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Advancing Education: Using Mobile Electronics To Deliver Communications

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ADVANCING EDUCATION: USING MOBILE ELECTRONICS
TO DELIVER COMMUNICATIONS

being

A Thesis Presented to the Graduate Faculty
of the Fort Hays State University in
Partial Fulfillment of the Requirements for
the Degree of Master of Science

by

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ABSTRACT

Based on gender, age, education level, online shopping, economic state, and level of development, this thesis discusses the kinds of electronic communication devices which are used in Arabic countries. Also, the internet, cellphone usage, and how electronic communication technology effect individual's lives in Arabic countries will be studied.

As a developing Arabic country, the United Arab Emirates (UAE) is seeking to use the best methods of digital education. Spending on education technology in the UAE is one of the highest in the world. The UAE is constantly looking to better the educational system. The economy in UAE has developed into a modern state.

The Hashemite Kingdom of Jordan is another an Arab Kingdom in the Middle East. This research discusses the importance of the information and communication sectors in Jordan. These sectors, as well as telecommunications and technology, business banking, the internet and e-commerce solutions, online shopping, and communication centers are the fastest growing areas in Jordan.

Finally, Saudi Arabia has the highest reserves of national oil in the world. Recently, Saudi Arabia has developed rapidly because of its oil exports, so quality of life for citizens has improved. The government has provided an inexpensive distribution of electrical power, which helps advance internet use. Also, the improvement of the living level, and the internet and cellular phones have entered into people's lives which bring more convenience to communicate in Saudi Arabia, especially in education.

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CHAPTER 1

INTRODUCTION

Education is an important part of our lives which helps us become more enlightened. By attending classes and learning from experienced professors, students can improve their understanding and skills that will help to develop self-reliance and future families. Also, this intellectual development benefits the world by increasing the overall knowledge of the individuals who inhabit it.

People all over the world utilize various technologies in order to increase learning outcomes, which therefore advances the learning process. Technology is becoming increasingly pervasive, and the use of mobile technology in education is growing. Mobile devices are also becoming more accessible. However, people use many different kinds of communication technologies, such as mobile phones, for a vast array of activities. Countries are looking to find the easiest way to deliver education to inspire students to make education and training a high priority in their life.

There are different types of mobile devices with different features. Some of them are electronic books or tablets, which are all lightweight devices. As a downside, though, these devices are lacking a physical keyboard to provide advanced interactive opportunities. Furthermore, mobile phone learning may be an essential part of education and training on mobile devices such as Personal Digital Assistants (PDAs) and smart phones. There are many devices which people carry everywhere with them like personal machines or tools which help them to accomplish various tasks. These are generally

inexpensive and easy to use, and are useful for people from all walks of life. Moreover, mobile phone devices can be successfully brought into pedagogy. For example, aspects of technology such as resilience, portability, and accessibility can contribute to a positive effect on students.

Information and communication technology offer benefits to education through online program and video teaching which could help face to face teaching in classrooms. Some studies have shown that online learning helps integrate theoretical ideas because students can frequently return to resources and help them to understand better. Use of technology and e-learning in education also make teaching and learning more exciting, attractive, interesting, and fun to explore.

Using communication technology devices may be the key to help education via mobile learning. Mobile learning can improve communication between learners and teachers. This advancement in communication can offer access to learning material wherever time and space allow. Also, it gives students and teachers the ability to communicate if they are without computer access for teaching and learning.

Mobile technology can help students with organization via synchronizing calendars, schedules, and online educational portals, as well as providing access to communication between teachers and their students through messaging platforms including email and discussion boards. Also, this kind of technology allows students to create learning materials individually or with others. Additionally, educators and administrators must be focused on learners' needs, instructional goals, and outcomes.

Furthermore, the primary focus should be on developing ways to ensure that mobile technologies can fit into education and improve the utility of mobile devices on for students and faculty.

Using mobile devices could also support printed books in learning. Education technologies provide opportunities to advance communication time and intensity between teachers and learners. Teachers should be prepared to incorporate mobile technology as part of their teaching tools; however, many teachers view mobile technology simply as personal communication gadgets.

Similarly, there are educational institutions with and without educational technology. Those which do utilize technological equipment tend to commonly have mobile phones, laptops, and computers to assist with learning in the technological and educational environment. Those without tend to be more traditional environments, and they are perhaps even outdated, which will be discussed later. Some examples of places with educational technology include America, United Kingdom, and United Arab Emirates, which this thesis will cover. On the other hand, some examples of more traditional educational environments include Jordan, as discussed in the research, as well. Finally, Saudi Arabia's relationship with educational communication technology will be featured in the last part of the research, and this location will be discussed the most in depth. The last section will feature the conclusion of this research.

United Arab Emirates

The United Arab Emirates (UAE) is located in Southwest Asia, bordering the

Southeast end of the Arabian Gulf. It is between Oman and Saudi Arabia. Education in the United Arab Emirates has developed since 2011. UAE is seeking to use the best methods of digital education. The government provides online education (tele-education) such as the Open University system, under the supervision of a professor in a foreign university, and mobile phone education.

The UAE is constantly looking to better the education system. This study focuses on the use of internet technology and mobile phone usage in education in United Arab Emirates, and addresses two points. First, Robotel smart class multimedia helps to create a generation of known information between people and develop students' skills. Second, mobile phone education is seeking to access free education without paper using a mobile phone. Structuration theory is the essential theory of the study which focuses on working together as a group from different places by using different technology to effect the learning audience.

Jordan

The Hashemite Kingdom of Jordan (HKJ) is an Arab Kingdom in the Middle East. It is on the east bank of the Jordan River. Jordan is bordered by Saudi Arabia to the south and east. Under a constitutional monarchy, the king holds wide executive and legislative powers. In 2014, Jordan joined the list of countries with high human development. However, Jordan has medium income compared to other countries in the area. Jordan is a member of the Euro-Mediterranean free trade area. Its economy is diverse including trade, finance, transportation, communication, and public utilities (CIA

World Fact Book 2015).

This research will discuss the importance of the information and communication sectors in Jordan. These sectors along with the telecommunications and technology solutions sectors, e-government applications, the internet and e-commerce solutions, online shopping, multimedia solutions, multiple animation and communication centers are the fastest growing areas in Jordan.

Along with the importance of information and communication sectors in Jordan, the researchers will focus on developing communication skills. Included will be information on Jordan's improvements to their online shopping interface as well as the country's online shopping habits. This research relies on the Diffusion of Innovations theory (DOI) to explain how, why, and at what rate new ideas and technology spread through Jordan's culture.

Saudi Arabia

Saudi Arabia is known as the Kingdom of Saudi Arabia (KSA). It is an Arabic country in Western Asia. Saudi Arabia is bordered by Jordan and Iraq to the north, Qatar, Bahrain, and the United Arab Emirates to the east, and Yemen to the south.

Since Saudi Arabia has the highest reserves of national oil in the world, it has known as an oil kingdom. Sfakianakis (2014) showed that oil is the mainstay for Saudi Arabia's economy. In recent years, Saudi Arabia has developed rapidly because of its oil exports. The quality of life for citizens has also improved. The government has provided an inexpensive distributed electrical power system which help the increase of internet

use. Moreover, the improvement of the living level, the internet and cellular phones have entered into people's lives which bring more convenience to communicate in Saudi Arabia especially in education.

This research also compares and contrasts two different environments using a sampling of only Saudi Arabian students. Saudis in America who have used electronic communication technology in their education are compared with students studying in Saudi Arabia, where there are little to no electronic communication technology in the classroom. Furthermore, the third phase of research proposes updates to the traditional Saudi classroom and teaching style, based on the findings of the study.

CHAPTER 2

METHODOLOGY

The methodology is placed before literature review because it covers three different countries, UAE, HKJ, and KSA, which all have the same methodology. Each country has different literature review, though, to outline the differences between the industries. Also, these countries use different types of electronic communication technologies according to their needs and the sector they are trying to develop and use to improve their countries.

Participants

The study discusses internet and mobile phone usage in United Arab Emirates, Jordan, and Saudi Arabia, and how these technologies affect developing countries. Therefore, this study looks to better understand electronic communication technology usage in UAE, HKJ, and KSA, as well as how these technologies impact and develop each country. All participants who completed the questionnaire have lived in or visited UAE, HKJ, and KSA for three months or more.

The surveys were sent to students and people who study or work at United Arab Emirates' schools. Moreover, the researcher met with some Jordanian colleagues in the United States and contacted Jordanian colleagues in Jordan. Then, the colleagues sent the questionnaires to their friends and family in Jordan. This study also utilizes Saudi college students, some of which study in the U.S. The sample reflects two different cultural groups: Saudi Arabian students who study only in the Saudi Arabian educational

system, and Saudi Arabian students who study in the American educational system. The Saudi sample attended a mid-sized Midwestern American university, which has a total enrollment of approximately 13,000 students, 5,000 of which are on campus. In contrast, the Saudi sample also included Saudi college students who have only studied inside Saudi Arabia. Using the snowball sampling method, the researchers also distributed the questionnaire via the internet using personal Facebook and chatroom accounts. The subject pool is from different age brackets from 18-25 years old, 26-35 years old, 36-45 years old, and 46- 55 years old, and it includes males and females.

Instrumentation and Procedures

Quantitative methods were used in this research. It discusses mobile phone technology usage that is used in United Arab Emirates, Saudi Arabia education, and online shopping in Jordan. This study was conducted by collecting data using a forty question survey or questionnaire. The survey contained 9 demographic questions, 9 open-ended questions, and 21 Likert scale questions. The survey focused on internet and cell phone usage by each country's citizens. The questionnaire was originally published and distributed in English, but has also been translated to Arabic. The survey was translated to Arabic to avoid any language misunderstandings. The questionnaire did not contain any questions that would make any of the respondents uncomfortable, and was done voluntarily nonetheless. How people use technology and the internet in their daily lives, and why they choose and prefer to communicate with others by using different electronic devices were answered in the survey questions.

In addition, there was an online survey on SurveyMonkey (only in English), which is a data representation survey program that helped to reach the goal of collecting surveys in United Arab Emirates, Jordan, and Saudi Arabia. The researcher also created an online version of the questionnaire using Google Forms. This program allowed the researchers to collect and see the data from the completed surveys. Having an online version of the survey allowed the researcher to reach Emirati, Jordanians and Saudis all over the world. After the surveys were collected, data was recorded and analyzed using SPSS software. The data was then used to answer the aforementioned research questions.

CHAPTER 3

INTERNET AND MOBILE PHONE USAGE IN EDUCATION IN UNITED ARAB EMIRATES

Introduction

The United Arab Emirates (UAE) is located in Southwest Asia, bordering the southeast end of the Arabian Gulf. It is between Oman and Saudi Arabia; in a strategic location along southern approaches to the Strait of Hormuz which is a transit point for world oil. UAE's population is 9.2 million. The country was established in December 1971 and has grown to be the second largest economy in the Arab world between 2010 and 2013.

Education in the United Arab Emirates has developed since 2011. Spending on education technology in the UAE is one of the highest in the world. UAE is seeking to use the best methods of digital education. The government provides online education (tele-education) such as the Open University system, under the supervision of a professor in a foreign university, and mobile phone education. The UAE is constantly looking to better the education system.

This study focuses on the use of internet technology and mobile phone usage in education in United Arab Emirates, and addresses two points. First, Robotel smart class multimedia, which is used for different kinds of digital media in classroom, and it helps to create a generation of known information between teachers and students, and develop students' skills. Second, mobile phone education is seeking to access free education

without paper using a mobile phone. Structuration theory is the essential theory of the study which focuses on working together as a group from different places by using different technology to affect the learning audience. The data is collected by questionnaires that United Arab Emirates citizens have completed. Five research questions will be analyzed and reported within this chapter.

Literature review

The United Arab Emirates is a federation of seven emirates. Each emirate is governed by a hereditary emir. One of the emirs is selected as the President of the United Arab Emirates. The constituent emirates are Abu Dhabi, Ajman, Dubai, Fujairah, Rasal-Khaimah, Sharjah, and Umm al-Quwain. Abu Dhabi contains the capital of UAE. Islam is the religion of the UAE, and Arabic is the official language. Islamic law is a significant source of the UAE's legislation, and it influences current educational practices.

