	-1,8233			
P(T<=t) one-tail	0,035018			
t Critical one-tail	1,653974			
P(T<=t) two-tail	0,070035		>0.05	then means are equal
t Critical two-tail	1,974185		>1.823	then means are equal

Other tests you can find in MS Excel file: “Hypothesis tests”.

T_Test (two-sample assuming equal variances)

Student's test

Right sided hypothesis testing

H_0: μ1=μ2

H_a: μ1>μ2

Test Statistic:

$$T = \frac{\bar{x} - \bar{y}}{s_p \cdot \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Significance Level: a

Rejection region: If $T > t_a$ reject H_0

Two sided hypothesis testing

H_0: μ1=μ2

H_a: μ1≠μ2

Test Statistic:

$$T = \frac{\bar{x} - \bar{y}}{s_p \cdot \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Significance Level: a

Rejection region: If $|T| > t_{\alpha/2}$ reject H_0

T_Test (two-sample assuming unequal variances)

Smith Satterthwaite's test

Right sided hypothesis testing

H_0: μ1=μ2

H_a: μ1>μ2

Test

Statistic:

$$T = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{s_{01}^2}{n_1} + \frac{s_{02}^2}{n_2}}}$$

Significance

Level: a

Rejection

region: If $T > t_a$ reject H_0

Two sided hypothesis testing

H_0: μ1=μ2

H_a: μ1≠μ2

Test

Statistic:

$$T = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{s_{01}^2}{n_1} + \frac{s_{02}^2}{n_2}}}$$

Significance

Level: a

Rejection

region: If $|T| > t_{\alpha/2}$ reject H_0

4.4.6 Bar Graphs

If we use bar graphs while comparing means we can the difference between pupils and students. From Q8 bar graph we can see that students think mobile phones could help them improve their English more than pupils do. Bar Graph Q4 shows that pupils use mobile phones for learning English more than students do. Bar Graph Q3d shows that students listen to different audio materials on mobile phones in their daily life (see appendix: figure Q8, Q4,Q3d).

Other bar graphs u can find in the file called ‘Comparison of Means' in attached CD.

Chapter 5 Conclusions, Limitations, Implications/Applications and Recommendations for Further Research

5.1 Conclusion

This current survey research has been conducted to find out whether MALL: Mobile Assisted Language Learning, particularly the use of mobile phones is feasible for teaching and learning English in Armenian high schools and universities and to what extent mobile phones are currently being used for teaching and learning English in Armenia.

The participants were pupils/students and teachers/instructors. The data of the questionnaires were analyzed quantitatively. Students' answers to the 0/1/2/3 and 0/1/2/ scale questionnaires were entered into the Statistical Packages for Social Sciences (SPSS 16.0) and Microsoft office Excel 2007.

Based on the answers of the research questionnaires data were analyzed and descriptive statistics shows that the number of pupil/students and teachers/instructors interested in using mobile phones for language learning/teaching is high and analyzing the data we found out that data collected from the participants are normally distributed. In order to be convinced best fit tools were used which ranked the distributions which fit our data. And often among the ranks normal distribution appeared and we follow our analysis based on normal distribution.

Then schools and universities were compared; particularly the comparison was between pupils and students and teachers and instructors. The results we compared means and variances among pupils and students using hypothesis tests shows that in Armenian high schools and universities pupils/students and teachers/instructors are using mobile phones for language learning /teaching purposes. The hypotheses are accepted, not rejected.

Data was analyzed through F-test (Fisher's test) and T-Test (two-sample assuming

equal variances) Student Test and T-Test (two-sample assuming unequal variances) Smith Satterthwaite's test.

In order to compare the variances of groups: pupils vs. students, teachers vs. instructors, t-test is used in order to compare the means of the groups.

If variances are equal we use Student's test for comparing means.

If variances aren't equal we use Smith Satterthwaite's test for comparing means.

In the results of hypotheses tests, we have found that there is not significance between the means among the groups of schools and universities or the mean of data for university is higher than in school case.

5.2 Limitations of the Survey Study

There are some limitations for this study that should be mentioned. The most important limitation is that the research was done among the students of the English departments. The other limitation that is worth mentioning was limited number of teachers/instructors. This number was less than the threshold level of 30. One of the limitations might also be the duration of the treatment. As mentioned in the previous chapters, the research was done only during 4 weeks.

