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The diffusion of edublogs among educators in Egypt

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CHAPTER ONE - Introduction

Blogs are one of the most important social media tools in Egypt, as they cover different subjects and can be used in different fields. One of the growing trends in the blogosphere is educational blogs, but there is very little research being done on their use in the Egyptian society. According to the Ministry of Communication and Information Technology, the number of Egyptian internet users reached 36 million in June 2013 (2013), not only that, but the numbers of social media users is constantly growing in Egypt, "Arab Media Outlook 2009 – 2013 indicated that 46 percent of their sample visited a social networking site two or more times a week, 37 percent visited a social networking site four or more times a week, and 28 percent visited a social networking site daily, sometimes more than once a day" (Abdullah, 2013). In addition, more than fifty percent of the Egyptian population is under the age of 25, and are being referred to as the "net generation" (Ghannam, 2011). With this amount of significant internet users in mind plus a great and growing number of social media users in Egypt, more research needs to be done on the adoption trends and perceptions of Egyptian users in terms of educational blogs.

Defining blogs:

A blog is the short term for a weblog and it is basically an online personal webpage or diary where bloggers can place text, images and videos or whatever they want. Anyone can be a blogger by starting up their own webpage. Blogs are a very effective new media because they are the first many-to-many or few-to-few medium;

there can be more than one person writing the blog, like a group blog, to a few readers, or to many readers, and there can be one person writing the blog to one reader or many readers. Blogs often have links on them to other blogs and sites, so the reader can be able to read to more than just one writer and there is always a place for the readers to post their own opinion if they want. This allows for discussion, so when a person logs on to a blog they are reading the blogger's posts, linked posts if they want and the readers' posts as well. Blogs are better than other media because they are instant and interactive. Readers can get their information as soon as the blogger posts it with text, videos and images, and they can interact with it by posting their ideas about what they are seeing and reading.

Blogs in Education:

Today, blogs are being used to develop and increase the impact of education around the world and more specifically in the western countries. They have proven to be an effective tool in the field of education, which of course is not only limited to schools and universities, but anyone who wants to share knowledge and information on a certain topic. Blogs can cover any subject; and the bloggers who have created them can choose to make their information private, for only certain readers, in the case of trying to simulate a virtual classroom environment, or public for anyone to benefit from. They also differ in "size, diversity of content and variation in format" (Tremayne, 2007). Blogs can be used by professors or teachers to boost interest in education in a

classroom setting. They can help students after class to study at home by logging on and reading the information and discussions on it. It can facilitate easy interaction between teacher and students in the subject matter. Blogs can help boost student participation by way of comments and discussions on the blog, a major “benefit of blogging [...] is creating a comfort zone for shy students, who aren’t likely to speak up in class, or those who need a few more moments of reflection before expressing their thoughts” (Gewertz, 2007).

Teachers in the west are using blogs to provide links to related information for extra reading which could be interesting to students and add to students’ knowledge. “Standard blog features include easy posting, archives of previous posts, and a standalone Web page for each post to the blog with a unique URL” (Boulos, 2006). Teachers can post pictures and videos which can catch the students’ attention and make the learning experience a more exciting one. Most students now are highly technological, and teachers need to be up to date with what interests the students in order to reach them and get the educational messages and information through to them. Professors in public universities in Egypt that have tens of thousands of students and researchers “can use blogs to provide a learning resource that can be read by learners, they can be written by learners as a portfolio, and they can be used as a collaborative learning space. The exact use will depend on the requirements of the learner and the educator” (Sandars, 2006).

“Because blogs engage people in knowledge sharing, reflection, and debate, they often attract a large and dedicated readership. They can also engender the drawing

together of small virtual groupings of individuals interested in co-constructing knowledge around a common topic within a community of practice” (Boulos, 2006).

Education in Egypt Needs Blogs:

While education in the west is improving, it seems that the education system in Egypt still needs a boost. According to the British Council in Egypt, “Egypt has the largest overall education system in the Middle East and North Africa and it has grown rapidly since the early 1990s” (2013). Although there are government efforts to provide more schools and learning centers for students, the quality of learning still needs work. The World Bank has also supported Egypt tremendously in efforts “to enhance the early childhood education system by increasing access to schools, improving quality of education and building capacity of teachers” (“World Bank”, 2005). “This means that significant efficiencies will need to be introduced into the system just to maintain quality at its current inadequate level” (“Wikipedia”, 2013).

Even the Egyptian government itself recognizes the need for improvement of quality “The Government of Egypt recognizes that there are real challenges to be faced in the sector, foremost amongst which are the need to significantly improve sector governance and efficiency, increase institutional autonomy, significantly improve the quality and relevance of higher education programs, and maintain coverage at existing levels” (“Wikipedia”, 2013). According to, Gihan Sami Soleiman, founder and president

of ICEA, in her research on education, “Education in Egypt is still awaiting a revolution” and it seems that “Quality education in our schools is the unattainable simple” (Soleiman, 2011, Al Ahram). But in order to improve the education, the problems need to be pointed out; “shortage in facilities, lack of trained educators and inflation in classes” and “overly centralized order to improve the already outdated system, rigid curriculum and teaching practices” (“Wikipedia”, 2013).

Statement of the purpose:

The purpose of this thesis is to find out why, with all the benefits of educational blogs, and the widespread use of them in the west, Egyptian educators are not implementing them in their work practice. The literature will show examples of the benefits of educational blogs and how this innovation has been diffused. Educational blogs in Egypt do exist in the hundreds, but they are not all affiliated with a certain school or learning institute. They are not as interactive as they should be, although, many of the bloggers continue to share information on them.

This study will discover the diffusion trends of educational blogs or how they are being spread around in the Egyptian educational society. "Personality, communication [...], and attitudes affect diffusion" (Rogers & Jain, 1968). An in depth look will also be given to the hindrances or reasons behind why educators are not using them by comparing factors such as age, experience, internet access and educational community among both users and nonusers. Finally an evaluation of the different characteristics of

the educators in Egypt will be done comparing characters of both users and nonusers in order to categorize them into adopter categories.

CHAPTER TWO - Theoretical Framework

History & Research Traditions of Diffusion of Innovations Theory:

The year 1903 showed the first glimpses of the study of the Diffusion of Innovations theory, although neither the term nor the technology were associated with the idea. French sociologist Gabriel Tarde in 1903 wrote a book called *The Laws of Imitation* where he discussed the reasons behind why certain innovations will spread while many others are forgotten. Of course what Tarde meant by “imitation” is what people know today as “adoption” (Rogers, 1983). More importantly, Tarde “plotted the original S-shaped diffusion curve”, portraying that according to the steepness of the curve, the level of acceptance of a certain innovation was shown (Bagehot). The s-shape curve shows that at the beginning of the introduction of an innovation only a small number of people adopt the idea, then all of a sudden a great number of people start adopting the innovation, but at the very end the adoption rate really slows down. According to Tarde, this happens because at first the innovation is adopted by few individuals that are “socially closest to the source of the new idea” and then gradually it spread to other people in the society but mainly because similar to previous innovations that have already been adopted before (Rogers, 1983).

Although they had not read the research done by Gabriel Tarde, a group of anthropologists called the “British diffusionists” and the “German-Austrian diffusionists” came to similar ideas on the spread of new ideas as Tarde. The problem with the

findings of the diffusionists is that they claimed that there was only one source for all innovations, which of course is not true, but their more extreme claim was that all social change was solely the result of diffusion, which researchers discovered is not true because social change happens through the sequential occurrence of innovation and then diffusion (Rogers, 1983).

In 1937 Bowers researched the diffusion of ham radio sets in one of the most interesting study in the early sociology tradition. He was a pioneer in researching what influences the opinion leaders and other adopters to accept an innovation and discovering that “interpersonal channels are more important for later adopters than for earlier adopters” through the use of primary data from respondents (Rogers, 1983).

One of the most significant investigations done using the diffusion of innovations was The Hybrid Corn Study which took place in 1943 and was conducted by rural sociologists Dr. Bryce Ryan and Neal Gross, one of his graduate students. They wanted to study the spread of hybrid seed corn, which was a genetic development of the corn seed, among Iowa farmers. The innovation was adopted by 100 percent of the population but the researchers conducted one on one interviews with a sample of 259 farmers to find out all the factors that could have resulted in their acceptance of the Hybrid Seed. As a result of this study, many researchers have mimicked it to answer the same questions answered by Ryan and Gross: “what variables are related to innovativeness? What is the rate of adoption of an innovation, and what factors (like the perceived attributes of the innovation) explain this rate? What role do different

communications channels play at various stages in the innovation-decision process?” (Rogers, 1983). Their research also set the standard methodology to be used in most diffusion of innovation studies which is the survey interview with the adopters of an innovation. More than any other study, this investigation greatly influenced modern day diffusion of innovation studies in terms of their methodology and theoretical framework.

Diffusion of Innovations in Different Fields:

Diffusion of Innovations in the field of education traces its roots back to Dr. Paul Mort of Columbia University’s Teachers College in the 1920s and 1930s. He used questionnaires answered by school superintendents and principals to show that local school control was related to innovativeness where he found the results to be that the “average American school lags 25 years behind the best practice” (Mort, 1953 / Rogers, 1983). Mort’s research also showed that it took schools 50 years to completely adopt kindergartens across the United States, but other innovations such as the implementation of modern math in schools only took five years to become fully adopted. Mort discovered that this difference in rate of adoption was influenced by a factor that modern math was promoted by the National Science Foundation and the US Department of education. Later Dr. Richard O. Carlson took the case of modern math and conducted further research on how it spread among schools in Allegheny County, Pennsylvania. He interviewed all 38 superintendents in the county and asked them

when they adopted modern math in their schools and who their other superintendent friends were and as a result was able to shine a light on the importance of interpersonal networks in the diffusion process. Research in the field of education has evolved slightly ever since Mort and Carlson to surveying teachers rather than just school administrators and on diffusion of new educational concepts in developing countries.

Research in the field of diffusion of innovations in communication is an accumulation of all the sociology, anthropology and education research that took place since the 1903, but Claude E. Shannon and Warren Weaver were the first scholars to publish a book that focused specifically on human communication in 1949, *The Mathematical Theory of Communication*. Much of the communications research concerns was how news events were diffused through mass media, with the discovered results being that news and headlines diffuse the same way technological or material innovations do, it follows the same s-shaped curve adopters, or in this case knowers over time. But research has shown that the difference between news events and other innovations is the speed at which news events are diffused, for example “68 percent of the US adult public was aware of the events in Dallas within thirty minutes of the shot that felled the president. Soon thereafter, almost everyone knew of this event” (Rogers, 1983). But communications research is not only limited to news and verbal communications, a lot of research since the 1960s has been done to investigate the adoption rates of different technological innovations.

Defining Diffusion of Innovations:

Diffusion of Innovation Theory is a theory that studies the rate at which new technology and ideas spread in a society, and it answers the questions of how and why they do so. There are nine major diffusion research traditions including; anthropology, early sociology, rural sociology, education, public health and medical sociology, communication, marketing, geography and general sociology. Even the rural sociology studies done are educational in nature because they help teachers or professionals or industry leaders who have discovered an innovation in this field to show other farmers and spread the new techniques or ideas. Also public health diffusion studies are educational because they try to teach doctors about new techniques and medications to use and spread among each other to make their jobs easier and more developed. All of these specialties can be considered under education of the innovation they are spreading is an idea that will add knowledge to the people. Thus the diffusion of innovations theory was the most appropriate theory to choose for this research paper.

The theory in its modern form was developed by Professor Everett Rogers, a communications professor and a sociologist, who thoroughly discussed the theory in his book *Diffusion of Innovations*. In his book, Rogers defines diffusion as “the process by which (1) an *innovation* (2) is *communicated* through certain *channels* (3) over *time* (4) among the members of a *social system*.” (Rogers, 2003).

Linking Diffusion of Innovations to Educational Blogs in Egypt:

An idea is an innovation if it is perceived by the individual as new, even if it was old in another country or was invented ten years ago, but only reached the individual now, it is new and it is an innovation. In this case, blogs have been used in Egypt since the early 2000s but for social or political purposes, while in the United States they have been used for even educational purposes, so they are not new. But in the field of education, the use of educational blogs in Egypt has not been fully adopted and thus is considered an innovation. The relative advantage or “the degree to which a product is better than the product it replaces” and the compatibility or “the degree to which a product is consistent with existing values and experiences” and both key factors in whether or not an innovation will be adopted (Gourville, 2006). At this point though we cannot say that education blogs in Egypt will *replace* something else, it will only be an added technique to the more traditional techniques being used today. Are education blogs compatible to the Egyptian society? The answer is yes. Egyptians have always been leaders in the field of education in the Middle East so adopting this new technique would only add to their standing. The complexity of an innovation plays a great role in people’s ability to adopt it, “new ideas that are simpler to understand are adopted more rapidly than innovations that require the adopter to develop new skills and understandings” (Rogers, 1995). Trialability is another factor in the degree to which an innovation can be easily adopted. People like to try things before fully adopting them, and this can be easily done with education blogs. Teachers in Egypt can log on to the internet and look and discover all the Western blogs in this field and use them to

communicate with other teachers to learn and share ideas. Observability is the individual's ability to see the results created by this innovation, in the case of the blogs teacher development, educational development, student development, better quality of education are all things that are not easily observed which means that adoption will be at a slower rate than if it were something that is visible and obvious.

