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NEW MEDIA TECHNOLOGIES EFFECTED ON SCHOLARLY COMMUNICATION AREA: A CASE STUDY ABOUT EDUCATION TECHNOLOGIES AND NEW MEDIA ¹

Abstract

21st century brought a period of change that has started with technology. Change and transformation designated the start of a new period. The Internet and the concepts of new media and social media that emerged based on the Internet have made the masses running lots of their routine and current states through these media. As a result of this change and transformation reflecting on the field of education, the use of technology has increased both in academic studies and scholarly communication processes. Scholarly communication processes have changed with the increase of technology products used by academicians, and they are described as education technology.. Academic studies are now possible to be done online. Within the scope of the study, how academia underwent change with new media and education technologies and what kind of changes this process created in the processes of the scholars in Turkey communicating with each other and doing joint studies were examined and researched.

Keywords: Digitalization Education Technology, Ed-Tech, Scholarly communication, Scholarly effect, Scientific collaboration, Future of academia, academic transaction, digital innovation in academia, Education technology

¹Doktora tezinden üretilmiştir. Yazarın doktora tezinden üretilen ilk makaledir.

YENİ MEDYA TEKNOLOJİLERİ AKADEMİK İLETİŞİM SÜREÇLERİNİ ETKİLEMEKTEDİR: EĞİTİM TEKNOLOJİLERİ VE YENİ MEDYA ÖRNEK ÇALIŞMASI

Öz

21. yüzyıl, teknoloji ile başlayan bir değişim dönemi getirdi. Değişim ve dönüşüm, yeni bir dönemin başlangıcını belirledi. İnternet ve yeni medya kavramları ve İnternet temelinde ortaya çıkan sosyal medya kavramları kitleleri bu medya aracılığıyla rutin ve güncel durumlarını çok çalıştırdı. Eğitim alanını yansıtan bu değişim ve dönüşümün bir sonucu olarak hem akademik çalışmalar hem de akademik iletişim süreçlerinde teknoloji kullanımı artmıştır. Akademisyenler tarafından kullanılan teknoloji ürünlerinin artmasıyla akademik iletişim süreçleri değişti ve eğitim teknolojisi olarak tanımlandı. Akademik çalışmalar artık çevrimiçi yapılabilir. Çalışma kapsamında akademik çevrenin yeni medya ve eğitim teknolojileri ile nasıl bir değişim geçirdiğini ve bu süreçte Türkiye'nin akademisyenlerinin süreçlerinde nasıl iletişim kurduklarını ve ortak çalışmalar yapıp yapmadığını araştırdık ve araştırdık.

Anahtar kelimeler: Eğitim Teknolojilerinde Dijitalleşme, Ed,tech, Akademik İletişim, Akademik Etki, Bilimsel Paylaşım, Akademik Geleceği, Akademik Dönüşüm, Akademideki Dijital İnovasyon, Eğitim Teknolojileri

Introduction

In early decades of 20th century, manufacturing and industrial development changed many issues. Customs of education changed as well. “There was no system of primary education whatever before the Quaker Lancaster (and after him his Anglican rivals) established a sort of voluntary mass-production of elementary literacy in the early nineteenth century, incidentally saddling English education forever after with sectarian disputes. Social fears discouraged the education of the poor. Fortunately, few intellectual refinements were necessary to make the Industrial Revolution.” (Hobsbawm, 1987, p.30). 21th century opened the door with another revolution known as knowledge and information society revolution. The technologies have been changing very directly and fast. “Major change in the Conversational Age from the Broadcast Age is that more decisions are being made faster at the front lines of business, where a company representative interacts most with its customers.” (Israel, 2009, p. 72). The first change was in social life and later this change was integrated into the scholarly area. Scholarly Communication ecology has been changing as well. “Scholarly communications begin to change when scholars increasingly rely on digital sources for their research and teaching” (Waters, 2013, p. 21). “Lythenn White tells the story of the stirrup and the heavy armored knight in his *Medieval Technology and Social Change*. So expensive yet so mandatory was the armored rider for shock combat that the cooperative feudal system came into existence the equipment.” (McLuhan, 1964, p.237). The changing and innovation of technology start with Gutenberg because he introduced the printing press but Marshall McLuhan’s student Walter Ong said that “Writing is technology. Plato was thinking of writing as an external, alien technology, as many people today think of the computer.” (Ong, 1982, p. 80). But technology did not start with the computer,

looking at the other side of technology. People always use some appliances for they want to realize something. And writing is technology too. "Writing (and especially alphabetic writing) is a technology, calling for the use of tools and other equipment: styli or brushes or pens, carefully prepared surfaces such as paper, animal skins, strips of wood, as well as inks or paints, and much more." (Ong, 1982, p. 80). All of the academic and education specialists use the Web 2.0 tools and education technology in their learning and process developing because this is a very useful and easy communication model.

Aim: The aim of this research is finding the effects of new technologies on scholarly communications while using education technologies. What is the value of education technology and new media for scholarly communication perspective? What are the perceptions of academics about the future of education technology in Turkey? They are using education technology but they are not using it systematically. What is the future process of change education technologies for scholarly communication? Education systems and scholarly communications are changed and this change has been in a global perspective. The "characteristics of the mythical and the modern ways of the understanding the world" is changed with new technologies. (Habermas, 1981, p. 43).