The conclusions were made based on the results of questionnaires. 4 weeks are not enough to come to any kind of certain conclusion and the instruments used were not enough to collect data that are more valid and were not enough to bring any kind of generalizations.

5.3 Applications and Implications

The survey research implies that mostly the means of universities are higher or there is not significance between the means among the groups of schools and universities or the mean of data for university is higher than in school case.

Thus, those universities or schools that have mobile technological facilities may apply MALL: Mobile Phones for learning and teaching English purposes. Moreover, taking into consideration the fact that current attempts of using MALL: Mobile Phones in the traditional systems will result in changes in the methodology in Armenian EFL settings. Therefore, demands for supplementary ways of teaching English in this case through MALL: Mobile Phones will increase.

5.4 Recommendations for Further Research

Taking into consideration the above mentioned limitations it would be indispensable to carry out further research on the area of Call. Moreover, it will be better even to replicate this study taking into consideration the recommendations that are provided below.

1. Research be done in other departments of the universities
2. To use multiple instruments in collecting data
3. To do a longitudinal research
4. To have more participants involved in the research
5. To have better trained teachers for implementing MALL
6. To research not only among Universities and High Schools of Yerevan but also among whole Armenia

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Appendices

Appendix C: List of Tables:

The participants (pupils/students) of the current survey were:

Number of Pupils	Year	High School	Number of Students	Year	University
16 16	8th 10th	Quantum	3 4	2nd 3rd	Mashtots
14	10th	N119	11	2nd	Eurasia
7	10th	N83	7	2nd	Haybusak
8	10th	N 190	22	2nd	AUA
7	11th	N 29	7 8	3rd 4th	Pedagogical
7	8th	N 170	3 8	3rd 4th	State Univ.
9	10th	N 114	3 5	3rd 4th	Acharyan
6	11th	N 159			

The participants (teachers/instructors) of the current survey were:

Number of Teachers	High School	Number of Instructors	University
2	Quantum	3	Mashtots
3	N 119	4	Eurasia
1	N 83	2	Haybusak
2	N 190	5	Pedagogical
2	N 29	3	State Univ.
2	N 170	3	Acharyan
1	N 114	4	AUA
3	N 159		

Statistics

		HighSchool	Year	Age	Gender	Language	PhoneModel
N	Valid	90	90	90	90	90	90
	Missing	0	0	0	0	0	0
Mean			9,63	14,28			
Median			10,00	15,00			
Mode			10	15			
Std. Deviation			1,022	,948			
Variance			1,044	,900			
Range			3	4			
Minimum			8	12			
Maximum			11	16			

Table 1

Frequency Table

HighSchool

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	N114	9	10,0	10,0	10,0
	N119	14	15,6	15,6	25,6
	N159	6	6,7	6,7	32,2
	N170	7	7,8	7,8	40,0
	N190	8	8,9	8,9	48,9
	N29	7	7,8	7,8	56,7
	N83	7	7,8	7,8	64,4
	Quantum	32	35,6	35,6	100,0
	Total	90	100,0	100,0	

Table 2

Frequency Table

Year

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	8	23	25,6	25,6	25,6
	10	54	60,0	60,0	85,6
	11	13	14,4	14,4	100,0
	Total	90	100,0	100,0	

Table 3

Frequency Table

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12	2	2,2	2,2	2,2
	13	21	23,3	23,3	25,6
	14	21	23,3	23,3	48,9
	15	42	46,7	46,7	95,6
	16	4	4,4	4,4	100,0
	Total	90	100,0	100,0	

Table 4

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	41	45,6	45,6	45,6
	Male	49	54,4	54,4	100,0
	Total	90	100,0	100,0	

Table 5

Frequency Table

Language

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	90	100,0	100,0	100,0

Table 6

Frequency Table

PhoneModel

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	IPhone	4	4,4	4,4	4,4
	LG	5	5,6	5,6	10,0
	Motorola	5	5,6	5,6	15,6
	Nokia	40	44,4	44,4	60,0
	Samsung	26	28,9	28,9	88,9
	SonyEric	9	10,0	10,0	98,9
	Vertue	1	1,1	1,1	100,0
	Total	90	100,0	100,0	

Table 7

Statistics

Q8

N	Valid	90
	Missing	0
Mean		1,26
Median		1,00
Mode		2
Std. Deviation		,743
Variance		,552
Range		2
Minimum		0
Maximum		2