But how will people know about the innovation? It is only through the communication channel, which can be mass media channels like television, newspapers, radio and internet, or they could be interpersonal channels or word of mouth or people telling each other. According to Rogers, "most people depend mainly upon a subjective evaluation of an innovation that is conveyed to them from other individuals like themselves who have previously adopted the innovation" (Rogers, 1995). People like to hear about others experiences and how it affected them. "So diffusion is a very social process" (Rogers, 1995). But even through the interpersonal channel, people don't accept information from others unless they are homophilous or share similarities in life, similar experiences, similar backgrounds, and similar communities. This idea can be very useful in spreading information about education blogs in Egypt. Teachers work in an organized manner, they share the experience that they work in Egypt, that the majority of their students are Egyptian nationals, they have similar curriculums and in many cases similar working environments. So when one teacher or school tries the education blogs and talks about it to other teachers or other schools and share their experiences about how it developed the teachers and the students, the adoption rate of education blogs may increase.

Of course innovations are not just adopted over night, they go through a long process and take a long time before an individual decides if they should adopt or reject an idea or innovation. A “time-ordered sequence” usually takes place composed of: “knowledge, persuasion, decision, implementation, and confirmation” (Rogers, 1995). Teachers and administrators of educational institutions will need to gain knowledge about the benefits of education blogs, this can happen through mass media if the Egyptian government or ministry of education creates public service announcements informing and promoting their usage. Persuasion will happen on the interpersonal level when teachers among a community discuss their experiences with each other. A decision to either reject or adopt the education blogs will be made after the objective and subjective information gathering. Only after adoption will the implementation process take place and teachers will start using educational blogs, and over time it will lead to confirmation as they continue to use blogs without discontinuation.

Diffusion of ideas happens through a social system, it is not just an individual process, so each individual of the social system must go through the decision process before there can be a claim that an innovation has been adopted or rejected. In this case of course the social system is anyone in the field of education in all subjects and in any specialty. How the people in the social system communicate determines a great deal how quickly or slowly they will adopt an innovation. But even in the overall social system, there are sub social structures, for example there can be a third grade teacher working at an international school in Egypt, and a third grade teacher working at a national government funded school, each one of them will adopt the innovation at very

different rates although they may be teaching the same student ages and maybe even using the same old fashioned techniques. But the teacher working at the international school may be computer literate while the one working at the national school may not be, so it will take time for the government to train teachers to become computer literate at first and learn how to create blogs and browse through the internet before the adoption and implementation of blogs.

S-M-C-R-E:

According to Rogers, the Sender-Message-Channel-Receiver-Effects (S-M-C-R-E) model “corresponds closely to the elements of diffusion” (Rogers, 2003). In the case of blogs’ integration to aid in the development of the Egyptian education system where blogs are mainly being used for political purposes and are not being used enough by educational institutions to create the needed effect, a closer look at the Diffusion of Innovation theory can help explain when blogs will be effective in time.

To begin with, each of the factors of the S-M-C-R-E model needs to be defined. Senders are usually the inventors of the idea or the opinion leaders, in this case, the senders are the first people to use the blogging technology in education. The teachers or educators who create their own weblogs, write, post pictures, videos and links to information they would like the reader to know about. The message is the blog itself, it is the content on this personal page and the information they are trying to share with the readers. The channel of communication is usually interpersonal or mass

communication; in this case it is the World Wide Web or the Internet, without an Internet connection a blogger cannot create a blog or post anything on it, and without an Internet connection the blogs cannot be read. The receivers are usually the members of a social system; in this case the receiver is anyone with an Internet connection and wants to learn, the students, or the teachers. In Egypt the number of Internet users for 2013 is 38,244,290 (Euromonitor, 2013). This number of users does not include those who can log on from their mobile phones in any free Wi-Fi zone, so it certainly varies and can be greater. Receivers more specifically are those who read the blogs, but unfortunately there are no statistics on the number of readers. Some blogs have digital counters, but a lot of them do not. In the case of education the receivers would be students, or those seeking information, and even teachers if it is a teacher development blog. The effects are usually the receiver's adoption of the idea or a social change. In this case there can be many effects to blogs, including increased readership of blogs, increased amount of bloggers, and most importantly putting the bloggers' messages of knowledge to use and developing Egyptian education quality.

Adopter Types:

Everett Rogers categorizes individuals into five different types according to their adoption rate of a certain idea. "(1) Innovators (venturesome), (2) Early Adopters (respectable), (3) Early Majority (deliberate), (4) Late Majority (skeptical), and (5) Laggards (traditional)" (Rogers, 2003). These different types measure the level of a

person's acceptance to a new idea in relation to others around him in a society. The innovators take the least amount of time to adopt a new idea, they are change agents and they will act as the "gatekeepers for the next group of adopters" (Kaminski, 2011). In this case, Egypt's first bloggers were innovators, and more specifically the current Egyptian educational institutes using blogs. The early adopters are the trend setters in a society; they are revolutionaries in a way and like to create change to the better even if it costs more. International, American or British educational institutes in Egypt, whether they are schools, universities, or learning centers are some of the early adopters, as they have created blogs to go along with their websites. The early majority will not adopt an innovation until they have seen the early adopters using it successfully and have gained some benefit from it. They don't want to take any risks and want to use things that have already proven success. Egyptians in general can mainly be categorized as either Late Majority or Laggards because many people are skeptical, and "respond to economic necessity" (Kaminski, 2011). Egyptians are also very traditional people, this goes with their culture, most education techniques being used are old school and going out into the digital arena will take time. There is no doubt that it will take time for blogs writing and readership to increase and become effective enough to make changes and developments in the field of education in Egypt.

CHAPTER THREE – Literature Review

Why e-Learning?

E-learning or Online Learning refers to the use of Internet technology in education. Researchers in the field refer to this approach as “constructive learning” addressing its most important feature of building on information (Seitzinger, 2006). Students not only construct their own content online, but they even build on each other’s work by being able to share and view and comment, teachers build on student progress which is documented online, and teachers are even building on other teachers’ experiences and implementing them accordingly to their classroom environments. Online learning allows students for the first time to be “active” in their own learning, not merely passive retrievers (Seitzinger, 2006). E-learning allows students to be content producers, rather than just users; they research and write information which is published online through blogs, wikis and even podcasts for the entire online world to see. Students no longer want to be forced into “closed systems” of education; they need “open systems” where new media are the platform (Seitzinger, 2006).

E-learning has many benefits; most importantly it’s cheap, and affordable to anyone with access to the Internet. It is also student centered, students have control of what they want to share or search or read more about, teachers become more of guides, or facilitators just showing the students the way. Students also have a bigger space for being active through “reflection and articulation” (Seitzinger, 2006). They can

read and think at their own pace and comment when they have something to say, and are not constrained by the little time they have during class hours, which may not provide them with the proper environment to concentrate and reflect on what is being said or shared, and may not be enough time for peer participation and commenting. This point brings up the idea of flexibility, referring to time and place which are held to the convenience of the students so long as they have access to the internet. According to education researchers “learning is best done in teams” (Seitzinger, 2006). Online learning is the optimal place for group or team learning, allowing for collaboration between students who share a common interest or subject and are building on each other’s research, findings, and posts.

E-learning “develops knowledge” and “progressive problem-solving” which allow students to research and find solutions over the course of a semester by being able to leave topics and return to them at anytime with an access to internet anywhere and at anytime. It also gives students a global perspective and not just a limited one, in a way the entire world becomes their classroom. Research shows that “collaboration and competition increase learning” and both of these techniques are found in Web 2.0 technologies (Harris, Rea, 2009). Most importantly the classroom environment is available 24/7 providing for a continuous around the clock learning experience and this will make students think about topics they are learning and write about them and log on to read feedback later and when they are prepared.

Definitely the future of the classroom is in Web 2.0, as with all other aspects of society. Internet usage around the world is on the rise, with annually increased literacy. Research studies claim that “the increased use of Virtual Worlds for entertainment, socializing, and education will continue to grow” (Harris, Rea, 2009).

Why Blogs:

“There have been increasing numbers of people using blogs in education” (Yang, 2005). Much of the literature on the use of blogs in education in other countries proves that it has great benefits and is a great addition to the quality of the education provided. Researchers refer to the educational blogs in their literature as ‘Edublogs’. According to education researcher Scott Huette, blogs “promote critical and analytical thinking”, “creative, intuitive and associational thinking”, and “analogical thinking” (2006). In addition he notes that blogs give allow students exposure to a high quality of information through socialization. Students can “take advantage of blogs to enhance their studies” (Kim, 2008). Other than the teach student relationship on the blogs, students can use the anonymity feature and be able to evaluate teachers and share with other students their experiences without having to identify themselves, of course the anonymity feature can also be a negative factor in the use of blogs but this will be discussed in a later section. According to the technology acceptance model, “the more a user perceives a new technology to be easy-to-use and useful, the stronger will be their attitude towards the technology, and the greater will be their intention to use the

technology” (Kim, 2008). All the literature reviewed on the use of blogs in education claims that blogs are viewed as very simple in their use and that you do not need to be technology savvy to use or create one.

Blogs allow students to learn through “guided discovery”, “directive learning”, “receptive learning”, and “social/community centered instruction” (Hsu, 2007). “Guided discovery” happens when a teachers asks students to research a certain topic and summarize or share what they have learned and also provide their own feedback (Hsu, 2007). With the use of the internet to research and the blogs to post links of researched materials and ease of ability to comment on them, blogs prove to provide students a “more active and productive form of learning” (Hsu, 2007). “Directive learning” happens through following the instructions of the teacher in terms of submitting assignments, reading teacher feedback and building on it and in general following directions (Hsu, 2007). Blogs allow “directive learning” by giving students the opportunity to submit assignments online while at the same time instantly getting feedback from professors, and at any time and place being able to access professor instructions if posted on the blog (Hsu, 2007). “Receptive learning” is the professor’s focus on broader or more specific topics, highlighting what he or she wants the students to focus on (Hsu, 2007). Blogs help present and highlight topics through their interactive feature of posting links, images, videos and audios. These leads help students to focus on what the instructors want their students to perceive in an interesting approach. Peer feedback and social interactions among students and teachers and students and students, and even students and the overall community are all ways in which blogs build

“social/community-centered instruction” (Hsu, 2007). Students can open up to each other, create knowledge based discussions, and ask each other exploratory questions that can support further knowledge development, in a combination of “solitary and social interaction” (Bruns, Duffy, 2006).

Educators also argue that e-learning motivates students due to the fact that they have an audience. “Students will write when they have something to say, when they have an audience, and when they get feedback” (Kennedy, 2003).

Educational Blogs in Other Countries:

In their research on one of the first higher education institutes to implement blogs in the world, Harvard School of Business, Jeremy Williams and Joanne Jacobs explore the benefits of using blogs in higher education. Their study was done in the year 2004 when Harvard decided to add blogs to support two of the MBA courses offered. The blog was an optional tool for the students, but 50% of the registered students of the courses opted for using the blogs through their course studies. When asked the question of whether or not the blogs assisted the students in their learning, 66% answered a combination of strongly agree and agree, while only 12% combined answered with strongly disagree and disagree. The rest of the students neither agree nor disagree. The survey results of students who used the blogs illustrated that the MBA blog “increased student interactivity” and “meaningful intellectual exchange” in terms of sharing opinions, perspectives and experiences. (Williams, Jacobs, 2004). Of course

MBA students are adults and are keen to learn and participate since they are doing post graduate studies for their own personal benefit and growth but it is important to note that 94% of the students who used the MBA blog said that they would like to see blogs used in at least some of their other MBA courses.

Research on the use of blogs to develop education in the medical field showed that the growth of blog usage among professors and students was the ease of use, and the availability of the free software online. The unique information sharing and collaboration function of blogs “carry the potential of complementing, improving and adding new collaborative dimensions to the many Web-based medical/health education, CPD (Continuing Professional Development), and research services currently in existence” (Boulos, Maramba, Wheeler, 2006). Blogs combine people who share the same interests to discuss and read and on to each other’s posts. Blogs are archived and can be researched to refer back to at any time, which is important in medical education where people build on each other’s cases and can come back with new information to post even about an old topic. Not only that, but a doctor can take a picture with his mobile phone of the case he or she is working on, and in moments have comments and ideas shared about his case. This visual aspect of blogging is very important whether in sharing images or videos because medicine is a very practical field and each case is individual. Blogs can be a great tool for “clinicians in remote and rural areas, who often lack training and proper academic support because of their geographic isolation from the large central hospitals and academic centres of excellence in the main cities” because with the technology, they will be able to read and learn about the latest

medical developments (Boulos, Maramba, Wheeler, 2006). Medical blog research also shows that “deeper engagement with learning objects and online discussion groups yields significant benefits for the development of professional practice” (Boulos, Maramba, Wheeler, 2006). Overall blogs in the medical education field have proven success and created beneficial communities of practice for professors, students and clinicians.

Another university study dealing with undergraduate students at Abant Izzet Baysal University in Turkey also proved that the use of blogs helped students form better “information searching and writing skills” (Tekinarslan, 2008). The research in this study was not only based on surveys of the students accounts on their experience, but also through professor Erkan Tekinarslan’s observations of students while they worked inside the classroom on the blog, and analysis of the actual content they wrote on the blog. The findings of professor Tekinarslan showed that “teaching students how to create a blog is an easy and straightforward activity” (2008). He also found that blogs contributed positively to the writing skills of the students in terms of being able to organize and paraphrase information they had researched. There was also the added advantage in using blogs that assignments were submitted electronically which was much easier for the professor to keep track of. More than half of the students found blogs to be “convenient and cost effective tools for disseminating information” than other traditional methods (Tekinarslan, 2008). Many also found the blogging very exciting and motivational and improved the quality of their work especially for it since they knew that not only would it be read by their professor and fellow students, but also

by other people around the world, since blogs are accessible by anyone with internet access. "Access to a wider audience than the traditional student-teacher relationship is more likely to reinforce collaboration and feedback" (Kim, 2008). Although one of the disadvantages the professor faced was the limitation of opportunity for students to blog from the comfort of their homes due to limited internet access off the university campus, so most of their blog related assignments were done on campus.