According to Al-kilefi (2012), in 2011, the economy in UAE has developed into a modern, albeit developing, state. UAE has the second largest economy in the Arab world. UAE is ranked as the 14th best nation in the world for doing business based on its economy and regulatory environment. Petroleum and natural gas exports play an important role in the economy.

Education in UAE is free for citizens. It consists of primary schools, middle schools and high schools, and the curriculum is created to enrich United Arab Emirates development's goals and values. The Arabic language is used in education with English as a second language. According to the QS Rankings (2007) the UAE has kept improving

education and research that includes the establishment of the CERT Research Centers, the Masdar Institute of Science and Technology, and Institute for Enterprise Development.

According to Etahad news (2013) the volume of spending on education technology in the UAE comes within the highest in the world. The UAE government is seeking through the initiative to reach a paper free learning environment. This is what has already been accomplished via a mobile phone education initiative in the federal higher education, which was launched in September of 2012.

Structuration Theory

Structuration theory is a general theory of social action. This theory is tested through ordinary practice. As communication acts strategically achieve goals, participants do not realize that they are simultaneously creating forces that return to affect future actions. Structuration theory highlights ways of communication within large groups and individually. Interpersonal relationships are very important within the culture, the persons, and what they care about. According to Giddens (1984), using concepts from objectivist and subjectivist social theories, he discarded objectivism's focus on detached structures, which lacked regard for humanist elements and subjectivism's exclusive attention to individual or group agency without consideration for socio-structural context.

DeSanctis and Poole (1994) adapted and augmented this theory by researching interest in the relationship between technology and social structures such as information technology in organizations. DeSanctis and Poole proposed an adaptive Structuration theory with respect to the emergence and use of group decision support systems. In

particular, they chose Giddens' notion of modalities to consider how technology is used with respect to its spirit. Appropriations are the immediate, visible actions that reveal deeper structuration processes and are enacted with moves. Appropriations may be faithful or unfaithful, and become instrumental when used with various attitudes.

Giddens defines three dimensions of structuration that explain how people create a right way to use social structures. They act accordingly for social structures to emerge from these actions. The first is knowledge, which uses technology according to moral codes, and people can use it in a community, so they can reach the goals. The second is the use of a virtual learning environment. That means that some structuration ideas on how technology works can influence social action. According Loureiro-Koechlin and Allan (2010), Giddens introduces the concept of time–space distanciation as a key feature of modernity. This refers to the separation of time and space, which in traditional societies is linked through place, and their recombination in forms which permit the precise time-space zoning of social life (Walsham 1998). For example, the time and space for each module are linked to the classroom. The use of a visual learning experience (VLE) changes this system so the interactions can take place at different times and from different places (2009). Third, the most well-known use of structuration in the internet technology (IT) field is Orlikowski's enactment of technologies-in-practice. Orlikowski (2000) separates two aspects of technology: technology as artifact which means using tools of technology, and technology-in-practice which means practicing the technology to understand the interaction between people and social action.

Electronic Communication

Today, there are so many electronic devices that have developed and can be used in different ways, especially in communicating traditional ways. People were using computers for counting, but now they are using this technology for different purposes such as shopping, learning, and contacting others in different places. People found that new tools of technology have a powerful ability and speed to send or receive messages between people. For example, e-mail, mailing lists, the World Wide Web, and access to information in the world help academics, researchers, and students contribute to empirical knowledge. Researchers found that students like to use modern electronic communication to better learn from traditional ways. Domakin (2013) says, "It has been argued that online discussions provide opportunities for students to learn from each other through a collaborative process of sharing experiences and views, creating discussions that involve an exchange of multiple perspectives. The asynchronous nature of online discussions is believed to allow students to unpick and analyze themes in a way which face-to-face communication cannot. It reveals a preference by students to use the discussion board to share opinions and experiences, rather than to learn about a subject. Learning is identified as arising from the act of reading and thinking."

Chan, Deave, and Greenhalgh (2010) use Structuration theory to look at childhood obesity in transition zones. They notice that many children are obese especially in the fastest growing countries. However, they think that Structuration theory may help with the interaction between population and individual causes of obesity. They

did research in overweight preschool children in Hong Kong to find reasons. They did find different reasons for different children. There are micro-level and macro-level reasons. Some of the reasons are social structures in the family, caregiving, environment, or disjointed problems. Some of the solutions are in the structure of security, caregivers, controls for family stress, and mealtime routines that can limit child obesity. They find that when they use Structuration theory to organize children's routine lives, they will help to limit childhood obesity.

Using Structuration theory differently, Loureiro-Koechlin, and Allan (2010) encourage women to progress into employment. They organize learning activities in the form of a lecture, face-to-face, and online. Then, they used Structuration theory to focus on the relationships between human agency as big, and social structures as small. Structuration theory is used as an analytical tool to help understand what happened within the project. They are interested in implementing e-learning processes as a part of a project; however, they used Structuration theory to explain how the e-learning and e-mentoring structures emerged and from which sources. They used Structuration theory to design a module to enable students to develop the necessary knowledge and skills to allow them to enter the LaSCI program at a management level. Structuration theory is a system of relationships that determines the actions of individuals, and then these actions of individuals lead to the creation of a successful in society. By using learning structures, students have received automated emails with reminders and updates to organize activities and to facilitate learning. However, there were two factors that influenced the

project and their learning activities: the issue of absence and presence online, and the issue of time frame changes for online users. The theory helps to find solutions to this project.

Fulk (1993) talks about technology in an article with empirical evidence of communication technology patterns. The article found these patterns in a study of electronic mail. They used a group of scientists and engineers. They found that people like to work in large groups more than work as individuals. When people work in a group, they will interact more, and find deeper analysis and information.

Structuration theory helps to explain the patterns which are found in communication technology. In addition, communication technologies are both a cause and consequence of work as a structure. Structuration theory worked in this article because they found a good result of working together.

Education in United Arab Emirates

United Arab Emirates is seeking to use the best methods of digital education in the world. In UAE, they are using technological education to support educational practices in the transfer of teaching methods to the modern digital pattern. Also, students are qualifying for dealing with information and communication technology, including raising their competitiveness in the world.

According to Etahad news (2013), the volume of spending on education technology in the UAE comes within the highest in the world. The UAE government is seeking through the initiative to reach a paper-free classroom. This is what has already

been accomplished via a mobile phone education initiative in the federal higher education, which was launched in September of 2012.

Communication technologies contribute to raising the level of education and scientific research. They help move the invention of records on the internet sites, raise the level of education and training, develop teaching methods, and facilitate remote transfer of education and training services to remote areas. Also, they provide online education (tele-education) such as the Open University system, the supervision of a professor in a foreign university, and the use of the most important elements of information technology: audio and video.

Studies show that the use of these methods may make the student learning process easier, and lift the motivation of defaulting students. However, the results of the use of communication and information technology in teaching depend on the teacher for the organization of the education process. The technology alone does not achieve significant change in raising the level of education and learning what is not employed in innovative ways by the teacher.

Problem with education technology in United Arab Emirates

Education in the Emirates depends on memorization of information and transfer of this information to students without encouraging them to use their potential to help them find solutions, develop a spirit of research, innovation, and self-learning. Students are expected to listen and remember the information, but never give an opinion. As educational institutions have not been able to achieve a balance between the demands of

the labor market, the skills, and the available supply of the educational system of various training centers, there is widespread unemployment among graduates, especially graduates with university degrees, in addition to the inflation of academic education on technological and research skills development. Therefore, UAE seeks to provide educational solutions and applications systems (Smart Class Multimedia) in public schools in order to raise the quality and viability of the development level of learning, especially in the grades that support multimedia applications. This initiative aims to improve the UAE region through the latest computers and communications technologies in the classroom.

Role of Education Technology

Communication technology in education has the potential to be extended in many innovative ways. Some are: Robotel Smart Class Multimedia, which helps teachers and trainers to use interactive tools to present the curriculum, share information, monitor student comprehension, and to overcome the challenges facing the education process.

Mohammed Saeed (2011), said:

“Our program aims to create a generation knowing information technology applications and enhancing the educational experiences using innovative teaching methods and providing them with the necessary skills to succeed in their future careers. Emirates’ aims are to provide a better education system, and to provide international students with the knowledge, understanding, skills and values to ensure their success in achieving the development of the personal and national

leveling the UAE” (2).

Mobile Phone Education

United Arab Emirates is seeking to access paper-free education by using a mobile phone. According to Michael Folan (2010), this technology impacts in strengthening and deepening the things that students learn. It is also at a time when the world is witnessing a digital revolution which will help this reference to the correct choice in the field of digital education. This technology is available and easy to use. It helps teachers choose teaching methods and install the most feasible practices, noting that the process of identifying the gap in the digital education helps digital educational software developers to create more effective educational solutions.

Andersson and Hatakka (2010) describe how distance education in developing countries is growing with information and communication technologies. They study distance education in Bangladesh and Sri Lanka because these countries use different technologies for implementing interactivity; for example, the internet, computers, video, and mobile phones. However, they want to use these technologies differently in learning practices to change teachers’ and students’ beliefs and values to provide everyone more possibilities for interaction together. They think that e-learning involves a shift in the educational structure from traditional transmission to interaction. Then, they test everything on Structuration theory and compare the traditional transmission and development interaction. They found that, when people work together, collaboration and the use of self-assessment tools make students take more ownership of their learning.

Structuration theory will be useful in United Arab Emirates because people work as a structure in large groups from different cities. Also, they use different communication technology to reach their goals. It is beneficial to understand a developing country. The condition of the internet and mobile devices usage will be shown by research and examining the following research questions.

RQ1: What age, gender, group of people use technology communication in United Arab Emirates?

RQ 2: What kinds of technology tools are used in United Arab Emirates?

RQ3: Is technology communication used correlated to economics?

RQ 4: Do people prefer to use electronic communication to communicate and form a relationship in United Arab Emirates?

RQ5: Have individual lives developed by using different technology in United Arab Emirates?

Results

The survey data showed there were 60 respondents from United Arab Emirates who participated in the survey and people who lived in United Arab Emirates. Most questionnaires were in English, but ten were requested in Arabic. The SurveyMonkey link was sent to people from United Arab Emirates, and some people who have studied abroad. Sixty people responded, and 40 questions were answered.

RQ1: What age and gender use technology communication in United Arab Emirates?

Survey results show that all respondents use the internet and cellular telephones

more than any other technology. The largest percentage of internet and cellular telephone usage is in the 25-35 age group, which was 34 respondents with 56.67%. The second largest group was 16 respondents from the 18-25 age group with 26.67%. Only 8 respondents with 13.33% from 35-45 years old made this group the smallest proportion. From the 45-65 age group there were 3 respondents with 3.33%.

Figure 2 shows all the participants divided by gender; 26 respondents were male (50.00%) and also 26 respondents were female (50.00%). Eight were not specified.

Most respondents completed institute, college or university (56.90%). Education level completion was 17.00% for graduate school (MA, MS, Ph.D, MD, LD), and 8.00 % for high or secondary school.

Table 1: *Legend for Pie Chart*

Education Level Completion	Respondents
Primary school	0
High or secondary school	8
Institute, college or university	33
Graduate school (MA, MS, Ph.D, MD, LD)	17
Not specified	2

RQ 2: What kinds of technology tools are used in United Arab Emirates?

There are fourteen electronic communication media that were recorded as used in United Arab Emirates. Table 1 shows media use of respondents in United Arab Emirates by percentage and number of response. Mobile phone, email account, online chat room, television, satellite dish, digital camera, radio, e-commerce website, banking kiosk or money card, the internet listserv, VCR, the internet bulletin board, voicemail, and

proxima are included as communication media. Table 2.1 shows that the cell or mobile phone with 93.33 % of 56 respondents and the television with 81.67% of 49 respondents were used commonly in United Arab Emirates. Banking kiosk or money card, VCR and proxima (or other presentation device) have the least percentage of the electronic communication usage.

Table 2 *Types of Electronic Communication Used in UAE*

Number	Electronic Communication Types	Respondents	Percentage
1	Cellphone, moto, mobile phone	56	93.00%
2	Chatroom	19	31.67%
3	Radio	29	84.33%
4	Television	49	81.67%
5	VCR	6	19.35%
6	Satellite dish	13	21.67%
7	Digital camera	32	53.33%
8	E-commerce website	12	20.00%
9	Banking kiosk or money card	10	32.25%
10	Internet listserv	8	22.85%
11	Internet bulletin board	4	13.33%
12	Email account	8	10.00%
13	Voicemail	8	25.80%
14	Proxima (or other presentation device)	5	16.12%

RQ3: Is communication technology used correlated to economics?