Table Q8

Frequency Table

Q8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	17,8	17,8	17,8
	Not Sure	35	38,9	38,9	56,7
	Yes	39	43,3	43,3	100,0
	Total	90	100,0	100,0	

Table Q8a

Statistics

Q4

N	Valid	90
	Missing	0
Mean		1,10
Median		1,00
Mode		0
Std. Deviation		1,071
Variance		1,147
Range		3
Maximum		3

Table Q4

Frequency Table

Q4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	34	37,8	37,8	37,8
	Rarely	26	28,9	28,9	66,7
	Sometimes	17	18,9	18,9	85,6
	Often	13	14,4	14,4	100,0
	Total	90	100,0	100,0	

Table Q4a

Statistics

		Q3_a	Q3_b	Q3_c	Q3_d	Q3_e	Q3_f	Q3_g	Q3_h	Q3_i	Q3_j
N	Valid	90	90	90	90	90	90	90	90	90	90
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		1,70	1,16	,83	1,36	1,38	1,34	2,00	2,19	2,12	2,26
Median		2,00	1,00	1,00	2,00	2,00	1,00	3,00	3,00	3,00	3,00
Mode		2	0	0	2	2	2	3	3	3	3
Std. Deviation		1,022	1,121	,951	1,053	,943	1,029	1,254	1,048	1,150	1,076
Variance		1,044	1,256	,904	1,108	,889	1,060	1,573	1,099	1,322	1,159
Range		3	3	3	3	3	3	3	3	3	3
Maximum		3	3	3	3	3	3	3	3	3	3

Table Q3

Frequency Table

Q3_d

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	27	30,0	30,0	30,0
	Rarely	16	17,8	17,8	47,8
	Sometimes	35	38,9	38,9	86,7
	Often	12	13,3	13,3	100,0
	Total	90	100,0	100,0	

Table Q3d

Background of Students

Statistics

		University	Department	Year	Age	Gender	Language	PhoneModel
N	Valid	80	80	80	80	80	80	80
	Missing	0	0	0	0	0	0	0
Mean				2,82	21,19			
Median				3,00	20,00			
Mode				2	20			
Std. Deviation				,823	3,994			
Variance				,678	15,952			
Range				2	22			
Minimum				2	17			
Maximum				4	39			

Table 1

Frequency Table

University

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Acharyan	8	10,0	10,0	10,0
	AUA	21	26,2	26,2	36,2
	Eurasia	11	13,8	13,8	50,0
	Haybusak	7	8,8	8,8	58,8
	Mashtots	7	8,8	8,8	67,5
	Pedagog	15	18,8	18,8	86,2
	StateUniv	11	13,8	13,8	100,0
	Total	80	100,0	100,0	

Table 2

Frequency Table

Department

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	80	100,0	100,0	100,0

Table 3

Frequency Table

Year

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	35	43,8	43,8	43,8
	3	24	30,0	30,0	73,8
	4	21	26,2	26,2	100,0
	Total	80	100,0	100,0	

Table 4

Frequency Table

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17	2	2,5	2,5	2,5
	18	13	16,2	16,2	18,8
	19	16	20,0	20,0	38,8
	20	17	21,2	21,2	60,0
	21	10	12,5	12,5	72,5
	22	6	7,5	7,5	80,0
	23	3	3,8	3,8	83,8
	24	2	2,5	2,5	86,2
	25	3	3,8	3,8	90,0
	26	1	1,2	1,2	91,2
	27	1	1,2	1,2	92,5

	28	1	1,2	1,2	93,8
	30	1	1,2	1,2	95,0
	32	1	1,2	1,2	96,2
	33	1	1,2	1,2	97,5
	34	1	1,2	1,2	98,8
	39	1	1,2	1,2	100,0
	Total	80	100,0	100,0	

Table 5

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	80	100,0	100,0	100,0

Table 6

Frequency Table

Language

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	80	100,0	100,0	100,0

Table 7

Frequency Table

PhoneModel

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Blackberry	3	3,8	3,8	3,8
	IPhone	8	10,0	10,0	13,8
	LG	2	2,5	2,5	16,2
	Motorola	1	1,2	1,2	17,5
	Nokia	28	35,0	35,0	52,5
	Samsung	24	30,0	30,0	82,5