Problem statement

New technologies and education technologies have been integrated into scholarly communication in Turkey. What is the meaning of this process for academia, academic education and the countries changing their education systems?

Hypothesis:

Education technology has been changing scholarly communication in Turkey through diffusions of Academic "Social Actions".

Research Methodology, Research Sample and Data Acquisition

Research methodology is part of the research for understanding the type of the research process. "As a research methodology, ethnographic research requires avoidance of theoretical preconceptions and hypothesis testing in favor of prolonged direct observation, especially participant observation, attempting to see social action and the activities of daily life from the participants' point of view, resulting in a long detailed description of what has been observed." (Tavakoli, 2012, p. 199).

Research methodology focuses on solving the research problem. "Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In it, we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. It is necessary for the researcher to know not only the research methods/techniques but also the methodology." (Kothari, 2004, p. 8). Methods used during this research vary.

We include those methods which are concerned with the collection of data. These methods will be used where the data already available are not sufficient to arrive at the required solution;

Methodology constitutes an important place in the research process. Research also determines which data should be used for what purposes. Method and methodology are explained in this section.

Research methodology includes one phases. This phase is the in-depth analysis questions.

Research Limitations and Constraints

A limitation of the research is that some of the academicians did not want to join the in-depth. Some of them joined but they did not want to answer the all questions. The older academicians sometimes do not understand the question or technological terminology.

Research Goal

The academician's scholarly communication in digital age constitutes the research goal of this research. Digitalization has changed the communication process. Communication and research compose an important part of academic era. Digital Technologies, new media, social media and education technologies have transformed and changed communication process in academic era. "Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. In fact, research is an art of scientific investigation.

Research Import

Academic collaboration or scholarly communication process is very important for digital century that we live in. Academic area has changed by digital transformation. New media: social media is the important part of this process. "Why does the scientist collaborate? Part of it is a result of what is often called the "division of cognitive labor." As science has become ever-more specialized and as the number of subfields within each discipline has proliferated, it has become difficult for a single person to know everything he needs to know." (Surowiecki, 2007, p. 161).

1.7.3. Research Questions are

4 questions are used to support the thesis hypothesis.

Has the use of education technologies changed the processes of scholarly communication?

Which materials and media are particularly used in the processes of scholarly communication?

What are the usage rates of education technologies in scholarly communication?

What opportunities do the organizations of the academicians provide them in the processes of scholarly communication?

Brief literature review

Social studies work on the change related to technological development, affecting scholarly communications. The meaning of theories is "a process of developing ideas that can allow us to explain how and why events occur" (West, 2004, p. 44). Every theory is part of a grant theory: "grant theory that attempts to explain all of a phenomenon such as communication" (West, 2004, p. 44). Marshall McLuhan has theories of "Mechanical Bride", "Technology is extension of human body" and "Medium is the Message". Those are theories of technological development processes and focus on the effects in people's lives and social spheres. Walter Ong, his book "Orality and Literacy emphasizes that "Writing is the technology", "The reason is that the term can give a false impression of the nature of verbal communication, and of other human communication as well. Thinking of a 'medium' of communication or of 'media' of communication suggests that communication is a pipeline transfer of units of material called 'information' from one place to another." (Ong, 1982, p. 171). Donald J. Waters studied the "Changing ecology of scholarly communication using education technology and new media

perspective”. (West, 2004, p. 43). Social sciences are part of scholarly communications. Communication theorists use social sciences for studying social effects of technological development process.

THEORETICAL FRAMEWORK

The theoretical framework is important to understand the communication between technology, communication and scholarly communication. “The last three decades have been marked by the gradual digitalization of human culture, knowledge and learning. Evolving digital media and technologies – such as computers, the internet and mobile devices – have been constantly generating new waves of promises and fads.” (Markauskaite, 2010, p. 79). The face of communication changes with technology. Digital devices and social media is usefull for peoples communication process. Technological artifacts and computers could be useful for assisting with or doing some traditional cognitive tasks (Markauskaite, 2010, p. 92). Traditional communication process starts with oral culture. Walter J. Ong calls it “The Technologizing of the Word” his book of *Orality and Literacy*. Firstly, oral culture starts with the first communication process. People tell and memorize the cultural things. Second of them is literacy when the first letter of Semitic alphabet using this literacy culture process started. “When this is all said, however, about the Semitic alphabet, it does appear that the Greeks did something of major psychological importance when they developed the first alphabet complete with vowels. (Ong, 2002, p. 5). We have had to revise our understanding of human identity.” (Ong, 2002, p. 88). Academic process changed with Gutenberg’s press. Reproducing a book is very easy. “Darwin and Gutenberg, inventor of the printing press, were as honored among radicals and social democrats as Tom Paine and Marx. Galileo's 'And still it moves' was persistently quoted in socialist rhetoric to indicate the inevitable triumph of the workers' cause.” (Hobsbawn, 1987, p. 263). The third change of this process is computer and internet.

HISTORICAL BACKGROUND

Information is given regarding the processes of scholarly communication and education technologies that constitute the main purpose of the study in the sense of when they emerged, how they developed and how they took shape.