The electronic communication usage does not correlate with the economic status in United Arab Emirates. Table 3 shows that electronic device users have no reliable income in United Arab Emirates (54.83%), and have enough to provide for their own and others' needs on a regular basis (19.35%). These people were students and teachers who live in United Arab Emirates or study overseas.

Table 3: *Economic Status of U AE Electronic Device Users*

Number	Economic Status	Respondents	Percentage
1	I have no reliable income.	7	14.29%
2	I have a fixed income/pension less than 1,000 USD per month.	3	6.12%
3	I have a job or business providing housing, food, clothing and life necessities.	23	46.94%
4	I have enough to provide for myself and others' needs on a regular basis.	1	2.04
5	I am wealthy by my country's standards.	21	42.86%

RQ 4: Do people prefer to use electronic communication to communicate and form a relationship in United Arab Emirates?

Figure 1 shows that people in United Arab Emirates prefer to communicate personally (face to face) more than use electronic communication. Respondents prefer to communicate in person (45 respondents at 39.00%). There were 37 respondents who prefer to communicate by telephone at 32.00%. However, most respondents like to form and create new relationships online (43.00%), and many of these had never met new electronic friends face-to-face (40.38%). See figure 1 and table 4.

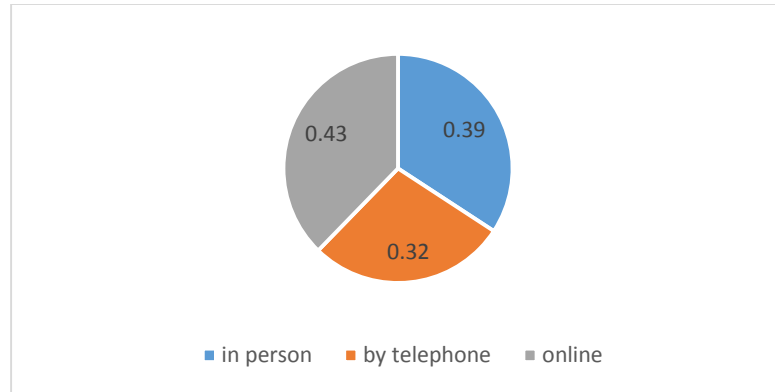


Figure 1: Form New Relationships Online (60 participants)

Table 4: *Meet New Relationships Online* (n=31)

Meet New Electronic Friends Face-to-face Descriptors	Percentage
Never	40.38%
Hardly ever	25.00%
Sometimes	32.69%
Always	1.92%

RQ5: Have individual lives developed by using different technology in United Arab Emirates?

Recently in United Arab Emirates, individual lives have developed by using electronic communication. The traditional way, which is visiting and spending the whole time with family and friends, was used in United Arab Emirates between individuals. However, now the way that people communicate has changed by using different technology. There are 20 respondents who chose “sometime” in questionnaires sent to United Arab Emirates people with 57.00% of all participants. The two main reasons of

their answer were first, "amazing and easy to communicate with families and friends", and second, "save time and fast to communicate with others." Twelve of the respondents replied "tremendously" at 34.00%, 1 respondent chose "hardly ever" at 3.00 %, and 2 respondents replied "not" at 6.00 %. See figure 2.

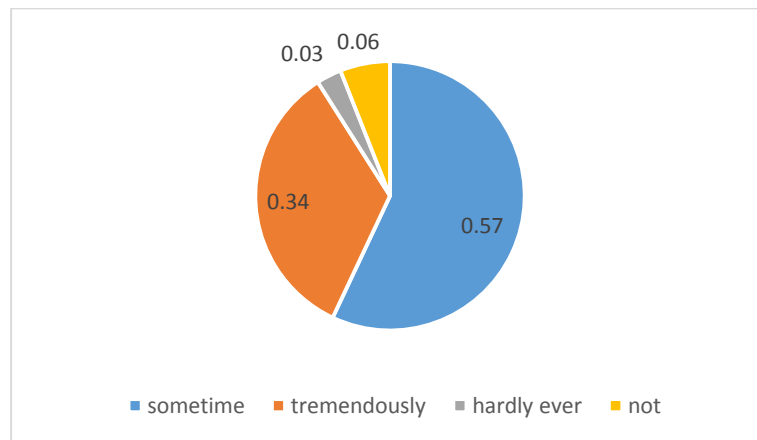


Figure 2: Ways of Communication (n=60).

Some respondents wrote reasons why they communicate online:

- 1- "Because I can reach friends who are in different countries."
- 2- "Because it speeds a way to get the information."
- 3- "Because it helps to find more about the world."
- 4- "Because it is easy to use to communicate and search for a lot of things."
- 5- "Because it makes the communication easier."

Summary

United Arab Emirates people are using technologies to communicate and develop their country. Structuration theory is useful in United Arab Emirates because people work

as a structure in large groups from different cities. Also, they use different communication technology to reach their goals. Structuration theory is beneficial to understanding a developing country.

CHAPTER 4

INTERNET AND ELECTRONIC COMMUNICATION USAGE IN JORDAN

Just as United Arab Emirates is trying to develop the education sector and have the best digital method in the classrooms, which helps students feel comfortable and use the communication technology to learn faster, Jordan is now using electronic communication technology differently, too. In order to develop stronger electronic communication sectors, Jordan strives to improve online shopping interfaces. Jordanians use electronic technology to buy products online because some advantages exist which are only enabled by the process of online shopping. Some of the advantages include saving time, minimizing effort, and improving accessibility.

This research relies on the Diffusion of Innovations theory, which is more applicable than Structuration theory. DOI is used for the remaining research, especially to examine Jordan and KSA because they are less developed than UAE. As technological advancements increase and improve in Jordan and KSA, perhaps the Structuration theory would become more suitable.

Introduction

The Hashemite Kingdom of Jordan is an Arab Kingdom in the Middle East. It is on the east bank of the Jordan River. Jordan is bordered by Saudi Arabia to the south and east, Iraq to the north-east, and Syria to the north. Under a constitutional monarchy, the king holds wide executive and legislative powers. In 2014, Jordan joined the list of countries with high human development. However, Jordan has medium income

compared to other countries in the area. Jordan has annual budget deficits because of their slow domestic growth, high energy, and food subsidies. Jordan is a member of the Euro-Mediterranean free trade area. Its economy is diverse including trade, finance, transportation, communication, and public utilities (CIA World Fact Book 2015).

This research will discuss the importance of the information and communication sectors in Jordan. These sectors, along with the telecommunications and technology solutions sectors, business banking, e-government applications, the internet and e-commerce solutions, online shopping, multimedia solutions, multiple animation and communication centers are the fastest growing areas in Jordan.

Along with the importance of information and communication sectors in Jordan, the research will focus on developing communication skills. Included will be information on Jordan's improvements to their online shopping interface as well as the country's online shopping habits. The researchers expand on the use of electronic communication technology by Jordanians and what the future of electronic communication may hold.

This research relies on the Diffusion of Innovations (DOI) theory to explain how, why, and at what rate new ideas and technology spread through Jordan's culture (Rogers, 1962). The data used in this research was collected by questionnaires that Jordanian citizens completed. Four research questions were analyzed.

Literature review

The following is a review of DOI, the information technology sector in Jordan,

online shopping, and E-banking.

Diffusion of Innovations theory

DOI strives to examine how quickly and thoroughly a new technology or innovation spreads through a population. Everett Rogers (1962) coined the term “early adopters” in his book *Diffusion of Innovations* originally published in 1962 to describe individuals within a population that accept an innovation before the majority of the population. DOI uses a bell-curve to demonstrate the rate at which a population adopts a new innovation. There are four main components in the diffusion of innovation process according to Rogers’ theory. These components are:

- 1 Innovation
- 2 Communication channel
- 3 Time
- 4 Social system

An innovation is an idea, a practice, or an object that is perceived as new by an individual or any other population of adopters. In the case of electronic communication in Jordan, the innovation will be electronic means of communication and online shopping. A communication channel is the means by which messages are sent from one individual to another. There are three time factors. The first time factor is the innovation-decision process. The second time factor is the time in which an innovation is adopted by an individual or group. The third time factor is the innovation’s rate of adoption. A social system is a set of connected groups of people that are engaged in joint

problem solving to accomplish a common goal. In the study of electronic communication and online shopping in Jordan, the social system will be both the government of Jordan and the general population (Soffer, Nachmias, and Ram, 2010).

According to Rogers each individual goes through five stages as he or she accepts or rejects an innovation.

1. Knowledge
2. Persuasion
3. Decision
4. Implementation
5. Confirmation

Knowledge is not only the existing understanding that a person has of an innovation, but also the act of learning about an innovation's existence and function.

Persuasion is the process that an individual goes through to become convinced of the innovation's value. An individual must seek additional information about the innovation and then commit to the adoption (or rejection) of the innovation. Implementation of the innovation is putting the innovation to work in an individual's life on a regular basis.

Confirmation is the ultimate outcome based on the four aforementioned stages. During the confirmation stage, the individual either accepts or rejects the innovation.

Confirmation is continued use based on the evidence of benefits or drawbacks (Soffer, Nachmias, and Ram, 2010).

DOI has been used to study many areas including that of the diffusion of

communication technology in developing populations and developing governments or e-governments. The researcher of this study will apply DOI to the developing country of Jordan's population and the country's developing government to study the diffusion of modern communication technology; including the use of online shopping interfaces throughout Jordan and the use of modern communication technology within the developing government of Jordan. Liao, Xu, and Yao (2013) conducted a study looking at people moving from rural areas to urban areas showing the process of urbanization. The researcher considered the static or fixed number of potential adopters. Although the fixed number of potential adopters will not change, the potential adopters whose economic status or ability to adopt an innovation has changed should be considered. In the same sense, citizens of Jordan who do not have access to electronic communication now may have access to it in the near future as the country and economy develop and become more stable. Those citizens should be considered in the population. The survey used in the study of electronic communication and online shopping in Jordan prompted survey takers to indicate whether they live in urban or rural areas of Jordan. This will indicate how rural and urban populations differ in the use of electronic communication as well as online shopping habits in rural areas as opposed to urban areas.

In a study of DOI applied to the diffusion of public internet access points in Turkey, when citizens are using electronic communication there is probably a successful e-government being implemented in the population (Afacan, Er, and Arifoglu, 2013). Lee, Hsieh, and Hsu (2011) conducted a study on e-learning systems using the DOI.

According to Lee, Hsieh, and Hsu, investing money and time into e-learning (in the case of the study of electronic communication in Jordan, e-government) resources is beneficial because it can be implemented all at once to a large population immediately, consistently, and conveniently. The study conducted by Lee, Hsieh, and Hsu on one university's faculty population can be applied to the country of Jordan for a broader application.

When applying DOI, one must be careful to account for any manipulation of the environment. A 'manipulated environment' is defined as any leading group supplying incentives to persuade individuals in the population to adopt the innovation. In other words, the use of propaganda or any other persuasion device will skew the predicted bell-curve of diffusion. Gayadeen and Phillips (2014) recognized this variable and tested it in relation to the diffusion of public policy throughout a population.

As shown in a study by Kapoor, Dwivedi, and Williams (2014), there are some innovations that even with environmental manipulations a population will not adopt. Kapoor, Dwivedi, and Williams studied the diffusion of green innovations. According to the study, even if there was monetary or other persuasive gifts given to individuals who adopted specific innovations, acceptance rates still remain low for some innovations. All in all, not all innovations are successful. Because of the fact that one-third of all innovations fail, it is imperative that researchers find and test innovations that are likely to be adopted into a society. With acceptance and adoption being the ultimate goal of the diffusion of any given innovation, this variable is important to consider when conducting a study using the DOI. There are two types of innovation decisions: collective innovation

decisions and authority innovation decisions. The collective decision occurs when adoption is by consensus; however, the authority decision occurs by adoption among very few individuals with high positions of power within an organization.

Valente and Raque (2010) suggest two new ways to improve peer delivery or diffusion of messages or innovations. The first method the authors discuss is the group model, which involves identifying groups within social networks. Then, peer opinion leaders are identified within each of those groups who can give suggestions regarding messages. Another way of improving peer delivery of messages is the Network Leader Model. This model begins with identifying peer opinion leaders first, then grouping network members to each leader, and finally, creating new cliques.