	SonyEric	12	15,0	15,0	97,5
	Vertu	2	2,5	2,5	100,0
	Total	80	100,0	100,0	

Table 8

Statistics

Q8

N	Valid	80
	Missing	0
Mean		1,45
Median		2,00
Mode		2
Std. Deviation		,634
Variance		,403
Range		2
Minimum		0
Maximum		2

Table Q8

Frequency Table

Q8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	7,5	7,5	7,5
	Not Sure	32	40,0	40,0	47,5
	Yes	42	52,5	52,5	100,0
	Total	80	100,0	100,0	

Table Q8a

Statistics

Q4

N	Valid	80
	Missing	0

Mean	,88	
Median		1,00
Mode		0
Std. Deviation	,877	
Variance	,769	
Range		3
Minimum		0
Maximum		3

Table Q4

Frequency Table

Q4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	32	40,0	40,0	40,0
	Rarely	30	37,5	37,5	77,5
	Sometimes	14	17,5	17,5	95,0
	Often	4	5,0	5,0	100,0
	Total	80	100,0	100,0	

Table Q4a

Statistics

		Q3_a	Q3_b	Q3_c	Q3_d	Q3_e	Q3_f	Q3_g	Q3_h	Q3_i	Q3_j
N	Valid	80	80	80	80	80	80	80	80	80	80
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		1,11	1,12	1,24	1,84	1,78	1,70	1,89	1,85	1,98	2,10
Median		1,00	1,00	1,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00
Mode		1	0	0	2	2	2	2[a]	3	2	3
Std. Deviation		,914	1,107	1,117	,961	,954	,999	1,067	1,045	,968	,963
Variance		,835	1,225	1,247	,923	,911	,997	1,139	1,091	,936	,927
Range		3	3	3	3	3	3	3	3	3	3
Minimum		0	0	0	0	0	0	0	0	0	0
Maximum		3	3	3	3	3	3	3	3	3	3

a. Multiple modes exist. The smallest value is

shown Table Q3

Frequency Table

Q3_d

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	8	10,0	10,0	10,0
	Rarely	20	25,0	25,0	35,0
	Sometimes	29	36,2	36,2	71,2
	Often	23	28,8	28,8	100,0
	Total	80	100,0	100,0	

Table Q3d

Background of Teachers

Statistics

		HighSchool	Background	Age	Gender	Language	PhoneModel
N	Valid	16	16	16	16	16	16
	Missing	0	0	0	0	0	0
Mean				43,19			
Median				45,00			
Mode				26[a]			
Std. Deviation				11,256			
Variance				126,696			
Range				33			
Minimum				23			
Maximum				56			

a. Multiple modes exist. The smallest value is shown Table 1

Frequency Table

HighSchool

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	N114	1	6,2	6,2	6,2
	N119	3	18,8	18,8	25,0
	N159	3	18,8	18,8	43,8
	N170	2	12,5	12,5	56,2
	N190	2	12,5	12,5	68,8
	N29	2	12,5	12,5	81,2
	N83	1	6,2	6,2	87,5
	Quantum	2	12,5	12,5	100,0
	Total	16	100,0	100,0	

Table 2

Frequency Table

Background

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	16	100,0	100,0	100,0

Table 3
Frequency Table

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	23	1	6,2	6,2	6,2
	26	2	12,5	12,5	18,8
	31	1	6,2	6,2	25,0
	38	1	6,2	6,2	31,2
	43	2	12,5	12,5	43,8
	44	1	6,2	6,2	50,0
	46	1	6,2	6,2	56,2
	49	1	6,2	6,2	62,5
	50	1	6,2	6,2	68,8
	53	2	12,5	12,5	81,2
	54	1	6,2	6,2	87,5
	56	2	12,5	12,5	100,0
	Total	16	100,0	100,0	

Table 4
Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	16	100,0	100,0	100,0

Table 5
Frequency Table

Language

		Frequency	Percent	Valid Percent	Cumulative Percent

Language

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	16	100,0	100,0	100,0

Table 6

Frequency Table

PhoneModel

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	IPhone	1	6,2	6,2	6,2
	LG	1	6,2	6,2	12,5
	Nokia	7	43,8	43,8	56,2
	Samsung	7	43,8	43,8	100,0
	Total	16	100,0	100,0	

Table 7

Statistics

Q7

N	Valid	16
	Missing	0
Mean		,69
Median		,50
Mode		0
Std. Deviation		,793
Variance		,629
Range		2
Minimum		0
Maximum		2