In 2007 a study was done in Portugal at the University of Minho, Braga. The class was composed of 23 students in a class called Educational and Communications Technology. Throughout the course of the semester students were required to maintain a blog which they managed in small groups and at the end of the semester were asked to give their feedback through a survey about how they felt about the blog usage and how it may have benefited their educational experience. The results proved that weblogs were an excellent tool of educational development because they gave them a positive experience in cooperative learning. Students agreed that it was easy to set up the blog and maintain it. The students also unanimously claimed that creating a blog "encouraged them to learn more" (Coutinho, 2007).

But edublogs are not only limited to higher education, or university education, schools around the world are using blogs as tools to motivate students inside and outside of the traditional classroom environment. Blogs "offer a new and powerful toolkit for the support of collaborative and individual learning that adheres to the patterns of contemporary information-intensive work and learning outside of formal educational settings" (Downes, 2004). Research on fifth grade students in Institute St.

Joseph in Quebec City, Canada shows that blogs encourage students to not only communicate better as a class but also exchange views with the outside world, which has shown to be very motivational for students of this age. According to Stephen Downes, the researcher of this study, these students, which he labeled as “early adopters” are gaining a “new set of skills and attitudes” through their use of the blogs (2004). His research also shows that blogs are beneficial in managing, archiving and publishing student work which creates a sense of communicated community among the teachers, students and parents (Downes, 2004). Teachers are able to communicate more clearly with students and their parents by posting due dates, schedules and external links to extra learning tools related to their studies. Class room discussions are usually chaotic or dominated by a few, but when required by the teacher for students to create a certain amount of posts, blogs serve as an organized venue for all students to participate and share their ideas and feedback in a manner of structured discussion, so “it puts students in a situation of equity” (Downes, 2004). This research also agrees that the most attractive aspect of the edublogs is their ease of use, if they know how to use the computer and through one session students can learn to use, post and edit blogs. Downes’ research also agrees that a major benefit of blogging is that it encourages students to write, and more specifically, write work of their best quality because they know that other people from around the world will be reading their information. Blogs have also shown great value in offering a podium for students to develop their critical thinking skills, pushing students to reflect on each other’s posts, offer positive criticisms, question information being shared on the blog and reacting to show what they are

learning by providing replies and information that is worthy of sharing and reading, which is actually the essence of learning.

A study made on six teenage students trying to learn the Malay language as a second language proves that blogs are the best learning environment for non Malaysian students to learn Malay. The researches particularly stress the positive effects of blogs in the subject of writing while using the language being taught, and is a motivational tool especially for those students who are not particularly good at writing. The success of blogs on students is due to the collaboration, interaction, communication and readership of the internet audience, not merely their teachers. The simplicity of access to blogs at anytime, anywhere, also keeps students keen on continuing to write while using the new language. Due to their insecurity with the second language they are still learning, many students may have a fear of speaking publicly or even in a classroom environment using it, but “blogging offers opportunities for them to express their opinions through writing without the usual reservation, thus improving their writing skills over the long term” (Ubaidullah, Mahadi, Ching, 2013). Blogging promotes students’ analytical and thinking skills through a global channel and through the creation of their own writings and research, students become “content experts” (Ubaidullah, Mahadi, Ching, 2013). But it is not merely the writing that can be developed through blogs, audio and video recordings of Malay speakers can be added to the blogs so that students can learn the correct pronunciations of words and here proper conversational skills from native speakers. Blogs give student’s to give each other feedback and comment on each other’s posts instantly and even in a way tutor or

mentor each other. If a student posts an audio to the blog with a mispronunciation of a word, another student can post an audio with the correct pronunciation, or writing correction and so on. Blogs create a supportive and collaborative learning environment that does not exist in the real life classroom.

Peer feedback and collaboration between students is especially important when learning a second language. This was also supported in another research done on second year UK university students enrolled in an Advanced German class. The blog was the main project of the students for the entire semester, and it was created in an effort to “stimulate discussion” on any proposed topics and “foster peer feedback and student interaction beyond the classroom” (Dippold). The blog was used to support the classroom environment because this course did not have WebCT or Blackboard as a virtual learning environment tool to use as support outside the classroom. At the end of the project students were asked in survey form how they felt about using the blog as a learning environment, they “unanimously commented positively on the intrinsic motivation provided by the computer mediated environment” (Dippold). Blogs create a “student-centred environment” which should be the purpose and priority of any learning institute (Dippold).

In addition to the field of learning languages, blogs have also shown particular success in writing classes. “Part Web site, part journal, part free-form writing space, blogs have the potential to enhance writing and literacy skills, while offering a uniquely stylized form of expression” (Kennedy, 2003). Will Richardson a high school English teacher created a “paperless course” where his students submit all of their work and

feedback on the class blog (Kennedy, 2003). He found this way of teaching literature extremely beneficial to students because they were able to express their ideas and thoughts in free form and without any boundaries. Students were not just reflective, but were also active in providing suggestions for readings to be read by the rest of the class and arguing on the blog why it would be beneficial to read these stories. The students became the content providers while learning expressive and argumentative writing skills, while as a teacher he was merely a moderator. Like other blog users he argued that the students were especially motivated by the audience being the web users, but he was able to even take it up a notch by allowing students to post questions and criticisms on stories where the authors were still alive and were able to reply to the students on the blog. This was an exceptional driving force for students and made them bring out the best of their writing work. But Richardson's most important discovery was that "self-publishing encourages ownership and responsibility for content" which is extremely important for high school students in teaching them responsibility and pride of their own work. As a teacher, blogs are beneficial for Richardson because he can evaluate students' writing development over time in a portfolio sort of arrangement, which is much easier for him than paperwork because there is the risk of losing the work, or losing the feedback, but on the blogs everything is archived for easy access.

Blogs are obviously not only used from teachers to students or from students to students, some blogs are made especially for teachers to use and develop their skills. In the global environment in which we live today, teachers can use blogs to learn new techniques and methods from each other, "teachers sharing ideas through blogs is a

promising way to communicate teaching ideas and allows multicultural teaching methods to be disseminated” (Curran, Marshall, 2011). A study was made to explore how blogs helped 43 (EFL) English as a Foreign Language teachers in Taiwan improve their teaching skills and techniques. The data was collected through observation of the posts on the blog and through surveys of the teachers after using the blogs. The study shows that the teachers who used the blogs were able to increase their levels of critical thinking and reflect on their purpose for teaching and the benefits the students need to get out of it. Through peer feedback and their own reflective posts, teachers are able to discover innovative ways of enhancing their techniques for better results. Research shows that “peer collaborative reflection helps each individual develop his or her professional knowledge” and this is the purpose of using teacher blogs (Yang, 2009). Blogs have become especially successful in the field of language learning more than any other social media tool on web due to the interactivity and control they allow the “learner” who in this case is the teacher due to their ease of use, audio and visual applications, and simplicity of accessing and commenting. “Language teachers can use blogs as discussion forums to increase time and opportunities for students to learn the target language” (Yang, 2009). As teachers trying to motivate students to read texts in other languages, blogs have proven to boost student motivation to read and even write in foreign languages due to their attractive setup and interactive nature. “Studies have shown that Internet access motivates many students to read extensively” (Yang, 2009). Teachers can further make sure of blogs through the use of hyperlinks to read more and learn more on the subject from other websites giving the chance for easy access of

more knowledge that would not have been able to be shared in traditional classroom or even teacher's lounge environment. "They also create a learner-centered environment that allows students to learn at their own pace" (Yang, 2009). Teachers are busy people by nature with the lesson plans and grading and updating they constantly need to be doing so they need an environment where they can learn and develop at their own pace and on their own time, whenever their schedules allow for it.

Problems with edublogs:

Although the majority of studies show that the use of blogs and internet technologies is a positive development to the classroom environment there maybe some problems or disadvantages that many of the researchers have pointed out but overlooked for the outcomes of their studies. One of the main disadvantages is the availability of the hardware or the computer resource and internet connection itself, although not a generalization, but in some of the non European or Western countries this maybe a problem. Some students "cannot afford" a computer or an internet connection and may not have an internet cafe nearby to go to after school (Harris, Rea, 2009). Tekinarslan also faced this problem in his university study in Turkey, where some of the students could only work on their blogs on campus.

Plagiarism is another problem Tekinarslan faced. He realized that as a prerequisite to his course students had needed to take a basic writing class where they could learn how to cite information and not just copy and paste whatever they found on the internet to claim it as their own. Harris and Rea offer a suggestion for this problem

through a “quick Google demonstration to see how easy it is for an instructor to located ‘lifted’ passages as an adequate deterrent” (2009).

Although this may seem like a benefit, but openness has also been noted as a problem. “Openness causes extreme discomfort for some students” (Harris, Rea, 2009). Having the entire world as an audience is a problem for some students being shy and unable to share with all these people. Also, “virtually anybody able to alter, edit or otherwise contribute to the collaborative Web pages, it can be problematic to gauge the reliability and accuracy” of the blog (Boulos, 2006). This goes along with the problem of “anonymity on the internet” (Yang, 2009). Although usually in education blogs students know that their instructions will come from the teacher and it is not really a place to research information as a primary source but rather a place to share information with each other. “However, if the information that the students are learning is incorrect, then all of the students are being misinformed” (Yang, 2009). This problem can be handled by the instructor or mediator of the blog.

Medical student blogs are also a special case because they conflict with the notion of patient privacy. “Patient permission must be sought when posting clinical photos and video, and all efforts should be made to preserve individual’s privacy” (Boulos, 2006). There are ways to work around this problem though by de-identifying patient pictures through blurring or putting passwords and account user names on blogs so that they are only shared among students and not open for the world to see. But the idea of permission from patients is not only necessary in medical blogs, even in school

blogs or educational institution blogs that require student work, permission from the administration to publish and “parental permission to students” and even in some cases the students’ permission is necessary (Kennedy, 2003). Parents, administrators and students need to agree to the benefits of blogging and to work against the potential risk of “cyber bullying or other people leaving threatening comments on children’s blogs” (Curran, Marshall, 2011). Although cyber bullying can also be handled by the teachers through common usernames or passwords for the students of the class in order to limit who can write on the blog.

Unfortunately there is not enough research or any solid evidence on blogging effects on education, although it has proven to be a helpful tool to support education. “More research is needed to investigate students’ perceptions of blogs as a learning tool given the rapid growth of the Internet users of Malaysia” (Ubaidullah, Mahadi, Ching, 2013). Even in the field of medical education, “empirical research is still needed to build our pedagogic evidence base about the different aspects of these tools in the context of medical/health education. (Boulos, 2006).

Diffusion of edublogs:

Diffusion of Innovations in relation to edublogs will look at two different ideas. Mainly how did the idea of the edublog spread and how did the information presented to the readers from the blogs diffuse. The main focus for us of course will be how did the edublog diffuse, or how did users adopt the blog. One of the most important means

of spreading innovations and more specifically edublogs is word of mouth. Simply teachers sharing with other teachers the benefits they found in the edublog using experience will increase the number of users and adopters. Recommendations play a great role in adoptions. When a user recommends an edublog for any reason, this would make teachers more willing to try it and even adopt it because they will be referring to their incentive that the recommender used it and it was successful and very helpful. “Some people recommend much more enthusiastically than others” (Leskovec, Adamic, Huberman, 2006). How enthusiastically or to whatever extent the user who is recommending blogs can add to impact the message is received by the non-user or potential adopter, of course the more enthusiastic the sender, the greater the chances of trial and adoption by the receiver. Surprisingly though, studies have shown that “peer pressure is limited” in terms of convincing non-users to try and adopt innovations (Leskovec, Adamic, Huberman, 2006). This demonstrates that people who merely recommend (even if enthusiastically) have more impact on non-users than friends who are users that pressure their peers to adopt the same innovation.

One of the main ideas researchers focused on was that “interests [...] bring people together” (Leskovec, Adamic, Huberman, 2006). What this means is that people with a common interest in developing education will be interested in adopting blogs, the important point here is to have a common interest. In some cases there is a need for a stimulant in order for people to adopt innovations such as blogs. For example, in the United States of America, “the 2004 presidential campaign stimulated blog readership” of newspaper blogs (Gill, 2009). The government can have a role in this stimulation

factor, by announcing that all future announcements from the Ministry of Education will be announced through the ministry's online blog, which has links on other edublogs. Teachers and educational institute officials will be stimulated if not forced to become adopters. "Some organized contexts other than professional also have higher success rate" in promoting adoption of a blog (Leskovec, Adamic, Huberman, 2006). Although it may sound farfetched but religious institutes can have this type of impact. If the sheikh at a mosque claims to have been teaching Islam through his online blog to Muslims around the world and even had success in converting someone. This example would definitely make people who like this sheikh or who hear of this example want to try edublogs and adopt them.