The historical background of communication is started with oral culture, later this process changed with writing culture. Communication is the process. “First, we believe that communication is a social process. When interpreting communication as social, we mean to suggest that it involves people and interactions, whether face-to-face or online.” (West, 2010, p. 4-5). Communication is the social responsible for people to communicate with each other actively and directly. Communication has a social action from people to people. It is sometimes face to face, sometimes uses another machine. Communication is a changing process from year to year. “Katherine Miller (2005) underscores this dilemma, stating that of communication has been abundant and has changed substantially over the years. Sarah Trenholm (1991) notes that although the study of communication has been around for centuries, it does not mean communication are well understood.”

Communication

Communication is the processes of people’s minds being in good communication with others’ minds. That process is sometimes an oral and sometimes written culture. Third wave of communication is the digital culture. “Communication scholars may approach the interpretation of

communication differently because of differences in scholarly values. With these caveats in mind, we offer the following definition of communication to get us pointed in the same direction.” (West, 2010, p. 5). But there are some differences in these definitions and terminology. Scholarly communication area has changed with digital process. “Scholarly objects are available online in multiple forms and places. Articles may be described by several indexing and abstracting services, and their full content may exist in more than one database.” (Borgman, 2007, p. 9). Academic research and finding some research databases are quite easier than before. Technological development process has changed the face of academic staff researching and scholarly communication process.

Technology

Technology is rapidly changing in the 21st century. The name of the new communication process is technology. Globalization and technology are important parts of the new digital world. “The critical analysis of globalization discourse presented here also applies to the so called neoliberal discourse which many have identified as the dominant discourse of globalization process.” (Held, 2007, p. 138). Technology gives a chance for global digital world in social media. People communicate with each other easily. The name of this process is transformation of communication. The academic person communicates with each other very easily too.

Scholar Communication

“Science communication cannot exist in a vacuum, however. When talking about vaccination you have to consider parents’ instinct to protect their children from any threat, real or perceived.” (https://www.theguardian.com/science/blog/2014/oct/10/science-communicators-quantum-physics-granny?CMP=share_btn_link) (25.03.2016-14.15). Science communication and scholarly communication is a process of direct or online communication with others. “The first collaboration relied on standardized instrumentation that was familiar to all specialists in the field; scientific novelty required deploying the instruments in a coordinated fashion.” (Olson, 2008, p. 123). Scholar communication is the terminology of collaborating in academic research processes with others. Academicians use the communication tool to communicate with each other. New media and new technologies has changed the collaboration and communication model for academic research and academic scholarly communications. “One way of performing an objective evaluation would be to determine conversion requirements based on the process used to create the original document.” (Ekman, 1999, p. 41).

2.6. Scientific Collaboration

The first step to innovative academic interactions is using the technology. Scientific collaboration is an important part of the academic research and scholarly communication with other academicians. “The qualitative and quantitative study of collaborator design and usage, examining both the technical and social aspects of performance, the creation and maintenance of a Collaboratory Knowledge Base, a Web-accessible archive of primary source material, summaries and abstracts, relevant generalizations and principles, a database of collaborator resources, and other related materials.”(Olson, 2008, p. 4). To use other sources actively, the person must use collaborative data within his/her own research. For finding news indirectly, the data and the database should be successfully managed. In the academic research process, the researcher finds the new thing and later goes to bibliography and finds the other news. This process is the managing of the data process. “The primary purpose of the first step is to broaden management’s perspective by spelling out all of the major identifiable changes the industry could face within

the planning horizon.” (Fahey, 1998, p. 372). The first collaboration process has started with the planning of horizon of the collaboration principle: “the abstraction and codification of principles, heuristics, and frameworks to guide the rapid creation and deployment of successful collaborations, including principles of design or customization.” (Olson, 2008, p. 4).

2.7. Scholarly Communication in Research Strategy

Researching tools is the first part of the academic research and academic scholarly communication process. Articles, thesis and all research projects are important part of understanding and applying them to the researching tool. “Doctoral students impacted by academic capitalism are those who work in search sponsored by industry or in areas that might lead to patents. The life of doctoral students affected by academic capitalism resembles the life of Nate in chemistry.” (Gardner, 2010, p. 115). The first difficulty in all academic disciplines is to find and analyze data. Analyzing is the most important process of writing and researching strategies. “To evaluate the system, we conducted a repeated measures controlled experiment that compared the process and outcomes of scientific work completed by twenty pairs of participants.” (Olson, 2008, p. 171). Scientific research methodologies and creative research methodologies are important part of research projects for participants. Some of the data cannot be measured by using social methodology. Scale or survey may be used in research project while internet and digital technologies are useful for finding related data. Finding data has opened a new door which is called ‘Big Data Terminology’. “The term “Big Science” does not discriminate among big, bigger, and the biggest or among ways of measuring size. Size may be indicated by the number of scientists, total size of staff, amounts of money, length of time, or scale of instrumentation.” (Olson, 2008, p. 67). Big Data and Big Science terminology have started with the researching of objectives of scientific collaboration.