Table Q7

Frequency Table

Q7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	50,0	50,0	50,0
	Not Sure	5	31,2	31,2	81,2
	Yes	3	18,8	18,8	100,0
	Total	16	100,0	100,0	

Table Q7a

Statistics

Q4

N	Valid	16
	Missing	0
Mean		,38
Median		,00
Mode		0
Std. Deviation		,619
Variance		,383
Range		2
Minimum		0
Maximum		2

Table Q4

Frequency Table

Q4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	11	68,8	68,8	68,8
	Rarely	4	25,0	25,0	93,8
	Sometimes	1	6,2	6,2	100,0
	Total	16	100,0	100,0	

Table Q4a

Statistics

		Q3_a	Q3_b	Q3_c	Q3_d	Q3_e	Q3_f	Q3_g	Q3_h	Q3_i	Q3_j
N	Valid	16	16	16	16	16	16	16	16	16	16
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		,44	,88	,62	,62	,62	,56	,56	,81	1,00	1,25

Median	,00	,00	,00	,00	,00	,00	,00	,00	,50	1,00
Mode	0	0	0	0	0	0	0	0	0	0
Std. Deviation	,964	1,204	1,088	1,088	1,147	1,094	1,094	1,328	1,211	1,342
Variance	,929	1,450	1,183	1,183	1,317	1,196	1,196	1,762	1,467	1,800
Range	3	3	3	3	3	3	3	3	3	3
Minimum	0	0	0	0	0	0	0	0	0	0
Maximum	3	3	3	3	3	3	3	3	3	3

Table Q3(d)

Frequency Table

Q3_d

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	11	68,8	68,8	68,8
	Rarely	2	12,5	12,5	81,2
	Sometimes	1	6,2	6,2	87,5
	Often	2	12,5	12,5	100,0
	Total	16	100,0	100,0	

Table Q3d

Background of Instructors

Statistics

		University	Department	Background	Age	Gender	Language	PhoneModel
N	Valid	24	24	24	24	24	24	24
	Missing	0	0	0	0	0	0	0

Mean				37,21			
Median				33,50			
Mode				28[a]			
Std. Deviation				10,467			
Variance				109,563			
Range				30			
Minimum				24			
Maximum				54			

a. Multiple modes exist. The smallest value is shown Table 1

Frequency Table

University

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Acharyan	3	12,5	12,5	12,5
	AUA	4	16,7	16,7	29,2
	Eurasia	4	16,7	16,7	45,8
	Haybusak	2	8,3	8,3	54,2
	Mashtots	3	12,5	12,5	66,7
	Pedagog	5	20,8	20,8	87,5
	StateUniv	3	12,5	12,5	100,0
	Total	24	100,0	100,0	

Table 2

Frequency Table

Department

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	24	100,0	100,0	100,0

Table 3

Frequency Table

Background

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	24	100,0	100,0	100,0

Table 4

Frequency Table

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	24	1	4,2	4,2	4,2
	25	1	4,2	4,2	8,3
	26	2	8,3	8,3	16,7
	27	1	4,2	4,2	20,8
	28	3	12,5	12,5	33,3
	30	1	4,2	4,2	37,5
	31	1	4,2	4,2	41,7
	32	1	4,2	4,2	45,8
	33	1	4,2	4,2	50,0
	34	1	4,2	4,2	54,2
	36	1	4,2	4,2	58,3
	42	1	4,2	4,2	62,5
	44	1	4,2	4,2	66,7
	46	1	4,2	4,2	70,8
	47	2	8,3	8,3	79,2
	48	1	4,2	4,2	83,3
	49	1	4,2	4,2	87,5
	54	3	12,5	12,5	100,0
	Total	24	100,0	100,0	

Table 5

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	24	100,0	100,0	100,0

Table 6

Frequency Table

Language

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	24	100,0	100,0	100,0

Table 7

Frequency Table

PhoneModel

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	IPhone	2	8,3	8,3	8,3
	Nokia	10	41,7	41,7	50,0
	Samsung	8	33,3	33,3	83,3
	SonyEric	4	16,7	16,7	100,0
	Total	24	100,0	100,0	