Blogs can most easily be diffused to internet users due to their availability online. Information diffusion about blogs can happen through search engines. If someone with a certain interest is researching a certain topic online, he may get a link to a blog on which he will find the information he is looking for. Sometimes search engines give recommendations of blogs as some of their top priorities in search results. Sometimes, blogs pay fees to search engines in order to appear first on the search results in order to gain more readerships and diffuse and become adopted by more people (Kwon, Kim, Park, 2009). Another technique is "through an invitation from an existing user" (Gu, Johns, Lento, Smith, 2011). If an already existing edublog user sends an invitation to a nonuser to read a post or check out the link, this will trigger the nonuser to read the blog but not necessarily adopt it depending on if the outcome is positive or negative. A study on the adoption of Wallop Blogging by both Chinese and English speaking users

shows that there is a four step process: “invitation”, “adoption”, “retention”, and “contribution” (Gu, Johns, Lento, Smith, 2011). The four step process claims that at first a potential user will be invited by a user to read something off the blog. If he is interested he will adopt the blog. If he is further interested he will become an active user or resort to retention if he is not an active user and simply not really use the blog after adoption. If the adopter becomes an active user, he too will become a contributor and invite people to use the blog, and therefore diffusing the idea of blog usage.

A study of 325 secondary school teachers conducted through questionnaires which asked them why they had adopted edublogs and what elements impacted them showed results of eight factors. “Perceived enjoyment, codification, effort, compatibility, perceived ease of use, personal innovativeness, enjoyment in helping other, school support and perceived usefulness” (Chen, Lai, 2011). These factors show that the reasons for adoption are not unified. There can be different reason and each individual can be influenced differently before adoption, there will not be just one way to influence teachers in Egypt to adopt edublogs.

Adoption of an innovation is also significantly related to the support of the community and the supervisors, at least this is what Everett Rogers said (1995), a study on the diffusion of new techniques among English as a second language teachers in Florida showed that the opposite maybe true, sometimes teachers working on their own and creating their own curriculums without the support of the community may prove success in the field using that innovation and help in the spread and awareness of

others about it by setting an example (Warford). His study suggested that in fact, some hindrances maybe coming from the community.

Another study on the hindrances of an Engineering educational innovation among different departments showed that, “knowledge and interest does not necessarily impact practice” (Dancy, 2011). This means that students and teachers maybe interested in the innovation, or know how to use it but, in the end they don’t apply it. Some of the reasons for not applying the innovation are “departmental norms and student resistance” (Dancy, 2011). These outcomes are important because they show the reasons why certain innovations may not be diffused among educators even though they have the knowledge, the materials and ability to apply them.

A study on the diffusion of social networking innovations in Nigeria among students for educational purposes was done, although it only focused on the users and did not ask any nonusers, it mainly focused on what factors played a role in the adoption, and students were supposed to answer according to “Relative Advantage, Complexity, Compatibility, Observability and Trialability” (Folorunso). Results showed that the majority chose relative advantage and compatibility as the reasons they choose to adopt innovations.

Another study on the diffusion of educational innovations claims that unlike Everett Roger’s claim, today “the diffusion process is less dependent on word of mouth transfer of information [...]there is less reliance on opinion leaders and increasing faith in self-determination” (Christensen, 2013). People are now finding out about

information on their own, and by using just by using it they are setting a trend as individuals. There is no longer the idea of opinion leaders because these types of communities don't really exist anymore. "What we discovered in our research is that those traditional categories of innovator, early adopter, early majority, late majority, and laggard just don't apply as much as they once did" (Christensen, 2013). This study goes on to prove that many of Everett Roger's claims are no longer applicable, or at least are applicable to some cases and not others because of the uniqueness of each special case, and as a theory it cannot be generalized.

An Engineering study done on the diffusion of the STEM educational innovation among professors at universities showed interesting results. They found that awareness of the innovation was not related to the adoption of the innovation. People could know about something but not necessarily adopt it. They also discovered differences in adoptions among institutional types and searched how department chairs at the institutions found out about the innovation. They discovered that department chairs found out through word of mouth and that different institutions adopted innovations in different manners, but it depended on the level of support of new ideas that was given at the institute (Borrego, 2010).

Another diffusion of educational innovation study in the field of Engineering shows that the most common ways innovations are diffused among adopters is through "word of mouth, workshops, and literature" (Gilbuena, 2013). This means that either people spread the word to each other, or Engineers find out about innovations through workshops or trainings they attend or finally, through the literature, which means they

have read about it somewhere. But even in this case, the first most common way innovations spread is through word of mouth as Everett Rogers had claimed.

A similar study on the diffusion of innovative nursing educational programs suggests that the most common ways for innovations to be diffused are through, “published articles, conferences, or by word of mouth” (Billings, 2012). In this case, word of mouth is not the first way innovations are spread, but they do admit that innovations are spread through this means in the third ranking after published articles and attending conferences about them.

A research done in Cyprus about the diffusion of distance learning in their educational system, and its acceptance showed that through diffusion of innovations, and through the diffusion through word of the mouth, “distance education was slow in gaining hold but effectively diffused in North Cyprus over the course of the last four or five years” (Isman, 2005). This study was done over a long period of time which allowed it to measure more about the diffusion rate, than just the diffusion process.

Another research found that word of mouth was also the number one communication tool in the diffusion of Web Supported Instruction in Higher Education. It also took a lot of support of the educational and social community to spread this innovation and make it more acceptable and adopted by professors and students (Soffer).

The Use of Digital Technologies in Education in Egypt:

The focus of this paper is not an identification and solution of problems in the Egyptian education system, because they are plentiful and need an entire research and focus of their own. However, the focus of this paper is to show the reasons why edublogs are not being adopted in the Egyptian educational arena. One benefits of the use of blogs and how they have had a positive impact on the classroom environment and can develop the Egyptian education system.

According to The Egyptian Cabinet, Information and Decision Support Center in Egypt, one of the Egyptian government's goals since the year 2005 has been "modernizing education" in Egyptian, with a specific focus on higher-education; university or graduate and undergraduate studies (El Sebai, 2006). El Sebai's study thoroughly explains the need for integration of digital technologies in higher education; "increased opportunities for distance education and training", "increased commercial production online courseware for all educational levels", "incoming students will have higher I/CT competencies and expect higher level of I/CT as part of their HE experience", "employers will expect higher levels of I/CT competencies from HE graduates", and "increased use of international alliances to create virtual organizations – including universities and campuses" (2006).

But in fact, Internet usage has been a part of Egypt's educational system since 2008 with the establishment of Egyptian E-Learning University (EELU), the first online, long distance degree providing institution. Two factors can also provide support for

increasing success of online education; “mobile penetration in Egypt is at 91.32%” and “Egypt number of internet users count around 30% of the population” (El-Gamal, 2012). Internet access on the mobile phone gives instant anytime and anyplace access to students of their virtual classes. Also in 2004, the e-Learning Competence Center (ELCC) was founded by the Ministry of Communications and Information Technology to provide e-learning courses and degrees from its own center and to help other institutions create online courses as well. The National E-Learning Center (NELC), which was established in 2005 by the government to regulate online courses and make sure that they achieve the learning standards. Other e-learning or internet based degrees can be gained from The Egyptian Learning Center, e-learning courses provided by the Engineering and Science Services department at the American University in Cairo, e-learning courses offered at the British University in Cairo, online courses offered by Ain Shams University, e-learning in Suez University, and even online courses for Al-Azhar University. In 2008, “Alexandria University created the first e-degree online in Egypt by the Faculty of Science, a master degree in Neurobiology” (Osmane, 2010).

E-learning means that these institutions are using blogs to have their students interact, or a blog-like software online, because learning is not simply about getting the information online and getting tested on it later. “Shady Lamie, business unit manager for Berlitz Egypt, discussed the value of computer-assisted language-learning programs and applications, adding that Berlitz programs are both affordable and available online. Computers have become virtual instructors, he said, encouraging student interaction

and providing the flexibility to offer language-learning strategies tailored to individual needs” (“AmCham”, 2010).

But online learning is not only confined to higher education. “Omar Sherrer, e-learning unit manager for Edu Systems International, explained his company’s collaboration with Futures American Schools in Egypt. He spoke about how e-learning was brought to these schools first by setting up the infrastructure – including childproof laptops, smart boards and mobile labs – then training teachers and students on how to most effectively use the devices, and creating a platform for students, teachers, administrators and parents. Two young students from one of the Futures Schools spoke about their experiences using the technologies and demonstrated several platform applications, including learning exercises” (AmCham, 2010). The British Council in collaboration with Edu Systems International offer online courses for school children in math, sciences and English.

There are also hundred of educational blogs from graduate, postgraduate and even school levels in Egypt. Please refer to the index for a list. These blogs cover many topics, from medicine to engineering, to community blogs created for anyone from the community open for discussion topics. Some of them are teacher blogs where teachers give tips and share ideas or talk about epidemics they are facing. Some are also subject or class related, where teachers are giving assignments and links and students must go on and comment or put up their writing assignments. Although the majority of them are not as interactive as blogs should be, meaning that bloggers are posting but there are

not many comments in the feedback, there is still a significant number of educational blogs in Egypt that need further readership and recognition.

Having government support of e-learning and the availability of resources, along with a strong head start in online education and the use blogs means that the Egyptian innovators and early adopters are on board of edublogs. Unfortunately there is no research on how these institutions and individuals adopted online education and edublogs but it seems that for many of the higher education facilities it was a push by the Egyptian government and ministry of communications. There also does not seem to be word of mouth or recommendation by adopters to others. Even the media coverage on the aspect of e-learning or online learning in Egypt seems minimal, even in terms of results on Google search engine, there were only 5 news articles about e-learning in Egypt with a major focus on the Egyptian E-Learning University. With this in mind, “the Egyptian e-program [integration] serves a model of how a developing country could actively use new technology not as end user but as service provider and hence contribute [to its] development” (Osmane, 2010).

CHAPTER FOUR - Methodology

Research Design:

Most of the literature review tackled the research on educational innovations in two different types of methodology; experimentation and survey. With experimentation, teachers would integrate blogs to one of their classes and the rest of their classes would not use blogs. In the end, their results would include documentations of their observations of the quality of work and patterns of interaction in the classroom setting as a result of exposing them to the blog in comparison to those who were not exposed to the blog. In some cases the researchers also surveyed the students after using the blogs to see how the students reacted to the use of blogs and how beneficial they found it and how easy it or difficult it was to use. This type of methodology would have been interesting to use in this research if the focus was on how people felt when they used the blogs and the theory would have Uses and Gratifications Theory. The reality is though, although educational blogs do exist in Egypt in the hundreds, thousands or maybe even millions of teachers and students have not been exposed to them, we first need to find out why they haven't become adopted by Egyptian teachers using the Diffusion of Innovations theory.

The history of research done on the Diffusion of Innovations theory with regards to the spread of innovations and adoption rates in the field of education have always used the survey method. There is documentation of 336 diffusion publications in the

field of education of the typical innovations across different times in the history of education, such as the spread and adoption of kindergartens, modern math, programmed instruction, and team teaching (Rogers, 2003). The methods of data collection and analysis were “mailed questionnaires, survey interviews, and statistical analysis” and the main units of analysis were the “school systems, teachers, or administrators” (Rogers, 2003). Findings were presented in the forms of “S-shaped adopter distribution; characteristics of adoption categories” (Rogers, 2003).

The literature has established that there are great benefits of integrating blogs to teaching, therefore this study will not try to find out the benefits of using blogs but will try to search for reasons why teachers and instructors of different levels and fields have not yet adopted edublogs. The research will show why the teachers that are currently using blogs have started to use them and how they are doing so. Therefore the study will utilize the survey methodology, with a distribution of 244 surveys of teachers, professors, and instructors of different schools, universities, and centers. The 244 surveys will be non randomly distributed among teachers who have adopted blogs and those who haven't, in order to find out why they haven't and check or eliminate different other reasons.

The subjects who will participate in this study (n=244) will be a nonprobability, purposive, convenient sample because the study is specifically targeting teachers or instructors who use edublogs and teachers who work in similar setting but don't use blogs. The convenient sample is due to the time constraint and the geographic and

demographic limitations. The sample will mostly be composed of teachers from international or language schools and centers or institutions, along with professors or instructors from private and public universities in Cairo. The surveys will be delivered by hand or through online communications; emails or Facebook messages.

A pilot study of 24 surveys was conducted among a purposive convenient sample of teachers from international schools and centers to test the internal validity of the questions and make sure they were properly worded. Also because some of the questions are multiple choice questions, there needed to be a determination of whether answers were exclusive and exhaustive of all options. The sample included teachers from international entities who were both blog users and nonusers. The pilot study surveys were sent and conducted online through email and private messages on Facebook.

The survey questions needed to be relevant to the goals of the study in determining why some teachers have adopted edublogs, and the reasons behind those that haven't, so they needed to be based on the Diffusion of Innovations Theory. The first few questions of the survey were filter questions that asked respondents what subjects they are teaching, where they are teaching, how long they have been teaching and if they use blogs to support their teaching. These questions are important to determine the status of the teacher or instructor to help in the categorization of the results after conducting the study. The middle range questions of the survey ask questions about if the teachers are aware of the benefits of blogs and if they have

adopted them how often do they use them, and how they were introduced to them to begin with. Questions about the characteristics of the respondents, related to characteristics of different types of adopters were included in the survey, along with questions about ease of access to internet and internet literacy to determine why teachers may not be adopting edublogs.

Operational Definitions:

Edublog: A blog with a focus on educations, either to educate or share tools and ideas among teachers or as a tool used by the educator to further support the students' experience. It is a "frequently modified webpage containing dated entries listed in reverse chronological sequence" (Tremayne, 2007). This study includes only blogs "personal webpages" and not Facebook, Twitter, or any other social media, nor does it include school management systems such as Blackboard or Renweb. Some examples of edublogs can be found through the following link: <http://theedublogger.com/check-out-these-class-blogs/>.

Educator: Anyone who teaches in any field, teacher, professor, instructor, someone giving a course to someone else.

Adoption of edublog: Using it more than once, not only using it the first time to try it and never using it again.

Types of adopters: Innovators, early adopters, early majority, late majority, laggards.