The Future of Scholarly Communication

The scholarly communication face has changed with digital technology. This change has started with the Internet. Blogs, Wikis, Facebook, Twitter and other social media tools developed the scholarly communication process. “Social media tools and technologies are built upon the principles and practices of Web 2.0.” (Shorley, p. 90). These social media tools have changed with Web 2.0 because people give feedback for other people’s reviews. “Some of the research in online communities is also relevant to laboratories. E-communities, as they are sometimes called, are typically volunteer-staffed bulletin boards mailing lists, wikis, blogs, or other Web sites devoted to a specialized topic.” (Olson, 2008, p. 254). E-technology is changing all of the researching process. The process is directly changing and the future of collaboration also changes with this perspective plan. “It analyses the ways in which self-archiving has so far developed, examines the possible benefits and drawbacks of self –archiving, and outlines the potential impact of the practice on scholarly communication.” (Gorman, 2005, p. 104). Academicians communicate with each other in order to increase their academic knowledge. The change started with the beginning of industrial revolution and then everything changed immediately. “The standard starting point for coping intellectually with a phenomenon such as Kamioka is the phrase “Big Science” which is more than a label but less than a concept. Since its introduction by Price (1963) and Weinberg (1961, 1967), the term has become a fen of vagueness and ambiguity through overuse.” (Olson, 2008, p. 2). Big science terminology started with World War II because the product management process and product manufacturing process changed after World War II. Communication is the first important area for people to use in their daily lives.

But the technological development changed the communication tools. “Kaplan and Haenlein classify social media tools on two scales. The first describe the extent to which the tool allows participants to communicate with each other, without intermediation and in real time: tools on this spectrum might range from blogs, which are at the low end can talk to anybody else in real time.” (Shorley, p. 90). Social media has changed the communication process and people started to communicate with each other visually and virtually. Social media and the Internet have changed the researching process environment. This imaginary world gave a second life for people to communicate with people virtually. “Most researchers are, at best, infrequent users of social media: one study found that just 13% of researchers used Web 2.0 tools at least once a week. One important reason for low uptake, found across several studies, is the time that it takes to learn how to use these new tools, and their fragmented and specialized nature.” (Shorley, p. 91). The researcher’s culture has started to change with the changing communication process. Doctoral studies and academic studies have changed with socialization process and the changing technology.

The future of scholarly communication might be in such a way that academicians communicate with others virtually. Reading strategies and reading tools have also changed with digital world. Emotional social responsibilities of people have changed as well. The new philosophy is digital world and digital exuberancy.

Channels for Access to Scholarly Information

Scholarly communication is important part of scholarly information model. Scholarly academic model is based on collaboration for this information success. “Because of the way the collaboration functioned, different labs were able to work at the same time on the same samples, multiplying their speed and effectiveness.”(Surowiecki, 2007, p. 159).Collaboration is the part of researching and finding news in a quick and effective way. Different knowledge is used in collaboration process. This systematic knowledge is interdisciplinary. “Collaboration allows scientists to incorporate many different kinds of knowledge, and to do so in an active way than simply learning the information from a book. Collaboration also makes it easier for scientists to work on interdisciplinary problems which happen to be among today most important and interesting scientific problems.” (Surowiecki, 2007, p. 161-162). Collaboration is the part of getting other countries’ researchers and academicians together. This collaboration process is international.

The Future of Scientific Collaboration and Scholarly Communication

“Social penetration theory will change in the future because of the Internet.” (Mc Carthy, 2009, p. 18). The internet is the twenty first century’s social phenomenon. That information is giving more penetration to people for their academic sharing. In the early decades of nineteenth century, people used to share news in printed material. Printing materials opened a new door for academic review sharing. “Reference books also offer a new angle from which to consider the impact of printing in early modern Europe. Since its beginnings as a subfield in the 1980s the history of the book has generated much new work on the impact of printing and the notion of “print culture”. Culture has changed with technological development and printing culture has changed with technological development, too. Printed books are the important part of industrialization. Some sectors are overtaken about printing by industrialization. “Elizabeth Eisenstein has made the most extensive claims for the impact of printing, emphasizing the cumulative improvement across successive editions and the rapid and broad diffusion of books.” (Blair, 2010, p. 8). Books are used in different fields of studies as compared to others. When compared to

nineteenth century books, the future of book is different now and industrial development has changed as well. Offline world usually reads the books but nobody knows who read or liked it. But now habits have changed and everybody share their knowledge. Anticipation of future interaction both in the on and off-line world represents external influences which alters the way in which individuals present themselves to another, or in the case of Facebook, a community. (Mc Carthy, 2009, p. 18). Important data is shared with others and their sharing is shared with others, too. This kind of information is called “spider web”. Information is changed day by day. Every knowledge changes with new data and knowledge. “Historians have pointed especially to three main sources of information explosion in the Renaissance: the discovery of new worlds, the recovery of ancient texts, and the proliferation of printed books.” (Blair, 2010). Books have always represented trustful information to people. But renaissance was the changing face of printed media. People were writing the books with their hand writing. But printed machinery is very useful to copy too much text. Gutenberg found the printing machinery and everything changed because writing and sharing the book was the industrial culture for this period.