Table 8

Statistics

Q7

N	Valid	24
	Missing	0
Mean		1,33
Median		1,50
Mode		2
Std. Deviation		,761

Variance	,580
Range	2
Minimum	0
Maximum	2

Table Q7

Frequency Table

Q7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	16,7	16,7	16,7
	Not Sure	8	33,3	33,3	50,0
	Yes	12	50,0	50,0	100,0
	Total	24	100,0	100,0	

Table Q7a

Statistics

Q4

N	Valid	24
	Missing	0
Mean		,88
Median		1,00
Mode		1
Std. Deviation		,741
Variance		,549
Range		2
Minimum		0
Maximum		2

Table Q4

Frequency Table

Q4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	8	33,3	33,3	33,3
	Rarely	11	45,8	45,8	79,2
	Sometimes	5	20,8	20,8	100,0

Q4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	8	33,3	33,3	33,3
	Rarely	11	45,8	45,8	79,2
	Sometimes	5	20,8	20,8	100,0
	Total	24	100,0	100,0	

Table Q4a

Statistics

		Q3_a	Q3_b	Q3_c	Q3_d	Q3_e	Q3_f	Q3_g	Q3_h	Q3_i	Q3_j
N	Valid	24	24	24	24	24	24	24	24	24	24
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		,71	1,04	1,04	1,38	1,42	1,42	1,54	1,58	1,71	1,88
Median		,50	1,00	1,00	1,00	1,50	1,50	2,00	2,00	2,00	2,00
Mode		0	0	0	1[a]	2	2	0[a]	2	2	2
Std. Deviation		,806	,999	,999	,970	1,060	1,060	1,215	1,100	1,122	,992
Variance		,650	,998	,998	,940	1,123	1,123	1,476	1,210	1,259	,984
Range		2	3	3	3	3	3	3	3	3	3
Minimum		0	0	0	0	0	0	0	0	0	0
Maximum		2	3	3	3	3	3	3	3	3	3

Multiple modes exist. The smallest value is shown Table Q3(d)

Frequency Table

Q3_d

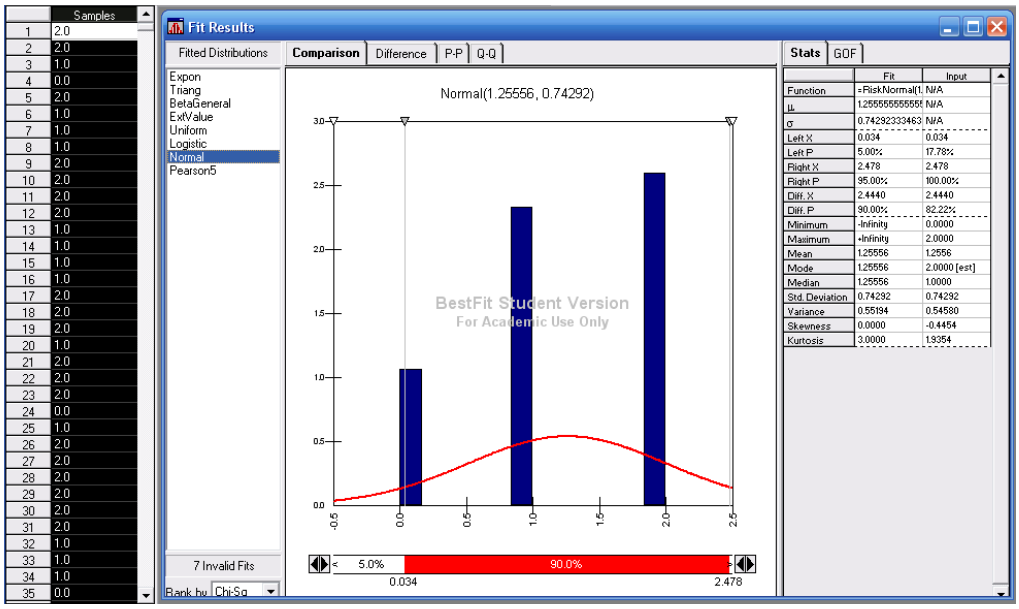
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	5	20,8	20,8	20,8
	Rarely	8	33,3	33,3	54,2
	Sometimes	8	33,3	33,3	87,5
	Often	3	12,5	12,5	100,0
	Total	24	100,0	100,0	