Types of adopters are identified by questions assessing their characteristics on a 5-point-likert scale and multiple choice questions.

Research Questions and Hypotheses:

Although there are a significant number of educators in Egypt creating and using edublogs, they are much less than blog users and creators in the West. This is obvious from a simple observation of search engine results. The adoption of edublogs maybe low for reasons ranging from internet illiteracy to the lack of awareness about the benefits of edublogs among internet literate educators. As the literature proved, the Egyptian government supports the use of online internet media integration in education, but maybe there was not enough media coverage or word of mouth communication amongst educators on this topic. As a result, and in order to find out reasons behind why teachers have not adopted edublogs and the trends and adoption rates among educators working in Egypt, the following research questions will be the main focus of the survey research:

RQ1: Does the diffusion of the edublog innovation follow the traditional word of mouth technique?

The independent variable in this research question is “traditional word of mouth technique”, which is operationally defined as any form of link that exists between at

least two members of the Egyptian educational system. The dependent variable is the “diffusion of the edublog”, which is defined as the spread of edublogs and their use more than once. This question will be answered by teachers who have adopted edublogs.

As mentioned in the literature review, most innovations are spread among a society through word of mouth; whether through opinion leaders or social circles. With this in mind, along with the knowledge of the fact that the Egyptian government has introduced multiple efforts to integrate online media with education, the following hypotheses are suggested:

RH1: The diffusion of edublogs’ usage takes place through word of mouth communication.

RH2: Educators are more influenced to adopt edublogs when the communicator is an educator teaching a similar subject but who has more experience in the field of education.

But in order for word of mouth communication to take place, educators in Egypt need to be aware of the benefits of edublogs, because it makes a very big difference if they know the benefits but don’t adopt the innovation, and if they don’t know the benefits and thus are obviously not going to adopt it. This leads to the next research question:

RQ2: What are the reasons hindering Egyptian educators from using blogs?

This question will need to be answered by educators who have not yet adopted blogs. To measure the independent variable of educator awareness, the survey questions will ask this group about their knowledge of the nature and uses of edublogs.

RH3: Educators in Egypt who are not using blogs are unaware of their benefits.

RH4: If educators in Egypt became aware of the benefits of blogs they would become adopters.

RH5: School community is not supportive of innovations or accepting change.

RH6: Educators adopting edublogs are mostly younger with ages ranging between 21 – 41 because older ages are less accepting of change.

The last research question will enable the study to categorize teachers into adopter categories.

RQ3: How innovative are educators working in Egypt?

In order to measure the dependent variable in this question which is the innovativeness of the educators, the survey will measure the independent variable which is the characteristics of the educators. Survey questions will include factors such as cosmopolitanisms, resource availability to the educator, social status, and internet literacy.

RH7: Answers will be different among educators who are using blogs and those who are not using blogs.

RH8: Educators adopting edublogs are cosmopolitan, have resources available to them, and have internet literacy.

RH9: Educators not adopting edublogs are also cosmopolitan, have the resources, are of the A and B class and are internet literate.

RH10: Educators in Egypt are mostly in the categories of late adopter and laggard.

Pilot Survey:

A pilot survey was distributed to a non-random available sample two weeks before the actual survey was distributed. The purpose of this survey was to check the clarity of the questions and that answers were exhaustive. The survey was distributed by hand and through Egyptian teacher Facebook groups. The pilot study resulted in 24 responses. As a result of the pilot study some questions were reworded for better understanding, one question was changed due to repetition of meaning, and some options were added to the multiple choice questions in order to make them exhaustive. The questions on the survey needed to be comparable with the purpose of the study. The survey started with several filter questions about where the educator works and whether or not he or she is a blog user. The middle range questions of the survey were used to determine the respondents' views and attitudes towards blogs. Questions about how respondents felt about other innovations in general in order to categorize what type of adopters they were. The results were tabulated and showed that out of the 24 respondents, only ten were users

of blogs in education and 14 were nonusers. Although the majority were nonusers, they also showed that they were willing to learn about edublogs and use them if they find reasons to do so, these results proved the reliability and validity of the survey to the study.

From the pilot study it was also discovered that it would be almost impossible to identify 100 percent if a teacher or educator was an edublog user because some teachers work in environments where those around them are using them and it is a very digital environment but they themselves are not using them, while others may have no internet access at work, but still be implementing the edublogs to their work. Therefore having a purposive sample in this aspect cannot be ensured and because some surveys were administered through Facebook it was difficult to ask people if they were blog users or not before they took the survey. So for a more practical administration, surveys will be distributed among a convenient purposive sample of teachers or educators, but not necessarily split up equally between edublog users and nonusers. As a result, data will be tabulated to show how many surveys turned out to be users versus non-users.

Procedure:

In the beginning, Institutional Review Board (IRB) approval was obtained so it would be possible to approach the sample and survey them. Over the course of three weeks, the survey was distributed among different respondents from different educational entities. Data collectors drove out to several educational institutions where

they asked permission to distribute surveys to the teachers there. Some surveys were distributed by hand to professors at public and private universities; others were distributed by hand to teachers at private and public schools, and even educators at several adult education centers around Cairo. SurveyMonkey was used as a data collection software. Surveys were also distributed digitally online through Egyptian teacher Facebook groups and educational blogs in Egypt, where they would answer the survey through a link digitally. The survey was also emailed to the Egyptian Teacher's Syndicate for further distribution.

Measures and Statistical Techniques:

To be able to test the diffusion of the edublog innovation among teachers, and to categorize what types of adopters they are, participants who were both users and nonusers were asked to complete the same survey. Edublog users are operationally defined as those educators who have used blogs at least once, either in their classes as supportive materials or as a source of information transfer or as a tool to learn from as teachers to get ideas, materials and share methods. Those who are not blog users are those who have not used blogs at all.

Questionnaires distributed among both users and nonusers asked participants to describe what types of personalities they are and how they usually come to accept any innovation (not necessarily edublogs), through five point Likert scales. By turning all

questions into close ended questions after conducting the pilot studies made coding and analysis a much simpler job.

Along with calculations of basic standard deviation, which is a quantitative method, responses were measured using the IBM SPSS statistical analysis tool. A cross tabulation chi-square was used to compare whether the mean for internet availability is the same for edublog users and nonusers (RH5, RH6, RH7). Other chi-square test was done to measure if perceptions on the use of blogs were different among users and nonusers. Chi-square tests were also done to see if users or nonusers would actually sign up for a course to be trained on the use of edublogs (RH3, RH4). Many chi-squares were done along the entire survey to compare how users and nonusers tackled different factors, such as how they characterized themselves, their keenness to research new innovations in their field of work, level of education, age, internet availability, and how they found out about edublogs.

Furthermore, adoption rate of edublogs was identified on the diffusion of innovations s-shaped curve, although it was impossible to calculate our own s-shape curve due to the time constraint since it needs to be done over a long time span to add to increase adoption overtime (RH8).

CHAPTER FIVE – Results

From the 244 surveys collected, different analytical tests were performed on the data attained to test the research hypotheses for the different research questions. Table 1.1 shows a profile of the respondents, displaying their age, experience and the types of educational entities they work at.

Table 1.1 Profile of Respondents

Age	21-31	31-41	41-51	51-61		
	130	62	22	30		
Years of experience	5 or >	6 to 10	10 to 15	15 to 20	20 or <	
	106	56	30	28	24	
Types of educational entity	International	Language	National	Private	Public	Governmental
	124	12	56	74	28	34

It is important to note that out of the 244 surveys, some respondents although they filled out the entire survey by hand, did not actually know how to surf and upload or download information on the internet, as presented by the results of the first filter question on the survey in Table 1.2.

Table 1.2 Do you know how to surf the internet; browse, post and upload and download information?

Answer Options	Response Percent	Response Count
Yes	96.7%	236
No	3.3%	8
	<i>answered question</i>	244
	<i>skipped question</i>	0

Before approaching the analysis it is also important to note that the number of edublog adopters and nonusers were very close, although this may not even be close to the reality of edublog users versus nonusers in Egypt, but this bias is due to the convenient purposive sample being used.

Table 1.3 Do you use blogs for your work?

Answer Options	Response Percent	Response Count
Yes	51.6%	126
No	48.4%	118
	<i>answered question</i>	244
	<i>skipped question</i>	0

In order to further check if adopters were really adopters, not just educators who tried the innovation once, a very important question about the frequency of use of blog was asked. It was important to make sure that those who said “no” to using blogs also said “never” to how often do you use edublogs. It was a cross-checking filtering question.

Table 1.4 How often do you use blogs for your educational work?

Answer Options	Never	Rarely	Sometimes	Most of the time	Always	Rating Average	Response Count
	80	34	60	42	24	2.57	240
						<i>answered question</i>	240
						<i>skipped question</i>	4

Research Question 1: Diffusion of innovations of edublogs

The first research question posed by this study asks whether or not the diffusion of edublogs followed traditional word of mouth technique. The RH1 claimed that diffusion of edublogs among Egyptian teachers took place through word of mouth, although research results show a slightly different outcome. The majority of educators (42.8%) who have adopted edublogs randomly searched the internet and found them helpful, while 31.7% were forced to use edublogs because it is their school policy. Only 28 respondents out of the 126 (22.2%) who use blogs found out about the innovation through word of mouth.

Table 1.5 If you answered yes regarding using blogs for your work, how were you first introduced to them?

Answer Options	Response Percent	Response Count	Mean	Standard Deviation
School policy to use them	31.7%	40	1.0000	.00000
Word of mouth	22.2%	28	1.0000	.00000
Randomly surfed the internet and found them helpful	42.8%	54	1.0000	.00000
Heard about government efforts to integrate internet to learning from the news	0.0%	0		
Took a course about the use of blogs in education before	3.2%	4	1.000	.00000
		answered question	126	
		skipped question	118	

This shows that results from this study do not match results from studies done globally or as mentioned through the diffusion of innovations theory that most innovations spread through word of mouth, whether through opinion leaders or social circles. It seems that people in Egypt are still waiting for the authorities “government”

or “school administration” to tell them what to do, since word of mouth diffusion ranked in third after “school policy to use them”.

A Chi-square test was used to analyze the second RH2 that if the diffusion happened through word of mouth, the person who passed on the innovation information is a colleague with more experience. This hypothesis was proved correct with results showing that 18 out of the 28 educators (64.3%) who found out through word of mouth, found out from colleagues in the same field but with more experience.

Table 1.6 If you chose word of mouth for the previous question, who told you about the use of blogs in education? (please skip if you did not choose word of mouth)

Answer Options	Response Percent	Response Count
Colleague with similar experience in education	25%	7
Colleague with more experience in education	64.3%	18
Supervisor	25%	7
Principal / dean or head of department	7.1%	2
Mean	2.1429	
Standard Deviation	.86444	
	<i>answered question</i>	28
	<i>skipped question</i>	216

These results match the expectations of the diffusion of innovations theory that word of mouth usually comes from an opinion leader or social circle, and in a way combines both. A colleague with more experience is from within the social circle of teachers (not administrator) and at the same time has more experience so can be taken very seriously in terms of being an opinion leader. The standard deviation presented in the results is not significant since, standard deviation is only significant if it is less than .05.

Table 1.7 Descriptive statistics of the diffusion of edublog innovation:

Question:	n	Mean	Standard Deviation
How were you first introduced to blogs?	244	1.00000	0.00000
If you chose "word of mouth" diffusion who told you about the use of edublogs?	244	2.1429	0.86444

The value of the standard deviation for the first question in Table 1.7 could not be calculated due to the question choices, but the value of standard deviation for the second question being more than (.05), in Table 1.6 shows that there is a great amount of variation among the survey respondents, and that the data results are not concentrated around the mean.

Research Question 2: Reasons hindering diffusion of edublogs

The second research question asked about the reasons behind why Egyptian educators were not using blogs. One of the reasons presented by RH6 is that Egyptian educators simply do not have access to internet, even though they are internet literate. This hypothesis was dismissed when none of the results among those who answered “no” for using blogs showed they had “no access to internet at all”. In fact, the majority claimed to internet access at both work and home. The total numbers on Table 1.8 show greater amounts than those in the results of other tables because the respondents were allowed to choose more than one answer, for example; “both work and home” and “on mobile”.

Table 1.8 Do you have access to internet?

		Yes at work only	Yes at home only	Yes at both work and home	On mobile phone only	No access to internet anywhere	Total
Do you use blogs for your work?	Yes	8	2	110	14	0	134
	No	0	32	80	26	0	138
Total Answered		8	34	190	40	0	272
Total Unanswered							2

Another factor that could have been playing a role in why Egyptian educators are not adopting blogs could be where there were working. International school entities could be keener on adopting new techniques in education while governmental or public

systems may be using older techniques, although government did start the online university initiative, other governmental educational entities may still be using old techniques. Although Table 1.9 does show that the majority of blog users work in international system (n = 68) and government facilitated systems showed to have the least amount of users (n = 4). It is important to note that there was a combination of private schools that used the national system that had teachers who used blogs (n = 20), although this is not clear from the table because, survey respondents were able to choose more than one category of educational entity, so some chose national private, others chose international private, government public and so on. Therefore the educational entity may actually be an impactful factor as to whether or not educators are using edublogs.

<i>Table 1.9</i> What type of educational entity do you work at?	Edublog User	Edublog Nonuser
International (American, British, French, German, Other)	68	56
Language	4	8
National	28	28
Private	52	22
Public	4	24
Government facilitated	4	30

**Could choose more than one option.*

RH3 predicted that this is due to the nonusers being unaware of the benefits of edublogs that were already established in the literature review. Although results show that the majority (n = 122) of the educators answered “beneficial”, the second ranking is actually “N/A” (n = 62) which means that a large portion of them actually do not know or are unsure since they have never tried them. Therefore a cross tabulation chi-square had to be done in order to discover what those who answered “no” about using educational blogs said about how beneficial they perceived edublogs to be.