New Media

Change is a very important part of the 21st century. Everything is changing day by day. “In china and Japan, printing had been practiced for a long time from the eighth century, if not before but the method generally used was what is known as block printing the carved wood block being used to print a single page of specific text.” (Briggs, 2002, p. 15). The process started with the printing machine invention. The main reason for the change was the technological equipment. The used materials and methods were changed. Science changed the ways to access information over the centuries. Change is inevitable in the academic field but information production has been changed according to modes. Change and transformation also result in the change in the printing and publishing processes. “Scholars or more generally anyone in search of knowledge had other problems. Let us look from this point of view at the so-called information explosion, a metaphor uncomfortably reminiscent of gunpowder which followed the invention of printing. The most serious problems were those of information retrieval and linked to this, the selection and criticism of books and authors. There was a need for new methods of information management, just as there is today, in the early days of the Internet.” (Briggs, 2002, p. 18). Technology has facilitated transportation. Books are easy to transport so that people in different countries read the same book. “Changes in the media system also need to be related to changes in the transportation system, the movement of goods and people in space whether by land or water. The communication of messages is, or at any rate was, part of the system of physical communication.” (Briggs, 2002, p. 23). 21st century media has under gone change. In 100 years, media has renewed itself in different ways. The media has increased its knowledge in shaping technology. “During the past 100 years, the media have been transformed into one of modern society’s most important institutions, exercising, influence in virtually all aspects of social and political life, assuming a central role in the shaping of culture, and becoming one of the primary ways by which people learn about and interact with their world and between each other.” (Si ochru, 2002, p. 25). World Wide Web as one of the greatest technological innovations has undergone changes in web publishing and academic fields. “By then ecology of a World Wide Web (www) had been transformed, not from a United States base, but from Cern, a European particle physics research institute, nesting under mountains in Switzerland, where an Englishman, Tim Berners-Lee, devised what he called the ‘world wide web’ in 1989. Suppose I could programme my computer to create a space in which anything could be linked to anything he

speculated.” (Briggs, 2002, p. 309). Median change began with the radio. He moved to television media with a visual dimension. New media and interactive media concept emerged with the Internet. The audience was not just the audience but also the performers. Social media audiences brought themselves to a reporter position now. “As the century wore on, the pace of change accelerated. Radio was around for thirty-eight years before 50 million radio listeners could tune in. Television achieved the same number of users in fourteen years. For years after the privatization of the U.S. backbone in 1994, widely regarded as the moment the Internet became a public network, 50 million people were online. By the end of 2000 this number had risen to an estimated 400 million, with growth estimates exceeding 100 percent per year. As an indicator of the growth of new multimedia, RealNetworks, the company that makes the most popular consumer software for streaming radio and video over the Internet, claimed 200 million unique registered users five years later.” (Siochru, 2002, p. 25).

Education Technology

“From the mid-17th century to the closing years of the 18th century, new social, economic, and intellectual forces steadily quickened—forces that in the late 18th and the 19th centuries would weaken and, in many cases, end the old aristocratic absolutism. The European expansion to new worlds overseas had stimulated commercial rivalry. The new trade had increased national wealth and encouraged a sharp rise in the numbers and influence of the middle classes. These social and economic transformations—joined with technological changes involving the steam engine and the factory system—together.” (<http://global.britannica.com/topic/education/Western-education-in-the-19th-century-03.03.2016-14.00>). Education is the area of understanding the development of people’s knowledge and their information process. Education system has changed with technology. Education technology and education technology material have been systematically changed in 21st century. In the early decades of 19th century, education means started to change. “How effective has online learning been in improving (for at least maintaining) learning outcomes achieved by various populations of students in various setting? Unfortunately no one real knows the answer to either question on the important follow on query about cost savings. There have been literally thousands of studies of online learning.” (Bowen, 2013). Education system has changed with online education system that is why global education means equal education for all. Lifelong learning program has started with online education tools. American education system uses too much education materials with their curriculum. 21st century education system’s important part is education technology. Some of them are Ipad, projection machine, kindle, computer, social media and other useful education technology materials. “One important value you glean from studying communication theory relates to your critical thinking skills.” (West 2010, p. 22). Critical thinking skills have started with reading culture and writing culture. E-books are the other important part of our lives for gaining critical thinking skills. Some of the universities have online education programs. These are graduate or bachelor degree programs. “At one end of this highly variegated landscape is an extremely large number of relatively straightforward online courses that provide an assortment of instructional materials on the web, often including videos, practice problems, and homework assignments.” (Bowen, 2013). People find online education certificate programs and PhD programs in other countries very easily by using the internet. “A meaningful education enables the individual to grow, develop and give expression to his or her personality, as presented in the previous principle. A meaningful education, which includes meaningful learning, is one of the rights of the young person and the citizen of a modern city.” (Dvir, p. 46).

Interactive education is an important part of the education system. Some of the countries do not have specific programs at their universities. The people who want to specialize in the field of area are able to choose online education programs – “Digital and face to face dynamics and interrelations” (Kent, 2014, p. 28). Those programs give a chance to people in communicating with the expert persons for their area in other countries.