Frenzel and Hariolf (2009) also show some models of innovation diffusion as a methodology to analyze business cases for new product processes. The research focuses on the innovation's target market along with the various hypotheses of the diffusion models. There are new services and products in the markets which predict the diffusion of an innovation among consumers successfully by using forecasting techniques.

Researchers have analyzed DOI and developed models to examine this process. One goal is to review innovation diffusion models to make them more accessible for innovation managers and practitioners.

A three-step approach was proposed to analyze and forecast the diffusion of new products by researchers; the study was created to investigate important characteristics of the innovation's business case; and to serve as a review of diffusion models, as well as to

develop the categorization of diffusion models. This process ended with selecting a model that matches the characteristics of the case study, and applying the appropriate model to increase the use of diffusion models among practitioners.

The researcher of this study predicts that applying DOI to the developing country of Jordan and its government's and citizen's use of electronic communication and online shopping will give us insight into the theory, the future of the country, and the application of this theory to other developing countries of our time.

Information Technology Sector in Jordan

In recent decades Jordan has been developing, adopting, and utilizing information and communication technology (ICT). Using ICT provides Jordan with a defined strategy for addressing areas of specific weakness or opportunity, and also for the purpose of improving the role of ICT in Jordan's economic development and job creation. ICT assists in the development of the talent, creativity, and educational skill level of the population.

ICT is one of the major growing sectors in Jordan. ICT must be developed as it affects all aspects of a society. Some of the aspects of society which are impacted by ICT include telecommunications, education, banking, commerce, and employment. Jordan has linked economics with ICT because ICT provides a powerful paradigm for economic development.

Jordan's government has been working on plans and writing policies which further enable technological developments that align with telecommunications and ICT

sectors. By improving the infrastructure, or the means through which information technology products and services are delivered to consumers for local consumption and exports, Jordan will be able to use more telecommunications services.

ICT is a knowledge which is based on education, training, online shopping, and certification. It plays an important role in determining competitiveness. Jordan already uses ICT in the university system; however, the university system is not strong enough to work with the demands of the ICT sector. The ICT sector needs to develop graduates' skills to help make the graduates' skills more relevant and qualified for local ICT companies and to prepare them to develop competitive products. Jordan's technological system also aims to encourage local ICT companies to develop, register, promote, and commercialize their own products and services.

The government of Jordan's ICT focuses on the establishment and execution of policies to leverage ICT as a means for social and economic development and results in using ICT to improve economic activity and job creation. Moreover, the Jordanian government wants to direct national efforts toward local ICT use and increase ICT exports.

Minishi-Majanja (2005) applied DOI to the socio-economic issues of ICTs in the social system. The theory is sufficiently robust in explaining the adoption and diffusion of ICT innovations, more so than any other theory. Minishi-Majanja (2005) sought to find the communication channels which are used in the process of ICT diffusion. Also, Minishi-Majanja (2005) found methods and techniques which are commonly used to

create awareness and prepare researchers to effectively use ICT.

On a more personal level, Tawalbeh (2001) shows that recently in the Hashemite Kingdom of Jordan, personal computers have been a major innovation. This new technology offers an exciting challenge to educationalists. Education is impacted by technology, which therefore impacts social life, culture, and governments.

Tawalbeh (2001) found that it was an effective decision to introduce internet technology (IT) into schools, especially classes regarding computer literacy. Growing popularity and the introduction of IT into schools succeeded in prompting the launching of a course in computer literacy and awareness. Using technology is a response to the demands of the modern society, and it prepares the new generation for the inevitable advances in technology.

Online shopping

The researcher is seeking to find online shopping behaviors and factors which marketers and retailers are able to consider and apply to their advertisements and online shopping interfaces. The information gathered will help to improve online customer service and help online merchants and web designers to develop and improve online environments. The information that this research unearths has the potential to increase the use of the internet for current online consumers in Jordan. Implications of this research have the potential to improve the economy of Jordan as well as other developing countries (CIA World Fact Book, 2015).

Gouws, Oudtshoorn, and George (2011) show how to apply DOI to the products

and services that have a connection with marketing and communication. The three researchers attempt to analyze DOI and look for correlations between the fundamental principles in the diffusion of branding products. The purpose of the research by Gouws, Oudtshoorn, and George (2011) is to depict the successive increase in the number of adopters and predict the continued development of a diffusion process already in progress.

Gouws, Oudtshoorn, and George (2011) found that brands hold a unique challenge in maintaining customers. Customers tend to become complacent with a single brand, and they expect brands to be innovative in designing products and creating trends. Generally, branding causes an individual to adopt only one innovation at a given time, and due to the possible high costs this phenomenon results in the exclusion of another innovation. DOI works in regards to this study, and it can be revisited by a variety of areas in communication, marketing, public relations and public affairs in which the adoption of new ideas and innovations are concerned.

Frenzel and Hariolf (2009) aim to use the innovation diffusion models in easy ways for the audience of marketers and innovation managers who use research to guide their market analyses and sales forecasting efforts. The researchers offer a review of the innovation diffusion methods for both qualitative and quantitative market analyses, as well as the hypotheses and assumptions of diffusion models which constitute the innovation diffusion process. However, innovation diffusion is intended to contribute to the process of how new products and services bring greater choice in the market and help

to develop new practices.

Frenzel and Hariolf (2009) focus on how an individual's attitude influences that person's behavioral intentions, as well as try to understand and analyze college students' online shopping behavior. The researchers examine the variables and factors which in-person marketers and retailers are able to consider and apply easily. The information gathered and studied by Frenzel and Hariolf (2009) helps to improve online customer service. Online merchants and web designers can benefit from the researchers' findings by developing and improving online environments. In turn, use of the web by current online consumers will increase.

Some of the factors which Frenzel and Hariolf (2009) suggest are related to consumer factors and are important for online shopping. These include privacy, security, efficiency, ease of use, convenience, and enjoyment. The researchers then consider marketing factors which are related to the marketing principles and promotion. There are also technology factors which include online buying and selling which depend on the efficiency and availability of the technology. These marketing factors can be used by retailers to increase sales and profits, and by consumers to enjoy a better internet shopping experience that is more convenient, easy to use, and efficient. Finally, this research provides a spark of hope that all internet shoppers will eventually view internet shopping as safe with adequate privacy protection.

Chiu, Lin, Sun, and Hsu (2009) show the factors that make online shopping a success. The aim of the researchers is to see customers' loyalty and intentions towards

online shopping. The researchers investigate customer satisfaction and customers' desire to continue shopping with the same store or seller. There are two variables in the technology acceptance model (TAM): trust, and fairness. These variables combined construct a model for investigating the motivations behind customers' loyalty and intentions in regards to online shopping.

Electronic sellers should look for ways to attract and increase loyalty from customers. Sellers should also improve the technological attributes of online shopping websites. Having a website with good technological attributes does help to increase consumers, but it does not guarantee successful online shopping. Online shopping has higher levels of uncertainty than traditional shopping. Online transactions lack the physical assurances of traditional shopping experiences because websites retain customers' financial information. Another reason that customers may not be loyal to an online shopping website is if that website has a history of including incomplete or inaccurate information about products being sold.

Chiu, Lin, Sun, and Hsu (2009) measured individuals' contentment and sought to find solutions which will help to increase the number of customers in online shopping. The researchers remark that stores with a web presence should seek a fair balance between the orders and sales of their current inventory.

Researchers address online shopping issues which relate to fairness in order to improve customers' satisfaction. The researchers named three dimensions of fairness: fairness of outcomes (distributive fairness), fairness of decision-making procedures

(procedural fairness), and fairness of interpersonal treatment (interactional fairness). Online vendors which are prepared to consider all of these forms of fairness will have higher levels of customer loyalty.

Online Shopping in Jordan

Mohammed (2014) indicates that the frequency of online shopping is still below expectations in developing countries though the number of internet users is growing. With the availability of high speed data networks, advanced technology tools, and countless online shopping websites the internet has become increasingly important for businesses achieving competitive advantages via electronic commerce on the World Wide Web. Business, shopping, and consumer behavior have changed with e-commerce. Products can be sold anywhere at any time by anyone. For example, customers needing products can simply browse to shop and pay bills online.

Jordan is one example of a developing country which has grown in the number of internet users, although it has not reached the expected number yet. In 2011, it was around 8.20 percent of the total population of Jordan, which is considered a low number compared to other developing countries. Most internet users in Jordan are young people.

Mohammed (2014) seeks to identify key factors which impact online shopping intentions among young customers, as well as to develop and test a model that explores relative impact of these factors on online shopping intentions among young Jordanian citizens. This will help sellers and marketers find some planning strategies for online business and improve the state of e-commerce in developing countries, particularly

Jordan. Mohammed (2014) aims to find not only the factors which impact the online shopping intentions of consumers, but also the consumer's perception of risks.

E-banking in Jordan

Al-Qirim (2007) shows that there is a non-governmental organization (NGO) in Jordan. This NGO is trying to utilize electronic commerce (EC) to make the business processes more efficient and facilitate connections with international businesses. One impact of EC being utilized by this NGO has been an increase in sales and profits. Individuals who work in this organization believe that the NGO can create new opportunities to help establish their business processes and enable greater efficiency in their operations.

The NGO managed to achieve their goals in Jordan. Despite his initial feelings, King Abdullah II is working with the NGO to advance Jordan's e-government systems supporting successful adoption of EC. Initially, the NGOs faced problems during the adoption and implementation process. Eventually though, governmental entities, even though they were not related to this NGO, achieved the full success of utilizing EC.

King Abdullah's empowerment of EC demonstrates the role that government involvement plays in developing countries when motivating NGOs as well as governmental organizations to adopt EC. On the other hand, the unavailability of an e-payment gateway was a problem in Jordan. There were security concerns and threats of digital viruses. The country was also facing a limited number of Information Technology (IT) staff. Despite facing these problems, NGOs proved to be a successful and beneficial

system, providing great opportunities for the IT industry in Jordan. The empowerment of EC by King Abdullah allowed for E-banking to begin in Jordan.

Abbad (2013) attempts to describe the reasons why some individuals are inclined to use E-banking systems, but others are not. The researcher studied some factors which might cause individuals to become more apt to use a technological advancement (e-banking) using the Technology Acceptance Model (TAM). Abbad (2013) attempts to contribute to the development of Jordan's economy by focusing on the banking industry IT, which is the key to helping Jordan to more successfully utilize the internet.

Banking customers use information systems to make financial transactions efficient, useful, and easier to understand. Also, the important factors that affect customers' adoption of e-banking in Jordan are ease of use, subjective norms, security, trust, and internet experience. E-banking technology has different services such as automatic teller machine (ATM) services, direct deposit, automatic bill payment (ABP), electronic transfer of funds (EFT), and computer banking (PC banking) which give the customer many reasons to adopt the innovation.

E-banking in Jordan is dynamic and liberal. There are 23 banks, 8 of which are subsidiaries of foreign banks, and 2 are Islamic banks. Jordan policymakers have written a banking law that aims to improve e-banking, protect depositors' interests, and diminish money market risks. Most banks in Jordan have started to use e-banking services, which are considered a major development in Jordan. For example, automated check clearing, the use of magnetic check processors, unified reporting forms, and electronic data-

transmission networks have helped to progress and update Jordan to a comparable level to the rest of the world.

Abbad (2013) suggests that customers will be more likely to use e-banking when they perceive that e-banking is useful and easy, so they will feel positive influences from others. The study explained that 75.60% of the Banking Institutions (BI) use e-banking along with traditional counter services.

The condition of the information technology and online shopping will be shown by research and through the examination of the following research questions.

RQ1: What age, gender, group of people use technology communication in Jordan?

RQ2: What kinds of electronic communication technology tools are used in Jordan?

RQ3: Has electronic communication technology improved the lives of Jordanian individuals?

RQ4: Is electronic communication device usage correlated to the economic status in Jordan?

Results

The research data were collected in November 2015. There were 63 respondents from Jordan who answered all 40 questions on the survey. All of the questionnaires were returned in English. Therefore, there is a sample of 63 that was analyzed and used to answer research questions.

RQ1: What age, gender, and group of people use electronic communication technology in Jordan?