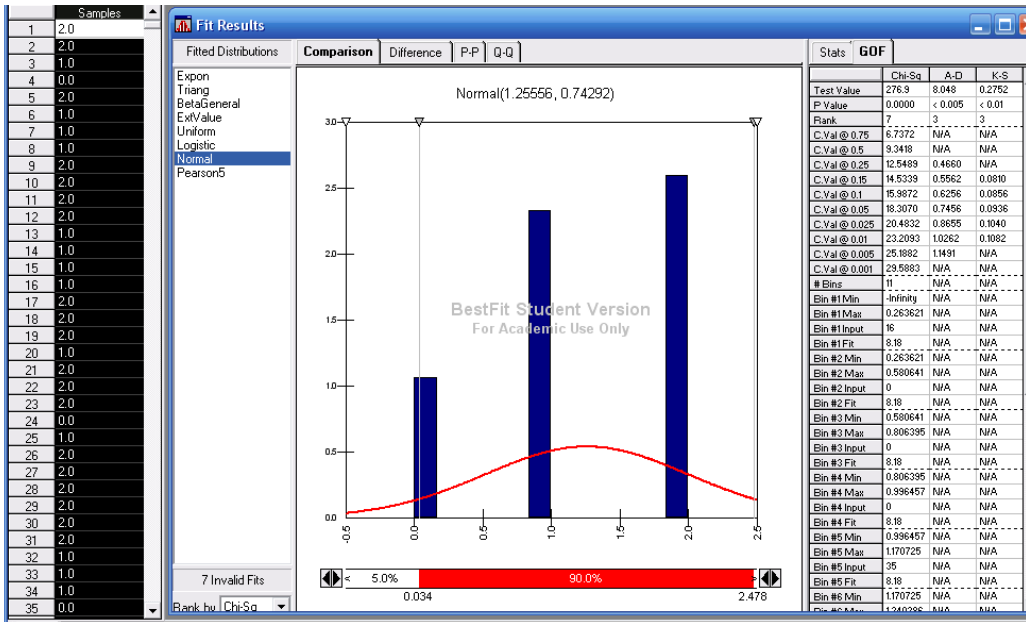
Table Q3d

Appendix D: List of Figures:

Best Fit

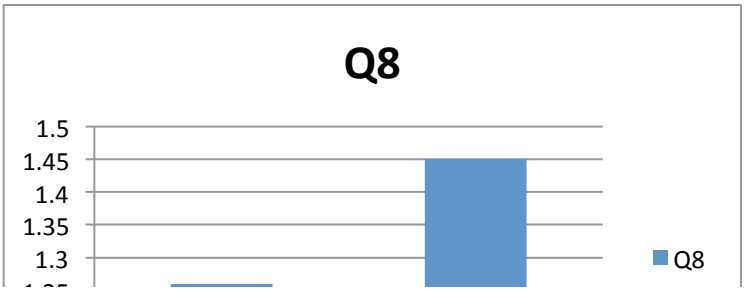
School_Pupils (Q8)



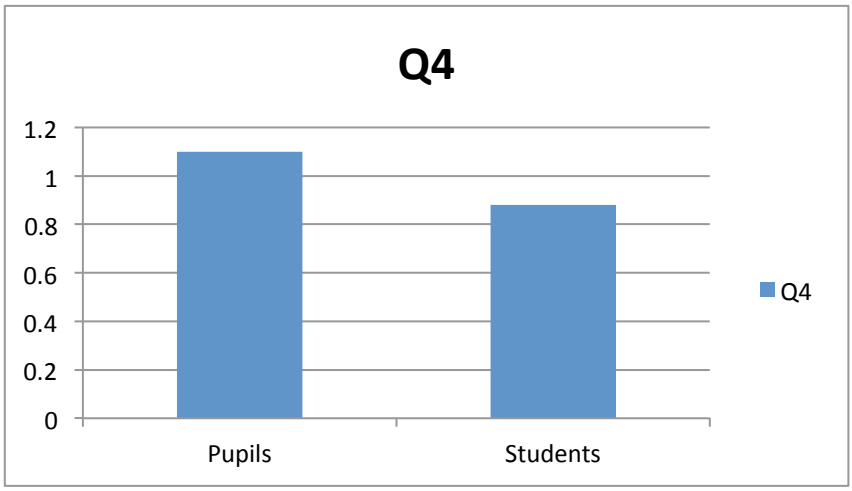


RQ1

	Q8
Pupils	1,26
Students	1,45



RQ2	Q4
Pupils	1,1
Students	0,88



RQ3d	Q3d
Pupils	1,36
Students	1,84