New Technologies and Their Social Effects

“Centers of oral communication included taverns, public baths and coffee-houses, an innovation in this period. Istanbul was famous in the late sixteenth century for its coffee houses, some 600 of them. Storytellers performed there, as they still did Yugoslavia in the 1930s when Parry and Lord visited the kafanas, as they were called, with their tape recorders.” (Briggs, 2002, p. 30). In the 19th century, socializing was defined as going to theater or taking some coffee, and it was the part of daily routine of people. They were sitting in their house with their friends and relatives. Socialization process has changed as time goes by. “The development of electrical communication, beginning with the telegraph, a sense of imminent as well as immediate change developed, and the media debates of the second half of the twentieth century have encouraged re-evolution both of the invention of printing and of all the other technologies that were treated at their beginning as wonders.” (Briggs, Burke, 2002, p. 11). In conjunction with electronic communication, a new era began. The basis of this new era was social media and digital communication. The digital age introduces a new technical term which is technological innovation. “Technically, the world digital refers to binary digits, the zeroes and ones, that represent data manipulated and stored by a computer. The term is more broadly used to refer to anything relating to computers. It is often said that this is the digital age, a statement that conveys the extent to which computers and technology are pervasive.” (Johnson, 2005, p. 2). They returned another way as a result of social diffusion and digitization of communication. Social diffusion has changed the ways they communicate with it. Social penetration theory has changed the social communication tool on the Internet. “Learner shared this concern with members of the office staff, who were upset and offended to hear that there were questions about thank you acknowledgement.” (Balzer, 2010, p. 5). The dialog has been renovated with a new layout and has entered a new way of communication. Digitalism has changed the process of communication. Digital resources help academicians and students to search more easily for the information they needed. “Digital libraries can lead to a huge array of scholarly resources, both print and digital, but if students restrict their information discovery to digital resources, and ignore the truly vast record of knowledge that libraries have played a role in preserving throughout history, they wall themselves in.” (Johnson, 2005, p. 85).

New Technologies and their Scholarly Effect

Scholarly communication area is affected by new technologies. This is called scholarly effect for academic area. Communication process has changed with technological changing. Team communication is a part of the scholarly communication. “The more a team communicates in a longitudinal task, the stronger transactive memory system is.” (Tierney, 2014, p. 159). Social instruction is a part of the scholarly communication. Scholarly communication means communicating with each other for academic achievement. That academic achievement is a part of the academic research and communication process. The early decades of the 19th century were not an easy period for the communication with others. But later in time, technological developments, new devices and new technologies of the 21st century have affected scholarly communi-

education area. These affected academic research and academic sharing changed rapidly. Cognitive interdependence is an important part of the scholarly communication. “Being cognitively interdependent means that group members rely on each other for the learning of information. An individual’s success relies not only on what she knows but also on what her teammates know.” (Tierney, 2014, p. 158). Face to face communication is an important part of the scholarly communication. Memory is the transformative perspective and process. “The percentage of communication that is face to face is also a predictor of transactive memory. The more face to face communication, the stronger the transactive memory system suggest that face to face communication is more important earlier on when group members are still learning each other’s areas of expertise than later on when group members are utilizing known expertise.” (Tierney, 2014, p. 159). Social activity is important for the scholarly communication area. Social companies are the social and interactive ones that study together. “Creating the social company, how vertical and lateral engagement work together to create both depth and breadth of engagement. One of the end results of this type of activity is a conversation funnel that begins with awareness of the brand, leads to regular online participation with the brand via social platforms, and converts social participants into customers.” (Blanchard, 2011, p. 19). The development of different technologies has also been accompanied by a parallel development in media organizations – such as film companies, radio and television stations and networks, computer software companies – that attempt to exploit the technologies commercially and that look like a type of differentiation.

Education Technology and the Future of Academia

The academic climate is changing along and shaped with technology. This change depends on the basis of academics and academic work. Every day more and more technology is used in the academic field. The area of use enlarges while communication in the digital environment increases. “The web has become even more pervasive with the growing availability and diversity of devices providing connectivity. Mobile computing has enabled the surge of an entirely new sector of learning: mLearning. This area has grown exponentially with the use of devices within several categories, including smart phones, netbooks, tablets, e-readers, and laptops.” (Shattuck, 2014, p. 21). The communication ways and methods of new generation vary. The reason of the change is the interaction between technology and human communication. “The growth of new relationships between humans and technology and the emergence of new intergenerational relationships struggles over new forms of knowledge and democracy and the intensification of radical economic and social inequalities.” (Facer, 2011, p. 7). Communication difficulties can occur according to the instance and flow of technology usage. Smooth and instant message flow will be obtained in the future by advancements. “Never technologies need to support the creation of valid automated and adaptive assessment tools, both formative and summative, at lower cost. These technologies should also support and facilitate the process of grading marking and the inclusion of relevant feedback.” (Shattuck, 2014, p. 35). Access to technology will become easier as technology costs fall. Technological hardware in the academic field will become accessible more quickly. “The use of social networking technologies is evident in a number of ways within higher education pedagogies. As part of suite of possibilities in Web 2.0, Facebook is used in a number of ways to support communications within and between institutions and their students as well as a mechanism for teaching and learning within specific units of study.” (Wankel, 2012). Social network society has changed over years. This changing process has developed by new technological devices. Every year, new applications are adapted to the

technology. “Introductions, another component to successfully dealing with the emotional side of the learning experience is to appropriately set expectations.” (Quinn, 2012).

Knowledge technology or the technological development is a part of the routine for academic area. Communication – knowledge technology is changing continuously.