The results of the survey show that all respondents use the TV and cellular telephones more than other technology. The largest percentage of internet and cellular telephone usage is in the 18-25 age group, which was 34 respondents with 54%. The second largest group was 25 respondents from the 25-35 age group with 39.7%. Only 4 respondents representing 6.3% indicated their age being from 35-45 year old. There were no respondents from the 45-65 age group. See Figure 3.

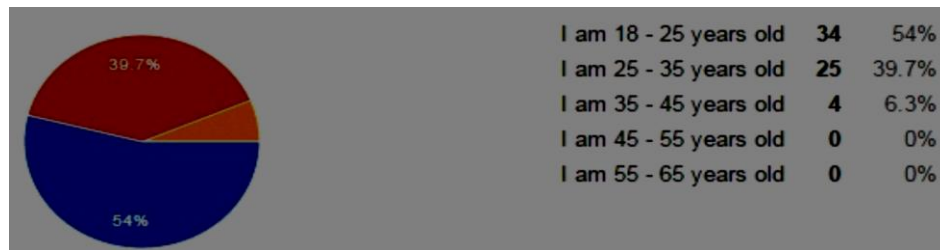


Figure 3: Respondent Age Demographics of Jordan

Amongst all participants, there were 39 male respondents (61.9%) and 24 female respondents (38.1%). See figure 4.

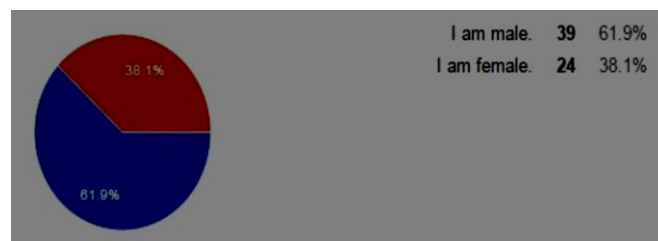


Figure 4: Respondent Gender Demographics of Jordan

Most electronic and cellular phone users have completed institute, college or university education according to the surveys collected, which created 76.20% or 48 respondents. Eight of the respondents have completed postgraduate school (MA, MS,

Ph.D, MD, LD) with 12.70%, and 9.5% have completed preparatory or secondary school institute leaving only 1% having completed only primary school. See figure 5.

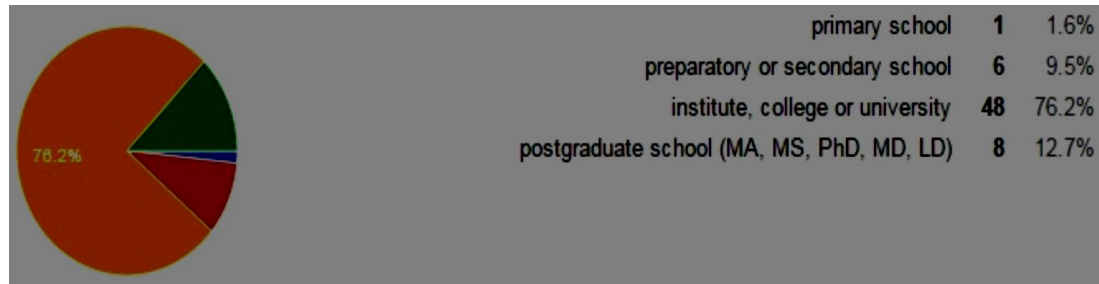


Figure 5: Education Level Completion

RQ2: What kinds of electronic communication technology tools are used in Jordan?

The results of the survey show that fourteen types of electronic communication media were registered as used by Jordan people. The media included cellular (or mobile) phones, online chat rooms, radio, television, VCR, satellite dish, digital camera, voicemail, e-commerce websites, banking kiosks or money cards, internet listservs, internet bulletin boards, email accounts, and Proxima (or other presentation devices). The entire sample indicated that they use cellular phones. Email is used by 57 respondents, 90.50% of the sample. There were 85.70% or 54 respondents of the sample showing that television is used. Radio, satellite dish, and digital camera are also used widely with each technology being used by over 65% of the sample. Proxima (or other presentation devices) has the least percentage of the electronic communication usage which constituted 14.30% of the sample. See figure 6.

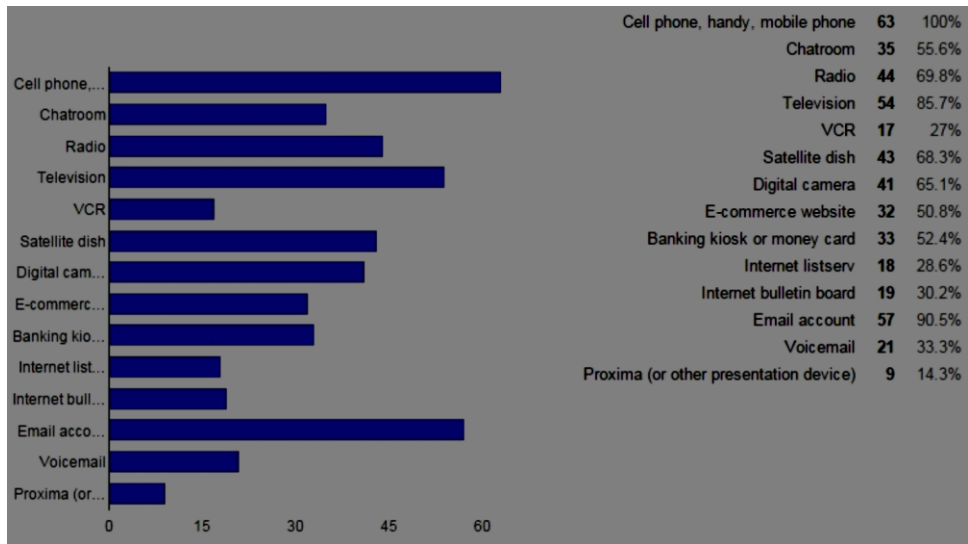


Figure 6: Types of Electronic Communication Used in Jordan

RQ3: Has electronic communication technology improved the lives of Jordanian individuals?

The majority of respondents (78.50%) marked that electronic communication technology “sometimes” or “tremendously” improves their lives. Nearly half, or 46.40%, of the sample indicated that electronic communication technology “sometimes” improves their lives. Nearly one-third, or 32.10% of the sample indicated that electronic communication technology “tremendously” improves their lives. Over one-fifth, or 21.50% of the sample indicated that electronic communication technology had “hardly ever” or “not” improved their lives. See figure 7.



Figure 7: The Impact of Electronic Communication Technology on Life

When asked to indicate the impact of electronic communication on their lives, the respondents were given the opportunity to share qualitative remarks as to why they indicated the positive or negative impact of electronic communication technology. The specific responses included:

“Mainly for work reasons, emails are also concrete documents when working with clients”

“It made communicating much easier and cheaper; I also made new friendships through the electronic communication”

“Got me closer to my family and friends that aren't in the same country”

“Sometimes helps me with researching and studying. In addition, helps me make new friends from many different countries”

RQ4: Is electronic communication device usage correlated to the economic status in Jordan?

The data collected from the sample indicates that electronic communication usage is not immediately correlated to the economic status in Jordan. The sample included 53 people who responded to this question. Over one-fourth, or 28.30% of the respondents

indicate that they have a fixed income/pension less than 1,000 USD per month, and 26.40% of the respondents indicated that they have no reliable income. However, 11.30% of the respondents chose to respond with, “I am wealthy by my country's standards”. See figure 8.

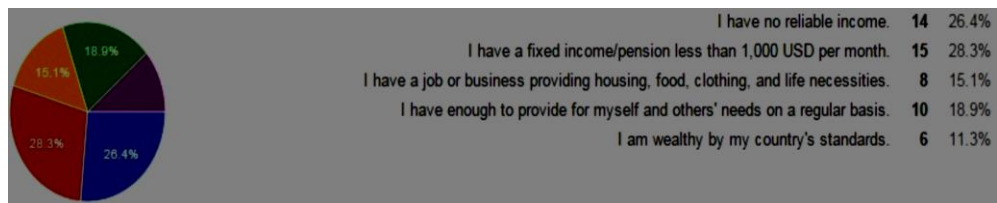


Figure 8: The Economic Status of Jordanian Electronic Communication Technology Users

Summary

Diffusion of Innovations theory, when applied to the developing country of Jordan, shows that there is still diffusion of innovations happening throughout the country. The knowledge of innovations is vast because King Abdullah accepts the technology the population has been persuaded to make the decision to adopt the innovations, the technology has been implemented, and as soon as the population is saturated with the innovation, confirmation will have been attained.

CHAPTER 5

INTERNET AND MOBILE PHONE USAGE IN SAUDI ARABIA

In this chapter the author examines Saudi Arabia, another Arabic country which uses electronic communication technology to improve the country. In order to be one of the most effectively developing countries in the world, Saudi Arabia has used different kinds of technological communication and applied these devices in many sectors around the country. Saudi Arabia is looking to develop the education sector similar to the United Arab Emirates. On the other hand, both countries have different plans for their communication technology strategies.

Introduction

Information communication technology (ICT) brings considerable benefits to the learning process. In the U.S. and the UK, trends are changing, so more teachers have been encouraged to use ICT in their classrooms and to integrate this kind of technology within the subjects of the national curriculum to help convey educational materials to students. ICT is considered an important skill in the educational process. There are several aspects to integrating ICT in education, such as, sound, vision, text, and numerical data which may be beneficial in promoting successful learning. Moreover, using computers gives teachers more varied options that were not available in the past, such as the inclusion of individualized computer activities during parts of the class period. Furthermore, using ICT in education may have a positive effect on students that show increased commitment to learning.

While these movements throughout the West are helping to develop education, some countries have progressed at a different pace. For example, in Saudi Arabia, a majority of education came from within the country's borders. As the country is currently in a stage of educational reform, the Ministry of Education has been looking into technology-based ways of advancing and improving the delivery of education in Saudi Arabia.

Literature review

The Educational System in Saudi Arabia

Because Saudi Arabia is a developing country, the government is currently trying to find effective methods of advancement. For example, a sub-department of the Ministry of Education has been developing the Saudi Arabia Culture Mission (SACM) program since 1996. This program was created for advancements in the Saudi Arabian university level educational system, particularly in regards to their utilization of technology. Although there are still technological gaps, the government is making a concerted effort to continue developing the Saudi post-secondary education system. While there are ample financial resources available to purchase educational technological devices, the issue is truly ensuring that they can be used and implemented appropriately and effectively. As a result, the government continues to research and investigate the various methods and technologies which can be used for communication purposes in the university level education system.

ICT at Universities

ICT usage in university settings may be different than ICT home usage in terms of time spent, applications used, and internet access. The difference in settings also means that computer access in schools could be limited and the software needed to meet educational objectives may be lacking because even if students own this kind of technology, they may not use it effectively to learn.

Because students do not always take their technological devices to class, they may not have a chance to properly use them in the educational contact. When used in the class, however, they can be beneficial. For example, Kuznekoff and Titsworth (2013) show how mobile phone usage affects education. They examined the impact of mobile phone usage in classrooms during lectures and student learning. In the class sessions tested in this research, mobile phones were not just for voice communication, but also students used it to access the internet, send or receive text messages, check email, and even video chat to communicate with each other.

On the contrary, Kuznekoff and Titsworth (2013) also examine if using mobile phones such as texting or posting to a social network site has negative impacts on students' education behavior like note-taking behaviors and subsequent performance on exams. Both traditional and modern instructors face many challenges as they compete for getting students' attention more than the technological devices they carry. Many instructors have concerns of students using their mobile devices to text, play games, check Facebook, "tweet", or engage in other activities instead of class work. Kuznekoff and Titsworth (2013) have used the Information Processing theory as a basis to show that

texting can cause distractions which hamper student learning. In conclusion, Kuznekoff and Titsworth (2013) show that using mobile phones makes students interact more, but this interaction does not imply changes to learning culture. They explain that this is due to the idea that a classroom should have a teacher present, so the learning culture cannot be changed quickly as the preference for traditional teaching style is still deeply rooted in the students' minds.

Electronic Education Materials

Similarly, Hyman, Moser, and Segala (2014) discuss how mobile information technology is changing the education landscape in the world. Mobile content management systems are being developed for mobile education and applications that work with the internet stand-alone mobile applications. As a result of that usage, consuming digital documents from online content providers and digital libraries in formal education is often easier than using paper documents. A research framework for instructional technology and improving education by implementing formal learning using a mobile device is presented by Hyman et. al., and they suggest that there are a number of benefits in using mobile phone technology to deliver educational materials, and specifically, they promote the use of electronic readers, tablet computers, mobile computing, and digital libraries (2014).