Table 2.1

Using blogs in the field of education is:

Answer Options	A waste of time	Not beneficial	N/A	Beneficial	Very Beneficial	Rating Average	Response Count
	4	2	62	122	50	3.88	240
						<i>answered question</i>	240
						<i>skipped question</i>	4

Table 2.2

Using blogs in the field of education is:

		A waste of time	Not beneficial	N/A	Beneficial	Very beneficial	Total
Do you use blogs for your work?	Yes		0	0	82	44	126
	No	4	2	62	40	6	114
Total Answered		4	2	62	122	50	240
Total Unanswered							4

Table 2.1 gives a clearer picture on to how nonusers of edublogs (n = 114) perceive the use of blogs in their field of work. The majority (n = 62) out of the (n = 114) chose “N/A” which means they are not in a position to answer this question and do not know because they have never tried using edublogs or never been exposed to them so have no opinion about them, which supports the hypothesis that educators not using edublogs may not have awareness on their benefits. Which may also be proving RH5 that educational administrators are not aware of the benefits of edublogs and so are not pushing teachers to use them, especially since table 2.2 shows us that a large number of

educators (n = 44) who are not edublog users refer back to their local principals for adoption of any new educational techniques, even though this comes in second to departmental colleagues (n = 68). The total results are not identifiable to the other total results in the research due to the fact that survey respondents were allowed to choose more than one option of who they consulted.

Table 2.3
Who do you consult regarding educational innovations?

		Local School Superintendent	Mentor Teachers	Students	Dept. colleagues	Local Principals	Your Dean / Dept. Chair	Total
Do you use blogs for your work?	Yes	0	66	12	68	24	46	216
	No	8	26	8	68	44	26	180

RH4 suggested that if educators became aware of the benefits of blogs they would become adopters, but this could only happen if educators were keen enough to want to learn about edublogs. One of the questions on the survey tackled this idea and asked educators if a course teaching about the benefits of edublogs was given to you, would you sign up for it? Results varied and showed that the majority of respondents both users and nonusers of blogs would sign up for the course and would want to learn about the benefits of blogs as shown in Table 2.3. Table 2.4 gives a more detailed visual on whether or not nonusers want to learn (n = 82) said they “agree” to taking such a course, this only shows that educators not using blogs have not yet been exposed to the

benefits of edublogging although they would like to be exposed, because only then would they be given the chance to choose whether or not to become adopters of this innovation.

Table 2.4

If a course was offered to you on the benefits of edublogging (education blogs), You would sign up for it:

Answer Options	Strongly Disagree	Disagree	N/A	Agree	Strongly Agree	Rating Average	Response Count
	2	20	16	164	40	3.91	242
	<i>answered question</i>						242
	<i>skipped question</i>						2

Table 2.5

If a course was offered to you on the benefits of edublogging (education blogs), I would sign up for it:

		Strongly Disagree	Disagree	N/A	Agree	Strongly Agree	Total
Do you use blogs for your work?	Yes	0	12	4	82	28	126
	No	2	8	12	82	12	116
Total Answered		2	20	16	164	40	242
Total Unanswered							2
Pearson Chi-square							.54

One of the most important factors discovered by the study in order for Egyptian educators to adopt innovations is their ease of use. The majority of edublog users (n = 82) and nonusers (n = 72) shows that everyone agrees that an innovation needs to be easy to use in order to use it. But the literature review showed that blogs are extremely easy to use, and that even children can use them, so ease of use may not be a factor into why edublogs are not being adopted.

Table 2.6
In order to adopt an innovation it has to be very easy to use:

		Strongly disagree	Disagree	N/A	Agree	Strongly agree	Total
Do you use blogs for your work?	Yes	0	20	8	82	14	124
	No	2	12	8	72	22	116
Total Answered		2	32	16	154	36	240
Total Unanswered							4
Pearson Chi-Square							0.54

But ease of use is not the only factor Egyptian educators care about when adopting and innovation, Egyptian educators are also looking at their goals (n = 216) and in any innovation they will be looking at how that innovation will help them reach their goal and give them satisfying results. Both users and nonusers almost unanimously agreed to this idea (n = 113) for edublog users and (n = 104) for nonusers.

Table 2.7

In order to adopt an innovation it needs to be compatible with my educational goals:

		Strongly disagree	Disagree	N/A	Agree	Strongly agree	Total
Do you use blogs for your work?	Yes	0	2	6	84	32	124
	No	4	2	6	64	36	112
Total Answered		4	4	12	148	68	236
Total Unanswered							8
Pearson Chi-Square							0.53

Table 2.8

In order to adopt an innovation it has to show obvious beneficial results:

		Strongly disagree	Disagree	N/A	Agree	Strongly agree	Total
Do you use blogs for your work?	Yes	0	4	4	88	26	122
	No	0	6	4	80	24	114
Total Answered		0	10	8	168	50	236
Total Unanswered							8
Pearson Chi-Square							0.96

Another factor that could be hindering educators from using edublogs or other educational innovations is the community or the social circle in which they work. It is important for the educator’s community to be supportive of change for him or her to adopt anything new. One of the questions on the survey asked respondents to rate if their academic community is supportive of innovations and change, but both the edublog users and nonusers claimed that their academic communities were supportive of change and innovations with a total of (n = 144) out of (n = 238) respondents to the question. The chi-square showed statistical significance with (p = .011). These results mean that the academic community is not one of the factors keeping the edublog innovation from spreading.

Table 2.9

My local academic community is supportive of innovations and open to change:

		Strongly disagree	Disagree	N/A	Agree	Strongly agree	Total
Do you use blogs for your work?	Yes	0	20	4	86	12	122
	No	0	38	16	58	4	116
Total Answered		0	58	20	144	16	238

**Total
Unanswered
Pearson Chi-
Square**

6

0.011

It is important to note that the standard deviations were not concentrated around the mean and showed great variance for all questions, and therefore none of them were less than (.05) as shown in Table 2.9. Having a large standard deviation is not a negative aspect in the research; it is merely a representation of greater variance in respondents.

Table 3.1 Descriptive statistics of reasons hindering diffusion of edublog innovation:

Question:	N	Mean	Standard Deviation
Do you have access to internet?	244	1.00000	0.00000
What type of educational entity do you work at?	244	1.00000	0.00000
Perception on using blogs in the field of education	244	3.8833	0.83013
Who do you consult regarding educational innovations?	244	1.00000	0.00000
If a course was offered on the benefits of edublogging, would you sign up for it?	244	3.9091	0.79582
Importance of ease of use to adoption of an innovation	244	3.7917	0.88779
Importance of compatibility of innovation to educational goals for adoption of an innovation	244	4.1525	0.73528
Importance of showing obvious results for adoption of an innovation	244	4.0932	0.64034
Support of academic local community	244	3.4958	0.93767

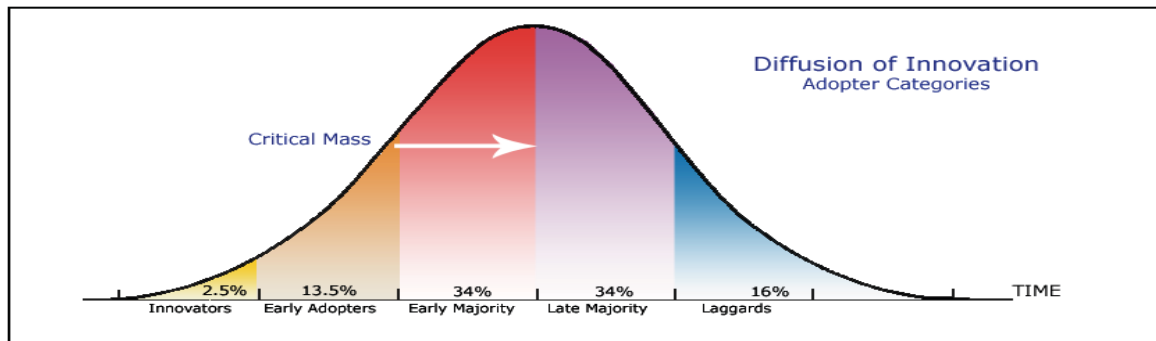
Research Question 3: Types of adopters

The final research question asked about how innovative Egyptian educators actually are. Survey questions asked respondents about factors such as cosmopolitanism, keenness to learn about new trends or innovations, educational status and adoption patterns. RH7 expected that answers would be different among educators who are using blogs and those who are not, the following tables show that there are some very similar trends between users and nonusers of edublogs, such as in order for an innovation to be adopted by the educator, it need to first be tried out by a peer. Both users and non-users agreed to this point with users (n = 54) and nonusers (n = 56), even the number groupings were very similar, with majority being split into “disagree” and “agree”. So it seems that from the results of these questions, most Egyptian educators are between the early majority and late majority.

Table 3.2

In order to adopt an innovation it has to be tried out by a peer before it is tried out by me:

		Strongly disagree	Disagree	N/A	Agree	Strongly agree	Total
Do you use blogs for your work?	Yes	6	50	10	54	6	126
	No	4	40	14	56	2	116
Total Answered		10	90	24	110	8	242
Total Unanswered							2
Pearson Chi-Square							0.75



(Kaminski, 2011)

Respondents were asked to characterize themselves through one of four characteristics, and determine if they believe themselves to be close minded, narrow minded, open minded or global. The majority of results showed that both the users and non-users viewed themselves as either open minded or global. Of course these views are biased because they are getting asked about themselves and no one will admit to being close minded even if they are. The original purpose of the question was to find out if people who felt they were open minded or global had a higher probability of being adopters, while the others who were not open minded could be not open to adopting new things and this characterization of themselves would give a justification as to why they were not adopters, results show this is not the case.

Table 3.3

Please characterize yourself through one of the following descriptions:

		Close minded	Narrow minded	N/A	Open minded	Global	Total
Do you use blogs for your work?	Yes	0	0	2	82	42	126
	No	0	2	2	84	28	116
Total Answered		0	2	4	166	70	242
Total Unanswered							2
Pearson Chi-Square							0.53

Table 3.4

Idea adoptions for blog users and nonusers:

What level are you in terms of adopting new ideas?	Yes	No
I adopt new things after they have become old	2	8
I adopt new things after they have been used for a while by many	28	48
After one or some of my peers try it first and recommend it	54	46
As soon as the idea or invention is introduced	42	14
Total Answered	126	116
Total Unanswered		2
Pearson Chi-Square		0.009

It comes as no surprise that the number of (n = 42) edublog adopters were say that they adopt innovations as soon as they are introduced, in comparison to the

nonusers who only had (n = 14) giving this claim. Although the majority of the adopters (n = 54) said that they don't adopt new ideas until one or some of his or her peers tries it first and recommends it, also supporting the idea that Egyptian educators are somewhere between the early majority and the late majority in terms of adopter categories. The majority of nonusers also supports this idea with their highest responses (n = 48) being that they use innovations later on when many people have already used them. The chi-square was found to be (p = .009) which shows that the differences were statistically significant.

Table 3.5

Reactions to innovations for blog users and nonusers:

When a new technique in education emerges:	Yes	No
I venture and take a risk to try it	24	8
I test it and recommend it to others	44	40
I wait for others to use it and recommend it to me but when I try it I recommend it to others	52	48
I am skeptical and cautious and don't try it until more than one peer recommends it	6	14
I don't like change and will not feel comfortable trying anything new	0	4
Total Answered	126	114
Total Unanswered		4
Pearson Chi-Square		0.11

To further find out what types of adopters Egyptian educators were, the survey asked the respondents about how they react to innovations or new ideas, in this case it

was not necessarily asking about edublogs, but any innovation they come across in their life. Those who said they venture and take the risk were mostly edublog adopters (n = 24) versus the nonusers (n = 8). Although the majority from both the users (n = 52) and the majority from the nonusers (n = 48) still said that they wait for other people to use it and recommend it to them, they also said that they would try it and pass it on to others, so this means that the majority of Egyptian educators are categorized between the early majority and the late majority. This finding disproves the RH10 that the majority of Egyptian educators are late adopters and laggards.

Table 3.6

When a new teaching technique is introduced in the field of education you are keen to research it and find out more about it:

		Strongly disagree	Disagree	N/A	Agree	Strongly agree	Total
Do you use blogs for your work?	Yes	0	42	6	38	40	126
	No	2	24	12	62	16	116
Total Answered		2	66	18	100	56	242
Total Unanswered							2
Pearson Chi-Square							0.015

Another question that further explains Egyptian educator motives in adopting new techniques for their work, asked educators about their keenness to research any new techniques and find out more about them. Results were actually very strange because the majority of the edublog users (n =42) who answered this question said they were not keen on researching new techniques, while the majority of nonusers of edublogs (n = 62) said they were keen on researching new techniques. It is important to note that the chi-square ($p = .015$) shows that the differences were statistically significant.

It seems that the majority of Egyptian educators are open to new innovations in education without the innovation replacing another technique, they are willing to accept more than one technique at the same time and they are open to change, this is apparent from the survey results when (n = 118) edublog users and nonusers disagreed to the statement “in order to adopt and innovation it needs to replace a previous educational technique”. This idea proves that Egyptian educators are not laggards, because in the laggard characterization “they want to maintain status quo”, “they think technology is a hindrance to operations”, and “they usually invest in technology only if all other alternatives are worse” (Kaminski, 2011).