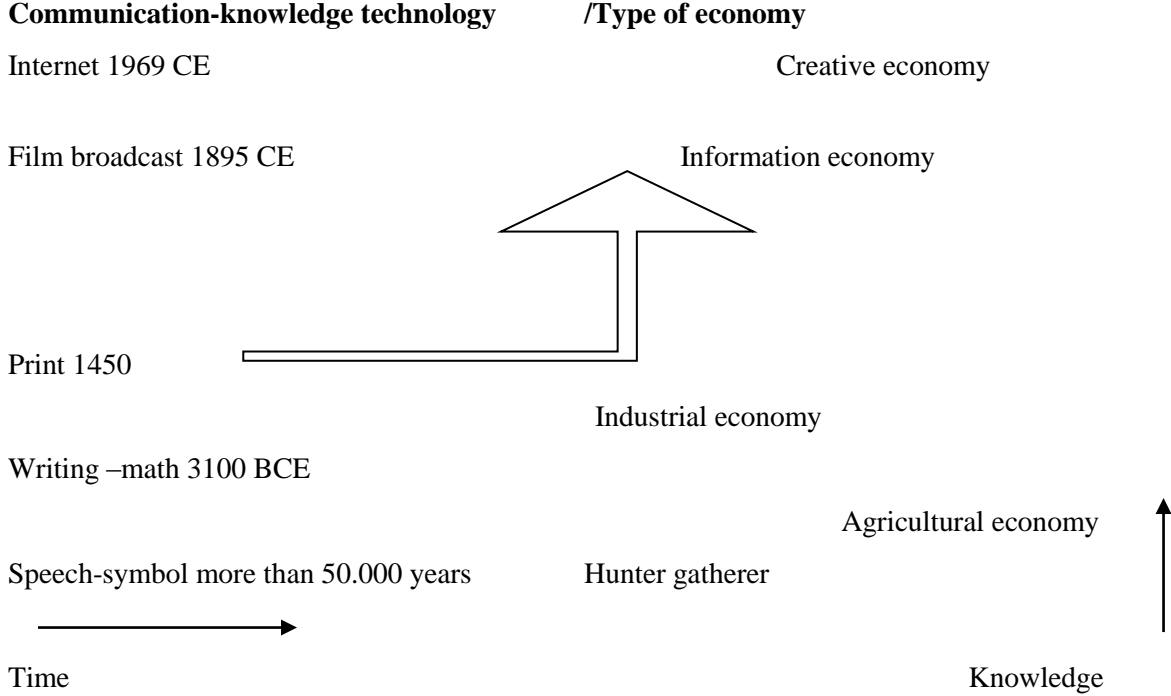


Figure 6

(Hartley, 2012, p. 56). Some of the perspectives have changed with technology but some of them are affected by economic growth. The basis of the system changing along with economic growth is technological growth. “Concerns about the increase in the cost of education and the consequences ballooning of student debt have led to increased public scrutiny and the creation or enforcement of more restrictive regulation and policies.” (Shattuck, 2014, p. 7). Increase in the cost of education is affected by the technology usage. Researching is very difficult without using technology or the Internet within the research/study area. Communication technology and education technology consist an important part of the academic scholarly communication and academic research. The future of the academy may use technology within their scope of area. “A social and cultural expectation that information communication technologies (ICT) should be ubiquitous within daily lives is apparent.” (Wankel, 2012). New changes and developments in technology affect the academy. In the next century, Academy of Education and technology will go on producing innovative solutions to exist.

Population and Sample

“The world wide social media network which emerged as a product of the digital revolution, nowadays, ordinary life business, academic and political studies is one of the most important concepts.” (Eraslan, 2015, p. 471). People, Communication, Information Retrieval, purchasing, decision making, making friends, research, political discourse, agenda-setting, information sharing needs, such as human behavior and longer conducts are all about the digital technologies. Research sampling group consisted of academicians who live in Turkey and the big metropolis of Is-

tanbul. “The first step in sampling is to define the population of interest clearly and accurately. Such definition may seem obvious to a novice, but it is where survey design can all too easily be defective.” (Sapsford, 2006, p. 27). 150.886 academicians are active in Turkey at different Universities. According to figures in Turkey 2016; 158.800 academicians are actively engaged in the task. These scholars who serve in the Metropolitan region actively uses technology. Academicians are selected from 6 different Universities in Istanbul and in-depth analysis and survey questionnaires were conducted with them. Then, 30 academicians were selected for in-depth analysis who uses education technologies at a high level.

“The objective will be to obtain estimates of population parameters, and some methods will do this more accurately than others. The choice of method will be a question of balancing accuracy against cost and feasibility. The methods available fall into two main categories: probabilistic sampling and non-probabilistic sampling. *Probabilistic sampling* includes simple random sampling, stratified random sampling and, if selection is at least in part random, cluster sampling. The most widely used method of *non-probabilistic sampling* is quota sampling.” (Sapsford, 2006, p. 29). Research sampling is using non-probabilistic sampling. This local research in Turkey includes different universities in Istanbul. 2 of them are state universities and 3 of them are private universities. In-depth analysis. Hi level users of technology, who were 30 people, participated the in-depth analysis.

Indepth Analysis

Common answer is social media is actively used in their daily and regular academic life. While facebook is used by 20 of them; LinkedIn, Twitter, Academia.edu is commonly used social networks. Only one academicians use Onenote and Google Drive.

They also expressed the intensive usage of technology in future and like hologram education.

When compared the State Universities vs. Foundation Universites; it is seen that technology usage in State Universities is comparatively low.

Number of academicians using internet in their academic sharing's and benefit from the University's technological infrastructure consists the 100% of participants.