Hyman et. al. (2014) use electronic reading platforms for mobile learning. E-readers and tablet computers are used widely by college students to make learning easy. Most higher education learners pay for instructional content and try to find the cheapest

textbooks and materials. However, using these mobile information technologies in the education market and accepting digital books costs much more money. Despite the unwanted extra costs, electronic readers encourage students to work together because students can highlight particular important ideas and make comments for others, so because of this, Hyman et. al. reaffirm their support for the use of technology in the classroom (2014).

Hyman et. al. (2014) show that there are some differences between traditional materials (e.g. printed books) and technology-based materials (such as electronic readers, tablets, laptops, and internet applications/programs). For instance, electronic devices help students work together and support each other. In research which investigated the key differences between two kinds of technology, Hyman et. al. (2014) also further elaborate on the differences between the two types of materials. Namely, electronic devices became a hindrance because when learners used their own mobile devices and each device is different, they cannot always connect them together. Each device has a different operating system, so this can be another potential downside to their use in the classroom. When properly synced, though, the issue ceases to remain problematic for instructors.

Even though the use of educational technologies is becoming more common throughout fully developed countries, other parts of the world are still continuing to evaluate the effectiveness of utilizing mobile devices. In particular, most of the Arabic region, which tends to be more traditional, has continued to prefer traditional teaching

methods until recently. As more research is conducted, the cultural attitudes towards modern educational methods will keep developing. Al-Kahtani, Ryan, Theresa (2006) discuss the use of internet in Saudi Arabia. Several citizens do not support the internet use in Saudi Arabia, since they try to protect the traditional culture. They also believe the internet can change the traditional way they are able to work, contribute to their society, and help people develop their horizons. Al-Kahtani, Ryan, Theresa (2006) analyze the advantages and disadvantages of female faculty using the internet. The internet has some benefits like links people and resources with no consideration for identity, religion, gender, or handicaps. The internet has been used as a means for reaching people who cannot travel to other place to expand their opportunities and increase their senses of capability.

Internet usage

Internet has become a part of the people daily life and it is spreading quickly in Saudi Arabia. The internet service use is in different social categories, for example, the internet access communication system used for the connection, and the technical attributes of the internet connection. Saudi Arabia tries to improve the speed and quality of the internet connection, and use a communication system to connect to the internet.

Oyaid (2010) discusses that computers have been used as an educational tool, and computer skills were utilized and taught in Saudi Arabia. However, this was strictly within the context of a computer skills classroom. The use of computers and other technological devices has never expanded into the classrooms of other subject areas.

This is despite the fact that even though this technology is present in the country, it is never utilized in the classroom for communication purposes. Oyaid (2010) examined the attitudes of teachers and students towards computer usage and how to use ICT.

Although computers have been used in some classrooms for more than twenty years, they use it for simply teaching basic computing skills. Teachers need to use ICT in a creative manner and apply ICT in the context of teaching and learning to get the full effect and benefits of communication technology implementation. Computers also help spread awareness and understanding, so students' perceptions will assist in improving the quality of education provided.

Problems in KSA classroom

Previously, computer classes in Saudi Arabia schools were used as an extra class without graduation credit. In 2005, the Ministry of Education's policy forced teachers to use computers to teach, but they were met with strong resistance from teaching staff. Also, even though the Ministry regularly evaluates teachers to see if they are using computers in their teaching practice, hardly any teachers utilize technological devices in their classrooms.

Recently, there were technological advances in educational technology to examine students' perceptions of ICT, and cover students growing usage of computers outside of the schools. Research has also expanded to cover new areas, such as the growing usage of computers outside schools and using the internet, but teachers in Saudi Arabia still do not utilize technology purposefully. The Ministry tested some high school

students to measure their attitudes about using ICT in classrooms and found that students have positive attitudes towards computers. In general, students think computers have a positive effect on learning and would like to learn more about them.

Oyaid (2010) promotes the use of ICT inside and outside schools in Saudi Arabia. In this study, the author says there should be more availability of internet access in Saudi Arabia, and the research write up provided some suggestions of internet activities to help students to use computers. The internet based activities were not carried out in schools; therefore, the suggestions were focused on completing educational activities in the home, since there is no internet access at schools.

Meloncon (2007) also addresses how teachers should use online settings for technical communication (readiness to teach online). Using online settings, teachers explain more about the subjects. For example, teachers explain the ideas learned from cultural geography of reading and interpreting landscapes from the internet, or research for some pictures to make students understand easily. Using this framework of readiness to teach online is a step towards developing more powerful education settings. Also, teachers will be allowed to engage in technical communication online. For example, teachers can communicate with their students online using email interfaces or platforms like Blackboard.

Meloncon (2007) found that teaching online allows students to meet in a face-to-face class and interact online. Students can do readings, assignments, or classwork online together. In addition, teachers also have positive feelings in the classroom in regards to

using online settings and changing the traditional delivery. The social comfort level of using technology for communication could be higher for the instructors. To decrease this discomfort, the students and the instructor can come to a mutually respectful agreement about when communication will occur, how it will be accessed, and who can participate in this educational communication.

Meloncon (2007) shows that there is the need to improve readiness to teach online with changes such as professional development principles and processes for assisting educators to teach using online applications. Online instructional contexts, particularly conferencing, require the ability to access this communication technology. With this, web cameras, microphones, and a strong internet connection are the basic necessities. Instructors of technical communication also need to approach online teaching and learning with expertise.

Kentnor (2015) has found that online education is delivering knowledge by electronic communication. Developments in educational technological communication should be continued to understand the progression and advancements in educational technology. Also, the researcher showed some different methods which were used to deliver knowledge to improve the quality of education and educate students. These include online communication applications, such as email and virtual educational platforms. This communication technology can utilize a combination of internet-based tools, such as correspondence, audio, video, computer, and the internet.

Virtual Education

Ketnor (2015) studied correspondence via virtual education, which is a form of distance education in which the teacher and students are physically separated. This method is providing education for adult students who receive lessons and homework through the mail, or some other device. The aim of this method is to create educational opportunities for the students who cannot access a traditional educational institution.

Online education is one of several types of distance education which uses computers and the internet as a way to deliver information. The use of online education will help to educate school administrators by using online programs to train employees and students, so teachers can offer online education programs through the internet. Ketnor (2015) argues that online learning should be provided in education to explore educational alternatives for those unable to attend traditional classes in the classrooms.

About 15-20 years ago, several universities and colleges began experimenting in online courses. Ketnor (2015) discussed that there was a rapid growth of online education after that time. However, there are a few factors influenced in online learning such as the lack of understanding of online pedagogy and online learning styles. Some faculty have no ideas how they can use online courses.

Al-Shehri (2010) reported that the Kingdom of Saudi Arabia (KSA) has grown in higher education and e-learning recently. Saudi Arabia's Ministry of Education has provided e-learning in one university and five colleges through 5 years, and given 800 scholarships that have been awarded every month for overseas studies. In addition, the Ministry established a national center for e-learning. E-learning has become an important

aspect to develop in Saudi Arabia due to the recent influx in popularity of online education. E-learning helps to examine many current ideas and future developments, but it also provides barriers to teachers who are reluctant to adopt e-learning communication technology in KSA.

Al-Shehri (2010) shows that the market in Saudi Arabia for e-learning is the largest market and economy in the Middle East. Saudi Arabia has expanded their movements to implement communication technology in higher education and e-learning. The development toward e-learning is fast and strong. The Ministry of Education has spawned several university-based initiatives to offer and use e-learning in the Kingdom of Saudi Arabia. For example, orientation sessions and campaigns on how to effectively use technology for communication purposes, how people can use e-learning at schools and universities, short and long courses for teaching interested participants, establishing units in universities and educational organizations to explain e-learning, opening a national center, and the launching of local programs that aim at national certification for e-learning initiatives.

Al-Shehri (2010) found that all participants from communication technology studies show that they see themselves as being in an advanced stage when they use e-learning for educational communication. This positive aspect of educational communication technology supports the thesis that e-learning should develop in KSA. E-learning should be used in Saudi Arabia, but this field of study still requires further research before it can be implemented successfully. The implementation of an effective

e-learning system poses many challenges, but having a clear vision and strategically planning the options and alternatives will help to not only make it a cost-effective option, but also a learning enhancement tool.

Research Questions:

RQ1: How long have you lived and studied outside Saudi Arabia?

RQ2: What are the advantages and disadvantages of using electronic communication in education?

RQ3: Has electronic communication improved education?

Results

The data of this survey were collected in February of 2016. There were 102 respondents who participated from Saudi Arabia. Seventy- two of them study outside their country, and 30 of the respondents study inside Saudi Arabia.

Age and Gender Demographics

The survey results show that all respondents use the internet and electronic communication in their daily lives, but 35 of them use this technology specifically in education. Fifty-five of the respondents were 25-35 years old, and this age group constituted the largest percentage of internet and communication technology usage. Twenty- six participants were of the 18-25 age group, and 14 of the 35-45 group. Only five respondents were in the 45-55 year old category; this made up the smallest ratio of the survey. Here, gender demographics show that there were more male than females who participated in the study. See figure 9.

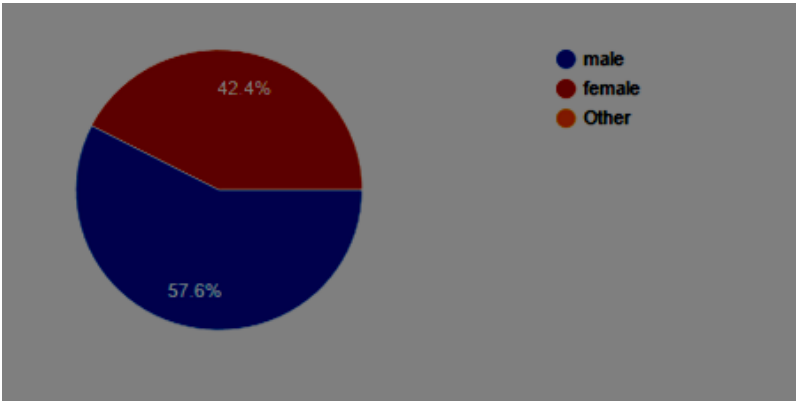


Figure 9: Gender demographics

RQ1: How long have you lived and studied outside Saudi Arabia?

Over half of the participants studied outside Saudi Arabia and use electronic communication in education which equates to 72 of the participants while 30 participants studied inside Saudi Arabia. Furthermore, thirty one respondents have studied for five years, 21 participants have studied for 3 years, and 15 of them for one year. See figure 10.

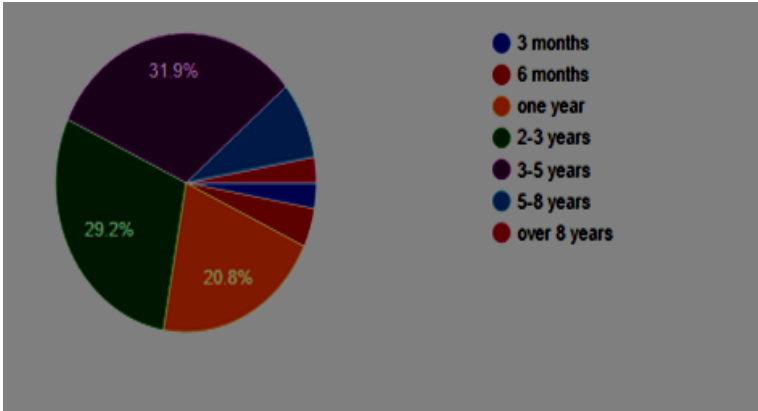


Figure 10: Years of Living Outside KSA

Moreover, Saudi students have used electronic communication such as mobile phones in education. The respondents have tried different methods in education which they have

not used in Saudi Arabian schools. The study shows that, there are seven electronic communication media that were recorded as used in Saudi Arabia. Figure 11 shows the media use of respondents in Saudi Arabia. These include: mobile phone, email account, online chat room, satellite dish, digital camera, radio, and e-commerce.