Table 3.7

In order to adopt an innovation it needs to replace a previous educational technique:

		Strongly disagree	Disagree	N/A	Agree	Strongly agree	Total
Do you use blogs for your work?	Yes	10	66	10	34	6	126
	No	10	52	20	28	4	114
Total Answered		20	118	30	62	10	240
Total Unanswered							4
Pearson Chi-Square							0.61

A person’s level of education says a lot about their value for learning, and it was assumed that if the person had a higher degree, such as a masters or a PhD they would be keener on learning and would want to apply new trends and innovations, just as they have done with knowledge. The results actually showed something very different, the two educators who were young and had a high school degree, which means they were teaching while they are still studying for their bachelors use edublogs for teaching. On the other hand the majority of those who had a PhD (n = 28) were not using edublogs, versus the (n = 10) who had PhDs and were using blogs. So it seems that one of the factors for adopting edublogs maybe age. Although not a generalization the chi-square analysis gives more insight on this claim.

Table 3.8

What is the highest level of education you have completed?

		Less than high school	High school	Bachelors	Masters	PhD	Total
Do you use blogs for your work?	Yes	0	2	78	36	10	126
	No	0	0	52	34	28	114
Total Answered		0	2	130	70	38	240
Total Unanswered							4
Pearson Chi-Square							0.055

Table 3.9

What is your age range?

		21 - 31	31 - 41	41 - 51	51 - 61	Total
Do you use blogs for your work?	Yes	82	36	4	4	126
	No	48	26	18	26	118
Total Answered		130	62	22	30	242
Total Unanswered						0
Pearson Chi-Square						0.001

RH11 which predicted that educators adopting edublogs are mostly younger, with ages ranging between 21 and 41, was supported by the results of the survey. The chi-square was also found to be ($p = .001$) which means that the differences were statistically significant. Therefore this disproves the notion that having a higher education makes a person more likely to be innovative, but the younger a person is, the more likely he or she will be exposed and adapting to an innovation than if he or she was older. With age comes experience, and it seems that the less experience teachers

have in education, the more they use edublogs, this could be due to the fact that they are younger so have less years of experience, or the fact that they are inexperienced and are using educational blogs as a support system to learn techniques and ideas from for their work.

Table 4.1

Years of experience in the field of education for users and nonusers:

How long have you been working in the field of education?	Yes	No
Five years or less	64	42
Between 6 and 10 year	32	24
Between 10 and 15 years	20	10
Between 15 and 20 years	6	22
More than 20 years	4	20
Total Answered	126	118
Total Unanswered		0
Pearson Chi-Square		0.006

The greatest number of edublog users were in the category of working five years or less (n = 64), while the least number of users came from the category of more than 20 years of experience (n = 4). This chi-square results were also significant (p = .006).

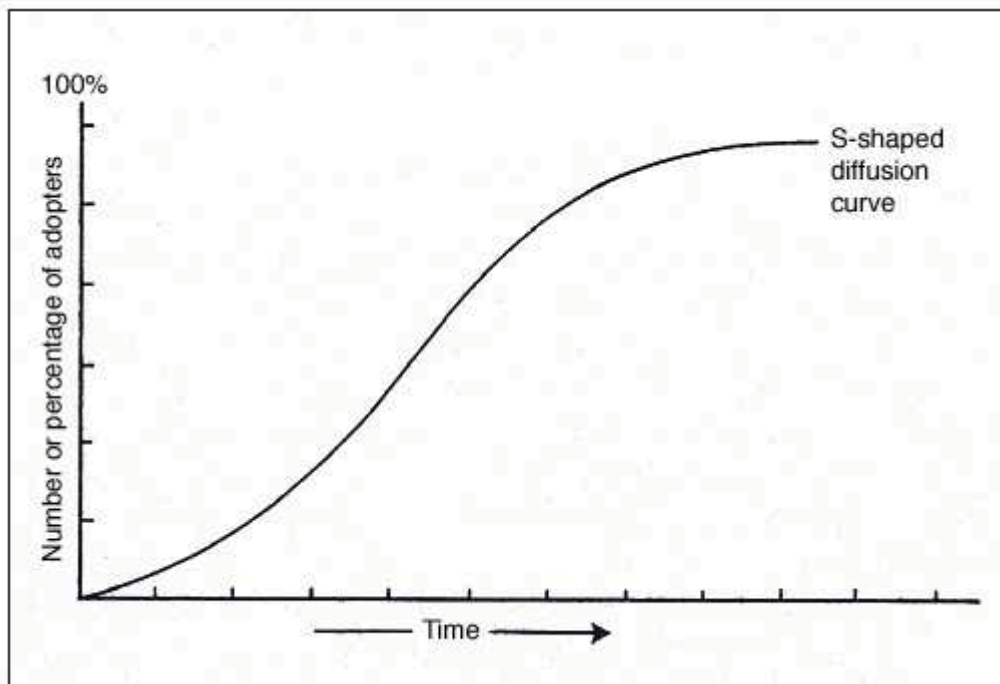
The standard deviations for this research question as shown in Table 4.2 show similar patterns and trends as with the rest of the survey, with numbers being more than (.05) and representing a large amount of variation in the respondent group.

Table 4.2 Descriptive statistics for types of adopters:

Question:	n	Mean	Standard Deviation
In order to adopt an innovation it has to be tried out by a peer before it is tried out by me	244	3.06610	1.06251
Descriptive characterization of oneself	244	4.25620	0.52486
At what level are you in terms of adopting new ideas?	244	2.8347	0.83013
Reactions to innovations or new educational techniques	244	2.5000	0.88877
Keeness to research innovative techniques in the field of education	244	3.5868	1.14506
Does an innovation need to replace a previous educational technique in order to be adopted?	244	2.6833	1.07675
Level of education completed	244	3.6000	0.76036
Age range	244	1.8033	1.04161
Years of experience	244	2.2131	1.36805

The S-shape Curve:

Diffusion models are usually displayed on an s-shaped curve to display the rate at which the innovation is being adopted. “The rate of spread starts off slowly, accelerates through the mid range of the graph, and then slows down and levels off, forming an S-shaped curve” (Mill, 2007). Because the innovation is usually something that the people of the society are not used to, the diffusion rate at first is extremely slow, because the adoption rate is slow. As the word spreads about the diffusion and more and more people learn about it and start adopting it the diffusion process continues to grow and accelerate, until it finally stops, but without having slowed down again.



(Mill, 2007)

In order for this study to calculate an s-shaped diffusion curve, the study needs to be a more generalizable one that calculates how many people, or percentage of edublog adopters there are in Egypt. There also to be more questions about when adopter first started using edublogs for their work, or even when they first started hearing about edublogs, that way the exact starting point of the curve would be known and monitored over time to see when it will stop. Also for the s-shaped curve calculation to be accurate, the innovation needs to be diffused and finished, so the research can identify when the cut-off point is. Therefore it was impossible to calculate an s-shape curve for this study.

CHAPTER SIX – Discussion and Conclusion

Using media in education has been used previously with Egyptians, when in the 1990s and early 2000s there were educational channels based on Egyptian curriculums, which were working airing 24 hours a day for the viewers' benefits. "Television has always been extremely popular in Egypt, and it remains the most powerful medium in terms of reach [...] almost all households in Egypt own a television set (94 percent in 2010) and some own more than one" (Abdullah, 2013). Although no diffusion studies were done on this medium and how it was spreading among adopters or users, it seems that its success did not last because it no longer exists as an innovation.

Today, edublog users do exist in Egypt, and there are plenty of them, and their numbers are growing. The cross tabulation chi-square tests allowed for many comparison results between edublogs adopters and non adopters which greatly benefited the study, in helping to find out differences among the two categories to discover probable reasons for why they may or may not be adopting edublogs, and if there are any character differences in the types of adopters they may be.

But, based on the survey results, edublogs are not being diffused in the traditional "word of mouth" technique proposed by the Diffusion of Innovations Theory, although those who did adopt edublogs after hearing about them through word of mouth found out from colleagues of the same subject but more experience, which is kind of like the "opinion leader" characterized by Everett Rogers. Most teachers are finding out about edublogs by randomly surfing the internet, or being forced to use

them through school policy. It could be argued though, that school administrators have implemented edublog use after hearing about their benefits through word of mouth. Further research needs to be done on this particular topic more extensively to find out how administrators found out about the innovation of edublogs.

The results also eliminated some of the factors that the research hypotheses had predicted, such as the lack of internet access as a reason for not adopting edublogs. On the contrary, it turned out that (n = 0) said that they had no access to internet at all, so it seems that educators in Egypt have internet either at work, home or through mobile phone. The perception of the benefit of using edublogs was also expected to be a factor, that maybe educators did not perceive it to be a beneficial thing, although the majority said they did not know by choosing "N/A" a great number of them (n = 40) said that using edublogs is beneficial, although (n = 82) of the nonusers of edublogs agreed that if a course on the benefits of edublogs was given to them they would take it. Other factors were also explored such as whether or not the academic communities were supportive of change, because working in an environment that doesn't support innovations will definitely halt the diffusion, but the majority of teachers, especially nonusers claimed that their academic communities are supportive of innovations and open to change.

Only one hindrance to the diffusion of edublogs and their adoption appeared in the results of the surveys, which was the type of educational entity the educator works at. It seems that international entities had the most edublog users, while private entities also showed great numbers. The interesting results also showed that private entities

could also be using a national system and applying edublogs to their educational system. On the other hand, government facilitated and public entities had very few edublog users.

The research also showed that age was a factor in the use and adoption of edublogs as an educational technique. Older educators with more experience were using blogs less than younger teachers with less experience. The correlation could be due to the increased digital literacy and increased digital dependence of younger people over older people (Bunz, 2010).

Egyptian educator adopter types were also identified through a series of questions about when Egyptian educators adopt any type of innovation, not necessarily edublogs. Questions asked about how long it takes them to adopt something, what are important factors that have a role in their decision to adopt, can they be the first person to use an innovation, or does someone else have to try it first and recommend it, self perception as to what type of person they felt they were. Through certain questions the research was able to exclude the option of Egyptian educators as Innovators since they were not venturesome or risk takers. Questions also excluded the option of Laggards, because very few were suspicious of innovations or wanted to maintain the status quo, on the contrary, although some were skeptical, they were still open to changes so long as they benefitted and served their educational goals. Egyptian educators are also not Early Adopters because they are not opinion leaders, or adventurous risk takers. According to the research, the majority of Egyptian educators are somewhere between

Early Majority and Late Majority because they interact with opinion leaders and wait for others to use things, but then recommend it to others after they use it and find it beneficial, which is a characteristic of the Early Majority. Egyptian educators are also skeptical, and cautious and wait for their peers to recommend innovations and techniques, in some cases more than one peer, this puts them in the category of Late Majority.

Limitations of the Study:

There were several limitations to the study on the diffusion of edublogs among Egyptian educators. The most important limitation was the number of surveys conducted. There were only 244 surveys; this was due to the fact that the sample was a purposive convenient one. Due to the researcher's scope of educators, the majority of educators were from private entities, and even those who were from public or governmental entities spoke English well, so were not representative of the great majority of Egyptian, Arabic speaking educators. This in many ways harms the external validity of the findings and due to the sample the results cannot be generalizable. Also, as the Egyptian culture remains to be skeptical of research, it was not easy approaching survey respondents who are outside the researcher's social circle.

Furthermore, the topic itself was a limitation. A great part of this study explores educator personalities and what types of adopters they are, but very little research has been done on educators in Egypt, and how their personalities may be apparent on the

types of educational approaches they may adopt. Also, little media research has ever been done on the use of edublogs in Egypt, or even the Middle East for that matter, although there were many edublogs that existed, there was no media research done about them or even about the spread of educational innovations in Egypt or the region, therefore the literature review was more reflective of global trends and the differences were apparent in the results of the study. It is also important to keep in mind that not all educators have access to the internet and those who do are among the few privileged ones. It is not even a requirement for educators to be internet literate in order for them to get jobs as educators in Egypt, so although it was barely represented in this sample, there is a population of educators who are internet illiterate.

Surveys in general- especially structured ones- tend to control the responses of the participants. The use of fixed categories does not grant participants the freedom to express how they really feel about the topic (Wimmer & Dominick, 2006, p.207). Given that, the researcher carried out self-administered surveys and internet surveys, and had little control over how the participants filled out the questionnaires. There were many instances where questions were skipped and instructions were not followed.

Recommendations for Future Research:

Future research on the topic of the diffusion of edublogs among Egyptian educators should provide a larger sample of educators choosing them through a random sampling technique so they could be more representative and of educators in Egypt. The

study could also focus more on only educators who use edublogs for their work, to get a more accurate idea about the diffusion. So the random selection would have to happen after the nonrandom identification of edublog users. Students should also be questioned, because maybe one of the hindrances of not using blogs is that students don't know how to use them.

A further study could also include a content analysis of the edublogs and compare it to the survey results as to how the educators are actually using the edublogs. Although this would become more of a uses and gratifications study, it would still be relatable because if people are happy using something and find it beneficial they will pass on the information to their colleagues through word of mouth.

The fact that word of mouth was not the number one way that the diffusion of edublogs took place among educators in Egypt, although this was the case in other studies done around the world also lends itself to further research on the topic of social relations among educators in Egypt. Do the teachers who find out want to keep the benefits of edublogging to themselves because it is a highly competitive environment or are educators in Egypt not motivated or willing enough to go the extra mile in their work and implement edublogs unless they are forced to by the school administration? Maybe a qualitative focus group of educators would help put some insight on these ideas.