The point of "when and where academicians use technology in scholarly communication" is examined by indepth analysis. Also the way of scholarly communication process and it's trend in Turkey is searched.

It is seen that academicians communicate with other academicians in domestic abroad countries for scholarly communication.

30 of 30 academicians benefit from LinkedIn, Academia.edu, Facebook, PC and Internet.

Most of the academicians expressed that they use digital publishing and use social media to communicate with their students rather than academic research. Social media is just followed to know about the conference announcements and promotes.

Academicians commonly attend to European projects with other academicians acquainted in scholarly communication process.

Regarding to the common responses gathered from academicians, it is seen that the education technologies has an important role in academicians daily life and it will have more in near future. Half of the academicians think that education technologies will also create new fields in the future.

17 of 30 academicians who works in foundation Universities are satisfied from their University's opportunities.

5 of the academicians are following academic blogs and web sites. Academicians especially from B University have reflected the high level technological framework established in their University. Also every student and teacher have been equipped with tablet. They use one note and drive for academic document management.

Academicians think that academic honesty is an important and inseparable part of scholarly communication and Turnity which indicates the plagiarism is cared so much.

Turnity is used in other universities within student's and academicians thesis and article compose process to prevent plagiarism.

Also it is seen that academicians from state university are not obligated to use education technologies, they are free to use education technologies while making the year plan.

These academicians think that government should invest more into education technologies to provide further academic research and scholarly communication.

CONCLUSION & RECOMMENDATIONS

This research aims to prove that education technology has been changing scholarly communication processes and this has become a social action, and this is the basis of the hypothesis. In this context, four main research questions were prepared. 30 academicians were personally interviewed with in-depth method of analysis. The answers of the academicians were analyzed by statistical analysis.

The first research question and the results of the relevant research are exhibited and detailed below.

Has the usage of education technology changed scholarly communication processes?

21st century has brought along many changes in the fields of education and technology. The scholarly communication processes used to continue with paper, pen and books ten years ago, however the situation has changed at the present time. Student information systems constitute the first stage of the inception of the usage of technology as a material in education. The records kept in computers facilitate the jobs of academicians and administrative staff. Academicians sharing visual presentations with their students have come to an easier state with overhead projectors, slides and applications like PowerPoint, etc. Apart from the opportunities of academicians giving lectures, entering information and grades, averaging grades and other data and making analyses easier, this state enables academicians to allocate more time for academic studies. The possibility of doing academic studies in a common collaboration is becoming easy and accessible with the utilization of education technologies. Scholarly communication processes reveal the fact that the emergence of social media has accelerated scholarly communication. The social media fields like Facebook, LinkedIn and Academia.edu have become fields of communication that are frequently used by academicians. The usage rates of social media of academicians working at state universities and foundation universities are distributed equally. On the other hand, the usage of the education technologies that are not among the extensive services presented by universities is seen to be provided more by the foundation universities. Therefore, the scholarly communicating processes of academicians working at state universities using technology are less than the academicians working at the foundation universities. The Internet and social media have accelerated the processes of scholarly communicating and collaborating jointly. The processes of conducting joint works and projects of the academicians in different countries and regions have gained speed and promptness with the Internet and social media.

Which materials and media are particularly used in scholarly communication processes?

The researchers who attended 30 personal interviews within the scope of the research stated that they particularly and frequently use social media. Academicians can particularly and actively communicate in scholarly communication processes regarding the usage of social media. They can follow new publications, conferences and academic and scientific developments on social media. They can research the academic institutions and pages of associations and universities at which they can do joint studies. They can reach the academicians at other universities via email. They can attend conferences and seminars by applying online. This study revealed the fact that scholarly communication processes have undergone a change with education technologies and social media. Academicians prefer to communicate with technological tools instead of letters and face-to-face meetings. Especially websites like Facebook, LinkedIn, Twitter and Academia.edu are used for the purposes of social networking and following people. The academicians participated the research from state universities indicated that the technological opportunities that their universities provide are less than the opportunities that foundation universities provide. On the other hand, the academicians who participated the research from foundation universities indicated that the technological opportunities that their universities provide are more than the opportunities state universities provide. It is possible to observe that especially technological equipment like technology laboratory, smart board, laptop and tablet are seen as the technological opportunities that foundation universities present. It is also possible to observe the fact that media like YouTube, databases of publishing houses and online share platforms are used less at universities.

Recommendations

Scholarly communication processes is a newly-developing field in Turkey that develops with technologies and inventions added every second. Across the globe, scholarly communication is seen to be differentiated and changed every year in connection with technology. A specific view considering especially the universities and the academicians participated this study exhibits the fact that the rates of academicians using technology in education and using technology and social media in the processes of scholarly communication and academic collaboration are generally high. However, these utilizations do not have a certain order and average distribution, and the initiative is given to the university and certain people. The usage of technology in academic studies facilitates producing new information and making inventions. Thus, as an innovation in the field, the higher education institution has to determine a policy regarding the active usage of education technology and social media in scholarly communication processes, and universities have to act within this policy and framework. After determining common rules and frameworks, establishing a national and international scholarly communication share platform where it will be possible to share national and international publications, find partners and follow projects and conferences, and in this context, universities meeting in a common scholarly communication procedure will have importance in the enhancing and organizing of these processes countrywide. These will also contribute to the production and spreading of scientific information.

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