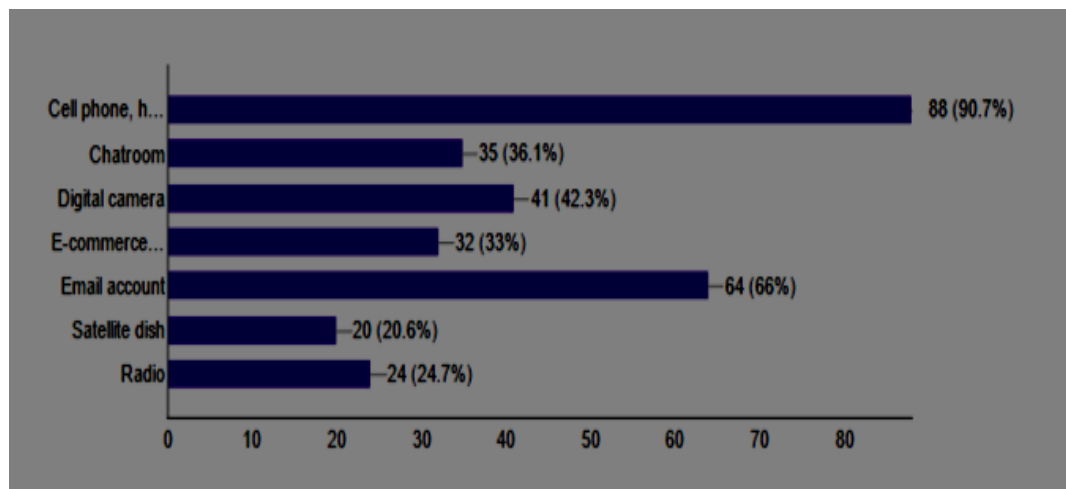


Figure 11: Types of Electronic Communication Used in KSA

RQ2: What are the advantages and disadvantages of using electronic communication in education?

Forty-two of the respondents agree that using electronic communication (mobile phones) in education is beneficial and they said it has several advantages like:

- 1- "Helps learning in a different study environment."
- 2- "Tries different education method."
- 3- "Good communication and find much more information."
- 4- "Helps teachers to provide some information through electronic communication."

On the other hand, some disadvantages which they have noticed are:

1- " Hard to understand if you study another language.”

2-" May be difficult to use for some students.”

RQ3: Has electronic communication improved education?

Most of Saudi Arabia students who tried electronic communication believe that electronic communication (mobile phones) has improved their education. Thirty-five of the respondents found education more interesting because of electronic communication. Mobile phone helps to focus and pay more attention to the subject, but 45 of the Saudi Arabian students that responded believes that electronic communication sometime improve education.

Summary

These results indicate an overall preference for communication technology in education. Research by Al-Kahtani, Ryan, and Theresa (2006) stated that most people in Saudi Arabia do not like to use mobile phones or any electronic communication devices in educational settings. However, this study showed that even though the participants from Saudi Arabia had not used education communication technology, they still indicated that they felt it would be beneficial to their learning. Similarly, the Saudi students studying in America had used technological communication in an educational context, and they reported that they also felt it was helpful in enhancing their learning.

CHAPTER 6

DISCUSSION

In recent years, the Arab world has developed in several areas, including political, economic, cultural and educational. Also, there are changes in the fields of information and communication, culminating in a marriage between computers and techniques of communication technologies. The result of this scientific and technological shift is the emergence of the Information Society. This is the economy and society which constitute the basic information and strategic resources for the development of many areas such as education, medicine, and the standard of living for the people.

Some information scientists believe that the developments in the field of an information and communication technologies which have occurred in the last two decades will lead to the improvement of Arab societies that can produce new advancements in the fields of communications and information technology. This will help them to relate to the world through modern techniques. Moreover, the Arab countries seek to narrow the digital gap between themselves and more developed countries. Additionally, they are working to create an Information Society in the Arab world to achieve economic and social development. In order to keep pace with the tremendous progress in other areas of the world, Arabic countries have focused heavily on technological development, especially related to communication by using information and electronic communication technologies in various fields.

In 2011, the Arab countries' utilization rates of information and communication

technologies rose, particularly in the education section. Modern technology has provided new education programs and tools which help to develop teaching and learning processes. As the results of this study show, these advances have also provided an opportunity to improve learning methods and helped to raise the students' interest and encourage them. The technological revolution is continuing to develop in regards to its breadth and proliferation. Various versions of computers and other communication technologies have undergone a leap, and inevitably challenged all of their predecessors regarding innovation and tools which are available to be used in the educational process. There are multiple areas of computer use in education. They are used to aid in the development of the methods used in teaching by contributing through a number of processes which aim to assist in achieving the objectives of the teaching process.

Summary

RQ1: What age, gender, and group of people use technology communication in United Arab Emirates, Jordan, and Saudi Arabia?

The results of the study showed that all respondents from the United Arab Emirates use electronic devices. People who are 25-35 years old are more likely to use the internet and cellular phone than any other technology, which was shown with 34 of 60 respondents in this age group at 56.67%. Sixteen respondents from the 18-25 age group use technology. Only 8 respondents at 13.33 % of these 35-45 year olds use technology. Half of the respondents were male, half were female. Eight were not specified. Moreover, most UAE respondents have completed institute, college or university school that

constituted 56.90%. Education level completion was 17.00 % for graduate school (MA, MS, Ph. D, MD, LD), and 8.00% for only high or secondary school.

In contrast, the largest percentage of Jordanian internet and cellular telephone usage is in the 18-25 age group, which was 34 respondents with 54%. The second largest group was 25 respondents from the 25-35 age group with 39.70%. Only 4 respondents, representing 6.3%, indicated their age being from 35-45 years old. There were no respondents from the 45-65 age group. Also, there were 39 male respondents (61.90%) and 24 female respondents. Most electronic and cellular phone users have completed institute, college or university education according to the surveys collected, which created 76.20% or 48 respondents. Eight of the respondents have completed postgraduate school (MA, MS, Ph.D, MD, LD) with 12.70%, and 9.50% have completed preparatory or secondary school institute leaving only 1% having completed only primary school.

On the other hand, the survey results show that all respondents from Saudi Arabia use the internet and electronic communication in their daily lives, but 35 of them use this technology specifically in education. Fifty-five of the respondents were 25-35 years old, and this age group constituted the largest percentage of internet and communication technology usage. Twenty- six participants were of the 18-25 age group, and 14 of the 35-45 group. Only five respondents were in the 45-55 year old category; this made up the smallest ratio of the survey. Here, gender demographics show that there were more males than females who participated in the study.

RQ 2: What kinds of technology tools are used in United Arab Emirates, Jordan, and

Saudi Arabia?

The result was shown of the most types of electronic communication media frequently used by respondents in United Arab Emirates. These technologies include: mobile phone, email account, online chat room, television, satellite dish, digital camera, radio, e-commerce website, banking kiosk or money card, the internet listserv, VCR, the internet bulletin board, voicemail, and Proxima. In United Arab Emirates, 93% (56 respondents) use a mobile phone and 81.67%, or 49 respondents use television. Banking kiosk or money card, VCR and Proxima (or other presentation devices) have the smallest percentages of the electronic communication usage with 5%. The results showed that the main reasons for using electronic devices in United Arab Emirates were communicating with other people and having an easy way to reach information about the world.

However, the entire sample indicated that Jordanian people primarily use cellular phones. Email is used by 57 respondents, 90.50% of the sample. There was 85.70% or 54 respondents of the sample showing that television is used. Radio, satellite dish, and digital camera are also used widely with each technology being used by over 65% of the sample. Proxima (or other presentation devices) has the least percentage of the electronic communication usage.

The Saudi Arabia similarly, 42 of the respondents agree that using electronic communication (mobile phones) in education is helpful and has a number of useful applications. For example, learning in different environments becomes easier with electronic communication. Similarly, it provides variety, which helps to keep learning

interesting and new. Additionally, with the assistance of mobile electronic communication devices, students can access information from the internet, which can help to broaden the perspective of the topic at hand. However, there are also some notable disadvantages, as noted in the results from the studies of Jordan and UAE. These include user difficulties with application functionality or issues with language barriers if the electronic devices are only available in the students' non-native language(s).

RQ3: Has electronic communication technology improved the lives of Emiratis and Jordanian individuals?

Results indicated that individual lives have developed by using electronic communication in United Arab Emirates. However, the traditional way, which is visiting and spending the whole time with family and friends, was used in United Arab Emirates between individuals. The way that people communicate has changed by using different technology. Twenty respondents chose “sometimes” in questionnaires sent to United Arab Emirates people with 57.14% of all participants. The two main reasons of their answer were first, “amazing and easy to communicate with families and friends,” and second, “save time and fast to communicate with others.” Moreover, 12 respondents replied “tremendously” (34.29%), 1 respondent chose “hardly ever” (2.86%), and 2 respondents replied “not”(2.71%).

Similarly, the majority of Jordanian respondents (78.50%) marked that electronic communication technology “sometimes” or “tremendously” improves their lives. Nearly half, or 46.40%, of the sample indicated that electronic communication technology

“sometimes” improves their lives. Nearly one-third, or 32.10% of the sample indicated that electronic communication technology “tremendously” improves their lives. Over one-fifth, or 21.50% of the sample indicated that electronic communication technology had “hardly ever” or “not” improved their lives. As the results indicate, a majority of respondents agreed that technology was useful, yet others seem to have the same ideas as the Emirati respondents in saying that they are not as passionate about utilizing technological communication devices.

RQ4: Is technology communication used correlated with economic status in UAE and Jordan?

The electronic communication usage is not correlated to economic status in United Arab Emirates. The electronic device users who have a job or business providing housing, food, clothing, and life necessities were 46.94%. Those who considered themselves wealthy by UAE standards were 42.86%. These people were students and teachers who either live in United Arab Emirates or study abroad.

Comparably, electronic communication usage is not immediately correlated with the economic status in Jordan. The sample included 53 people who responded to this question. Over one-fourth, or 28.30% of the respondents indicate that they have a fixed income/pension less than 1,000 USD per month, and 26.4% of the respondents indicated that they have no reliable income. However, 11.30% of the respondents chose to respond with, “I am wealthy by my country's standards.” Therefore, it is possible that income and funds available are affecting the respondents' likelihood of using technological devices.

This study shows that each country in the Arabic Gulf area uses electronic communication differently. United Arab Emirates has developed in the education sector by using different electronic communication technologies and looking to better the education system. Money spent on improving education technology is one of the highest in the UAE. The United Arab Emirates is seeking to move towards the transition to digital learning in the classroom with use of the smart learning programs and tools in public schools. According to Ghias (2013), there is an initiative to improve academic standards in UAE by 2021 as part of a vision for nationwide development. This is predicted to assist the country in adapting to developments made in other parts of the world, particularly with scientific innovation and critical thinking. Therefore, this leads to the research question which specifically addresses the United Arab Emirates.

RQ 5: Do people prefer to use electronic communication to communicate and form a relationship in United Arab Emirates?

People in United Arab Emirates prefer to communicate personally more than communicate by using electronic communication. The study showed that 45 respondents prefer to communicate in person with 86.54%. There were 37 respondents who prefer to communicate by telephone with 71.15%. Most respondents like to form and create new relationships online (46.15%), and some of them never meet new electronic friends face-to-face (40.38%). However, the results showed that the traditional way to meet or create relationships, which is face-to-face interpersonal communication, is still important in United Arab Emirates.

While these movements in the world to develop education, some countries have progressed at a different pace. In Saudi Arabia, a majority of education came from within the country's borders. As the country is currently in a stage of educational reform, the Ministry of Education has been looking into technology-based ways of advancing and improving the delivery of education in Saudi Arabia.

Moreover, this research intended to clarify the ideas and attitudes towards both traditional and modern educational environments: those with and without the use of educational technology, so Saudi students had these questions:

RQ7: How long have you lived and studied outside Saudi Arabia?

The majority of participants studied outside Saudi Arabia more than one year and use electronic communication in education which equates to 72 of the participants while 30 studied only in Saudi Arabia. The respondents have tried different methods in education which they have not used in Saudi Arabian schools such as mobile phones, tablet, and computer.

RQ8: What are the advantages and disadvantages of using electronic communication in education?

Forty-two of the respondents agree that using electronic communication (mobile phones) in education is beneficial and they said it has several advantages like:

1. Helps learning in a different study environment
2. Tries different education method
3. Good communication

On the other hand, some of disadvantages which the respondents have noticed are:

1. Hard to understand if you study another language
2. May be difficult to use for some students

RQ9: Has electronic communication improved education?