Furthermore, future can make a compare study of the diffusion of edublogs among Egyptian educators to another innovation that has appeared in Egypt, such as for example the educational channels that had once appeared and teachers could get ideas

from them on how to explain concepts and also ask their students to watch them for further understanding and reference. The study can compare how both innovations were diffused among educators in Egypt and to what extent they had adopted or accepted the educational programming and to what extent they are adopting edublogs to see if there are similar trends in adoption.

Blogs are also not the only type of online social media being used in education, many schools, classes and institutes have Facebook pages, or Twitter pages where they post videos, links, pictures, share work, and even have discussions. Also there are also school or educational institute management systems online like Renweb and Blackboard, which are online software programming that allows educators, students, and parents to communicate and also post and share information and links. Although there is no easy access or archival material, and information expires after a certain period of time, further research should also include implementation of these social media along with blogs since they share many similar features.

Conclusion:

This study focused on the way edublogs were being diffused among Egyptian educators, which unexpectedly turned out to be through random discovery online and through school policy to use them, rather than through traditional word of mouth as suggested by Everett Rogers in the Diffusion of innovations theory. It seems that as a researchers on the point of diffusion of the edublog innovation, I would have to agree

with “Paul Mort [who] conducted the first study of the diffusion of what he termed educational *adaptations*, in Pennsylvanian school districts, a study that led him to the following conclusion: ‘the succeeding waves of ‘reform’ which have come and passed in this century have left discouragingly little mark’ (Warford).

Although there were only a few statistically significant data as a result of research, there were some very imperative differences discovered among edublog users and nonusers, and more importantly many of the research hypotheses which were based on mere personal observations and stereotypes of the researcher were excluded.

The research also tried to shed some light on the reasons educators are not adopting edublogs in Egypt, the way many educators are around the world as a new positive trend in improving the quality of education, with the major hindrances being age, type of educational entity they are working at, with more support coming from private entities, and less support for educational innovations coming from governmental or public entities. After researching the communication pattern and people’s attitudes about the innovation of edublogs, and showing that it was a positive one, that they are interested to learn more about, the research needed to approach the personalities of the Egyptian educators to discover if maybe that is what is holding back the diffusion process.

As a result, research was conducted on the personalities of the Egyptian educators to give some insight on to what types of adopters they are, and some of the hindrances they may be facing due to their personalities. The results showed that

educators were between the Early Majority and the Late Majority. Teachers were given a chance to judge their own personalities, and although the majority said they were open minded, the majority also said they would not try anything new on their own, and they would wait for at least one peer to try an innovation and give them feedback. This point is important because it shows that word of mouth is important for the Egyptian educators, and through increased word of mouth in the diffusion of the edublog innovation the more educators will become aware of it and implement it in their work.

As a researcher from both the fields of mass communications and education, I do hope to see increased integration of social media in the educational process in Egypt. It will boost the educational system and take it to new levels because it is cheap, youth are aware and will want to be reached through digital means, or at least have them integrated in the classroom. Edublogs will help in globalizing Egypt and putting it back on the map in terms of countries that provide a good education. Edublogs do not need to be used in the English language only, there are many blogs in Arabic and with the increased use of edublogs in Arabic Egyptians will be adding to the Arabic content on the internet and preserving their presence among readers and youth of this generation. Egyptian teachers and educators can use them for self-development and communication with other teachers, to share new and innovative techniques.

The purpose of this study was to serve as an interdisciplinary study showing how communications take place in the field of education. It seems that the rate of diffusion or communication taking place about edublogs is slow, even though there is an entire

ICT trust fund created by the Egyptian Ministry of Communications and Information Technology, to fund efforts for to increase ICT education in Egyptian schools, which is directly related to the edublogs and online learning. The trust fund began in 2002, but it seems has not been progressing quickly or effectively enough. I hope this study reignites these efforts to increase ICT education among both students and educators, and helps government pinpoint the areas which they can have impactful roles.

Although Egypt is not a hot wifi-spot, there is a very significant growth rate, with internet users more than doubling over the last two years, therefore, I believe the diffusion of edublogs will continue as long as the youth generations are dominant, and both the internet user rates and social media user rates are increasing by the day. I hope that edublogs are adapted to the Egyptian educational system, whether it is for knowledge sharing, student self-expression, critical thinking, and integration of all students without any of them being shy and scared of bullying, teachers sharing information on techniques, or to facilitate long distance learning. I want to see further diffusion for the benefit of making better teachers and a more global student body.

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Appendix A

Survey:

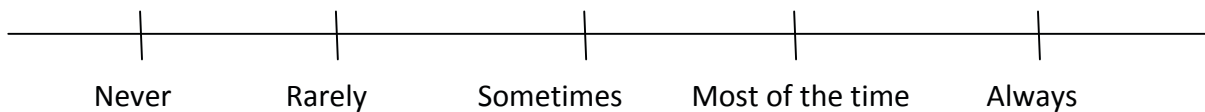
The following survey is being conducted by an MA student at the American University of Cairo to complete the requirements of the thesis. The survey is being used for a study on the diffusion of innovations of edublogs (blogs used to aid education) among educators in Egypt. Please take the time to fill out the following questions of this survey completely and honestly. Confidentiality is guaranteed, and your participation is greatly appreciated.

1. Do you know how to surf the internet; browse, post and upload and download information?
 - a. Yes
 - b. No

2. Do you have access to internet? (You can choose more than one option)
 - a. Yes at work only
 - b. Yes at home only
 - c. Yes at both work and home
 - d. On mobile phone
 - e. No access to internet anywhere

3. Do you use blogs for your work?
 - a. Yes
 - b. No

4. How often do you use blogs for your educational work?



5. What type of educational entity do you work at? (You can choose more than one option)
- a. International (American, British, French, German, other)
 - b. Language
 - c. National
 - d. Private
 - e. Public
 - f. Government facilitated
6. What is your age range?
- a. 21 – 31 years old
 - b. 31 – 41 years old
 - c. 41 – 51 years old
 - d. 51 – 61 years old
7. How long have you been working in the field of education?
- a. Five years or less
 - b. Between 6 and 10 years
 - c. Between 10 and 15 years
 - d. Between 15 and 20 years
 - e. More than 20 years
8. If you answered “yes” regarding using blogs for your work, how were you first introduced to them? (Please circle what applies)
- a. School policy to use them
 - b. Word of mouth
 - c. Randomly surfed the internet and found them helpful
 - d. Heard about government efforts to integrate internet to learning from the news
 - e. Took a course about the use of blogs in education before
 - f. Other _____

9. If you chose word of mouth for the previous question, who told you about the use of blogs in education? (please skip if you did not choose word of mouth)

- a. Colleague with similar experience in education
- b. Colleague with more experience in education
- c. Supervisor
- d. Principal / dean or head of department
- e. Other _____

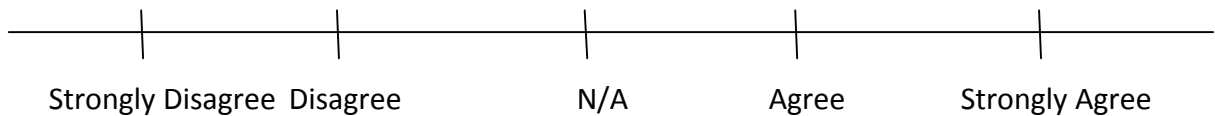
10. Please choose from the following, who you consult regarding educational innovations (You can choose more than one).

- a. ____ Your departmental / college colleagues
- b. ____ Your dean / department chair
- c. ____ The local principals
- d. ____ The local school district superintendent
- e. ____ Mentor teachers
- f. ____ Students
- g. ____ Other _____

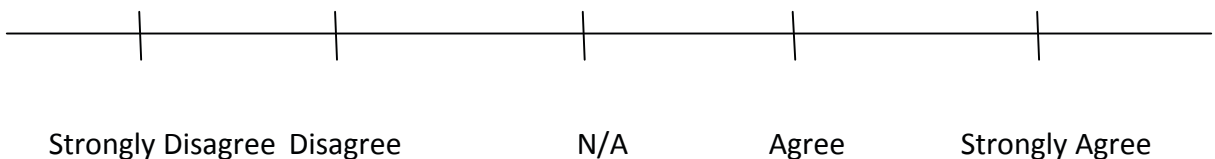
11. My colleagues are supportive of innovations and open to change:



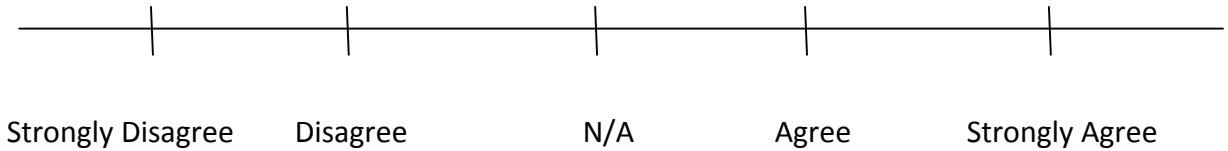
12. My local academic community is supportive of innovations and open to change:



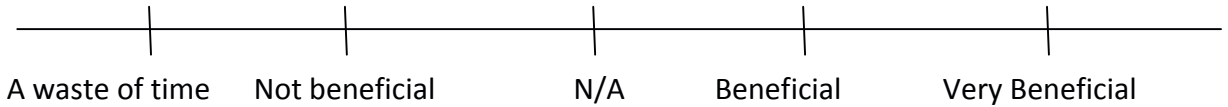
13. My principals are supportive of innovations and open to change:



14. My supervisor is supportive of innovations and open to change:



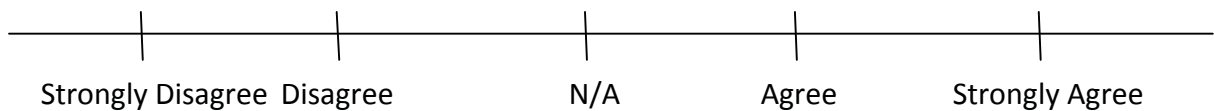
15. Using blogs in the field of education is:



16. Please mark the level you are at in terms of adopting new ideas and technology:

- a. I adopt new things after they have become old
- b. I adopt things after they have been used for a while by many people
- c. After one or some of my peers try it first and recommend it
- d. As soon as the idea is introduced

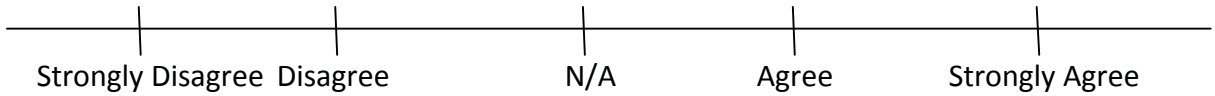
17. When a new teaching technique is introduced in the field of education you are keen to research it and find out more information about it.



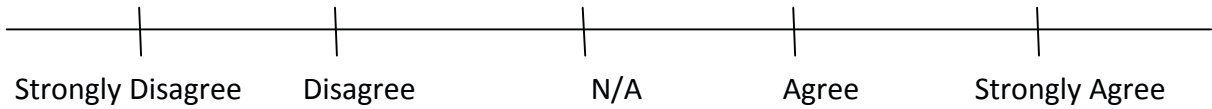
18. Please characterize yourself through one of the following descriptions:



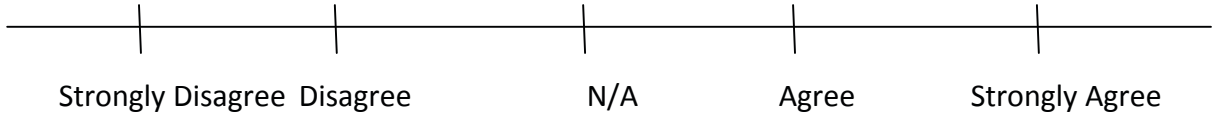
19. If a course was offered to you on the benefits of edublogging (education blogs), you would sign up for it:



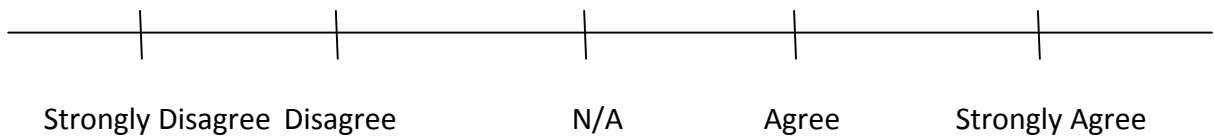
20. In order to adopt an innovation it has to be very easy to use:



21. In order to adopt an innovation it has to be tried out by a peer before it is tried out by me:



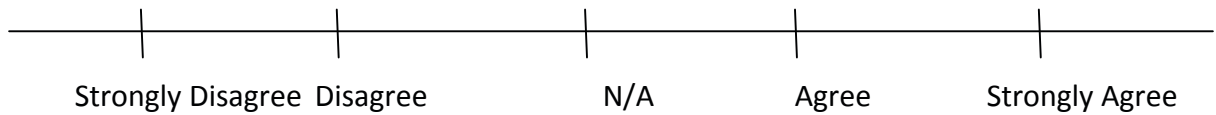
22. In order to adopt an innovation it has to show obvious beneficial results:



23. In order to adopt an innovation it needs to replace a previous educational technique:



24. In order to adopt an innovation it needs to be compatible with my educational goals:



25. When a new technique in education emerges:

- a. I venture and take a risk to try it
- b. I test it and recommend it to others
- c. I wait for others to use it and recommend it to me, but when I try it, I recommend it to others
- d. I am skeptical and cautious and don't try it until more than one peer recommends it
- e. I don't like change and will not feel comfortable trying anything new

26. What is the highest level of education you have completed?

- a. Less than high school
- b. High school
- c. Bachelors
- d. Masters
- e. PhD