The majority of Saudi Arabia students who tried electronic communication believe that electronic communication (mobile phones) has improved their education. Most of the respondents found education more interesting because of electronic communication. Mobile phones help to focus and pay more attention to the subject.

This study found a different result from other studies. Research by Al-Kahtani, Ryan, Theresa (2006) stated that most people in Saudi Arabia do not like to use mobile phones or any electronic communication devices in educational settings, and these researchers further investigated the perceptions of women in Saudi Arabia that use internet. A small group of female citizens did not support internet use in Saudi Arabia, as the fear is that it will interfere with long held traditions and customs. This group believes the internet will destroy traditional culture, especially if people become addicted to the internet and live in the virtual world. However, some open-minded women think the internet can advance their occupational abilities, contribute to their society, and help Saudis broaden their horizons.

Limitations

Based on previous research and how electronic communication technologies are

used differently in Arabic countries, there were some limitations in this research. First, the sample sizes of United Arab Emirates, Jordan, and Saudi Arabia participants are not equal. There were 60 respondents of UAE, 63 respondents of Jordan, and 102 of Saudi students who study in and out Saudi Arabia. There is a difference also between the number of men and women. Secondly, since these three countries use electronic communication in different sectors, they had some questions which were different, yet others were the same. Those questions which were different in the surveys make the study difficult to compare and analyze the results from the three countries. Third, the research was considerably lacking rural residents as respondents. All participants of the survey were residents of urban areas, which have more development of technology; therefore, the study did not show the difference between people who live in rural and those who live in the urban locations. Do people who live in the rural area use the same technology as people who live in urban area? This is a question that still needs to be answered.

Strengths

This research is about how electronic communication technologies are used in Arabic countries, and what the advantages of using them to be a developing county as well as other developing countries. Therefore, there may be other benefits, more than the research has already explained. These may include finding a job or improving social connectivity. Second, this study could show what the advantages and the disadvantages are in regards to using electronic communication in each of the three Arabic countries.

Third, the significance found in the results also suggests that the studies were conducted with correct methodologies. Finally, this study found that Saudi Arabian citizens like to use electronic communication in their lives and education which is different from what another study by Al-Kahtani, Ryan, Theresa (2006) found, which indicated that most people in Saudi Arabia do not like to use mobile phones or any electronic communication devices in educational settings.

Future research

The questionnaire would have been better suited to the research if it had contained more specific questions pertaining to online shopping in Jordan. Perhaps future studies can look into this further to gain a better understanding of the preferences for the Jordanian online shopping experience. Although the current studies had sufficient participants, in the future, researchers can expand the number of respondents to have improved results. A larger sample size may contribute to a normal distribution in terms of age, gender, and economic status. Finally, if future research was aimed at getting a better understanding of each participant, the questionnaires could ask more personal questions.

This research may be applicable to different countries throughout the Middle East, as it is a region which continues to grow rapidly in the sector of communication technology. Future research may examine different kinds of electronic communication as well as the effects of communication technologies in other sectors. Finally, future research may be geared towards technology usage in regards to national and economic development.

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APPENDIX

A. Survey questions given to respondents:

1. I am

- 18-25
- 26-35
- 35-45
- 46-55

2. I am

- male
- female

3. I have used (indicate all that apply) the following communication media at least once in Brazil:

- cellphone, moto, mobile phone
- Chatroom
- Radio
- television
- VCR
- Satellite dish
- Digital camera
- E-commerce website
- Banking kiosk or money card
- Internet listserv
- Internet bulletin board
- Email account
- Voicemail
- Proxima (or other presentation device)

4. The highest level of education I have completed is

- primary school
- high or secondary school
- institute, college or university
- graduate school (MA, MS, PhD, MD, LD)

5. I have used the Internet for

- less than one year
- 2-3 years
- 4-5 years
- 6 years or more

6. I have used a cellphone

- less than one year
- 2-3 years
- 4-5 years
- 6 years or more

7. I neglect friends and family due to Internet use.

- never
- hardly ever
- sometimes
- quite often
- always

8. I use the Internet _____ hours per week.

- not at all
- less than one
- 1-5
- 6-10
- 11-20
- 21-40
- 40 or more

9. I have forgotten / cancelled an obligation to spend time on the Internet.

- never
- hardly ever
- sometimes
- quite often
- always

10. _____ is the longest I have stayed on the Internet.

- 30 minutes
- one hour
- 1-2 hours
- 3-4 hours
- 5-6 hours
- 7+ hours

11. I find it easier to interact with people electronically as opposed to face-to-face.

- never
- hardly ever
- sometimes
- no difference
- quite often
- always

What is the main reason for your answer? Please explain briefly.

12. I spend more time on the Internet or telephone as opposed to talking face-to-face to friends and relatives.

- never
- hardly ever
- sometimes
- quite often

always

13. I have _____ online friends I have not yet met in person.

0

2-3

4-5

6-8

9 or more

What nationalities?

14. I do not like to use a cell phone because

Its disadvantages are

15. I do not like to use the Internet because

Its disadvantages are

16. I often stay on the Internet longer than I intend to.

never

hardly ever

sometimes

quite often

always

17. I often stay on a cellphone longer than I intend to.

never

hardly ever

sometimes

quite often

always

18. I lose sleep because of late-night electronic usage.

- never
- hardly ever
- sometimes
- quite often
- always

19. I have tried to cut down on electronic usage, but failed in the attempt.

- never
- hardly ever
- sometimes
- quite often
- always

20. I neglect my work / study to spend more time communicating electronically.

- never
- hardly ever
- sometimes
- quite often
- always

21. Electronic communication has _____ improved my life.

- not
- hardly ever
- sometimes
- tremendously

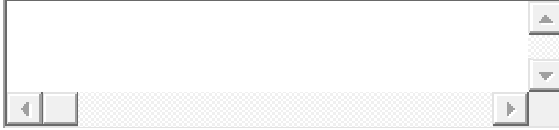
Why do you communicate electronically?

22. I like to use a cell phone because

Its advantages are

23. I like to use the Internet because

Its advantages are



24. _____ is the longest I have stayed on a cellphone.

- I do not use a cellphone.
- All calls are less than 30 minutes.
- 30 minutes
- one hour
- 1-2 hours
- 3-4 hours
- 5-6 hours
- 7+ hours

25. People have commented on the time I spend in electronic communication.

- never
- hardly ever
- sometimes
- quite often
- always

26. People complain to me about the time I spend in electronic communication.

- never
- hardly ever
- sometimes
- quite often
- always

27. I check email _____.

- never
- hardly ever

- sometimes
- daily
- 2-3 times daily
- 4 or more times per day

28. I tell myself “just a few more minutes” when I am online.

- never
- hardly ever
- sometimes
- quite often
- always

29. I have more interesting relationships because of electronic communication usage.

- never
- hardly ever
- sometimes
- no difference
- quite often
- always

30. I have more freedom in relationship development because of electronic communication usage.

- never
- hardly ever
- sometimes
- no difference
- quite often
- always

31. I have lived or studied outside my country for -----

- 3 months
- 6 months
- one year

- 2-3 years
- 4-5years
- 6-8 years
- over 9 years

32. I have studied in -----

33. I make about ----- calls per day using my cell phone.

- I do not use a cell phone.
- one
- 2-3
- 4-5
- 6-9
- 10 or more

34. I receive about _____ calls per day on my cell phone.

- I do not use a cell phone.
- one
- 2-3
- 4-5
- 6-9
- 10 or more

35. I prefer to communicate _____.

- online
- in person
- by telephone
- by email
- by texting

36. Why do you communicate electronically?



37. I form new relationships online.

- never
- hardly ever
- sometimes
- quite often
- always

38. I meet new electronic friends face-to-face.

- never
- hardly ever
- sometimes
- quite often
- always

39. I live more than 6 months of the year in _____ areas.

- urban
- rural

40. My economic status can be described as _____.

- I have no reliable income.
- I have a fixed income/pension less than 1,000 USD per month.
- I have a job or business providing housing, food, clothing and life necessities.
- I have enough to provide for myself and others' needs on a regular basis.
- I am wealthy by my country's standards.

B. IRB

<p><i>A project has been reviewed and approved by the IRB. The researcher requests changes to approved research.</i></p>	<p>Fort Hays State University Institutional Review Board Office for Scholarship and Sponsored Projects 600 Park Street Hays, KS 67601 (785) 628-4349 E-mail: paige@fhsu.edu</p>
<p>Request for Revision to Approved Research</p>	
<p>Study: Electronic Communication in Developing Countries</p>	<p>IRB Reference Number: 514129-5</p>
<p>Name of Principal Investigator: Connie Eigenmann</p>	
<p>Name of Faculty research Advisor (if student)</p>	
<p><input checked="" type="radio"/> Minor Revisions Minor revisions that are no more than minimal risk, or risks are not increased and the revision is not a significant alteration of the approved research. Examples may include staff changes, fewer subjects, deletion of questions in a survey, etc. Requesting expedited review.</p>	<p><input type="radio"/> Substantive Revisions Substantive revisions increase risk or significant alteration of the study. Changes may include revisions to recruiting, changing eligibility requirements, changing the principal investigator, consent form changes reflecting newly identified adverse events etc. Full review required.</p>
<p>Clearly describe and justify revision.</p>	
<p>The following countries and student researchers have been added: Lizette Avales and Naomi Nutsch MEXICO l_avales@mail.fhsu.edu nrmitch@mail.fhsu.edu Nan (Wu) Tang JORDAN n_tang1@mail.fhsu.edu Ya Juan (Jane) Zhou KENYA yzhou@mail.fhsu.edu COMM 800 Zahrah Aljaber UAE zahrah@mail.fhsu.edu Shu (Jenny) Chen MONGOLIA s_chen40@mail.fhsu.edu Oluwamilekun (Rami) Coker TANZANIA ocoker@mail.fhsu.edu Xiaotian (Marcus) Gao INDONESIA x_gao14_rne@mail.fhsu.edu Brandon Steinet GUNGA b_stein@mail.fhsu.edu Tianlei (John) Wang TURKEY t_wang37_rsh@mail.fhsu.edu Yuzhen Wang PARAGUAY y_wang274@mail.fhsu.edu Jui Xu MACAU j_xu23_run@mail.fhsu.edu Ning (Annie) Zhang KZAKHSTAN n_zhang19_sia Shuhao (Joshua) Zhang NEPAL s_zhang50_she</p> <p>All students have passed the CITI requirements, and the original survey and method remain the same.</p>	
<p>Describe any changes in risk level.</p>	
<p>There are no changes in risk level.</p>	

Procedure

This form should be attached to the REVISED Application Package for Human Subjects Research. All REVISED components must be included.

- Application – this will need to be revised
- Informed Consent Process and Documentation (if revised)
- Recruitment materials (if revised)
- Any research instruments that will be used for the study (Interviews, questionnaires, advertisements) (if revised)

ALL REVISIONS MUST BE CLEARLY INDICATED using **BOLD, Color,** or highlighting.

New documents should be attached- be sure to label as "New" or "Revised". It is not necessary to attach copies of existing and unchanged project documents (such as a previously approved consent form) to later packages unless directed to do so by the IRB. These will be available in the Study Designer for review by the committee

When you have attached all the required documents, please remember to sign the package. If you are a student, your Faculty Research Advisor must also sign.

Submit the revised package to your local committee. Be sure to indicate the appropriate Submission Type.

ELECTRONIC SIGNATURES NEEDED – "Sign" using IRBNet

PRINCIPAL INVESTIGATOR

Your electronic signature means that the research described in the application and supporting materials will be conducted in full compliance with FHSU policies, as well as federal, state, and local laws on the protection of human subjects in research. You have the ultimate responsibility for the conduct of the study, the ethical performance of the project, and the protection of the rights and welfare of human subjects. In the case of student protocols, the faculty supervisor and the student share responsibility for adherence to policies.

FACULTY RESEARCH ADVISOR- REQUIRED FOR STUDENT RESEARCH

Your electronic signature certifies that you have read the research protocol submitted for IRB review, and agree to supervise these activities in accordance with the guidelines for human subjects in research. Although the Principal Investigator has ultimate responsibility for the conduct of the study, the ethical performance of the project, the protection of the rights and welfare of human subjects and strict adherence to any stipulations imposed by the IRB, faculty who are serving as the Principal Investigator's Faculty Advisor are responsible for providing appropriate supervision.