

A Piece of Qualitative Study About Digital Natives

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ABSTRACT This research is conducted to examine how the concepts of digital natives and digital immigrants are represented in the literature. Therefore, qualitative research methodology was preferred for the research. Data collection was done through literature review. Keywords such as digital natives and digital immigrants in education are used to search for details about digital natives and digital immigrants in education settings. Thus, literature review is analyzed to find common points in the researches. Findings show the importance of new technology and the usage of technology in education settings, and also how the digital natives learn within this age. To sum up therefore, it is proven that being a digital native and being a digital immigrant are two different things in an education setting. In recent studies however, issues such as being a digital native and being a digital immigrant are to be adopted as novelties and learnt within a multiplatform. Thus, learning platforms and techniques are constantly changing with respect to technological changes, and the students are also influenced, as their way of learning keeps changing.

INTRODUCTION

The Internet technology has become a very big part of the lives of human beings today (Kaur and Sharma 2015), because it is being used in every facet of human existence. A great number of problems have been recorded in places where one lacks this technology. The development of technology and digitalization provide alternatives and an access into a world of respect and satisfaction and of needs as well (Lissitsa and Svetlana 2016). Nature of the current generation of citizens' lives has been changed by the development of computer-technology.

Computer technology is part of recent generation of students (Wang et al. 2014). For example, digital developments in information and communication technologies have made it significantly easier to access information (Kaufman 2015). Also, newer technological developments have evolved, which provide faster and easier connectivity to the world (Cerrudo 2015). The world has now turned digital, and this new generation is actively involved in the use of technology in every aspect of life, such as in the social media (Boyd 2014). Because of this reason, the new generation has assumed as digital native and claim that the new generation is familiar with technology as mentioned. They are lucki-

er in this regard than the past generations. They did not experience lack of Internet technology. Therefore, this generation has been categorized with respect to some characteristics. The generation of people who were born after the 1980s, see digital and technological tools as an important part of their lives, they use technology to do their daily work, to enhance continuity and to develop special/particular languages, which are able to use these tools without any necessity, and are identified as digital natives (Cetin and Ozgiden 2013). Therefore, the "non-digital native" is an important concept. They are regarded as digital immigrants, who migrated from lack of the Internet technology period (Wu 2015).

Since technological progress has occurred at a great pace, therefore, the generation that was born into this new age immediately encounters technology and is a product of it. However, the previous generation only experienced this new technology, 20 years after their birth. As a result, a digital divide exists between the two generations. Different cultures around the world have been trying to increase the benefit of information and communication technology in the area of education in their countries and all these efforts can be perceived to be major breakthroughs in the society. In the digitalized world, and in addition to this division between generations,

technology has improved incredibly and has brought about changes in the field of communications. For instance, radio, television, telephone, and the Internet have become an integral part of human beings' daily lives (Bennett 2006). The Internet technology includes all in one (Bulunmaz 2014). The necessity has therefore arisen to transfer all of these technological improvements into learning and education in order to take full advantage of the digitalized world to improve lives. Thus, the new generations are adapted to these changes, and they can be familiar with any other changes with respect to Internet technologies (Goktas 2010). Using technology in the school can influence and shape the students' technological experiences (Ng 2012).

Besides, when examining all expected human qualities in today's information society, the aspects that are encountered the most are finding information, analyzing information, choosing useful information, organizing information, controlling the process of learning, doing group/teamwork and working cooperatively. Expected attributes that reflect school processing are only possible with varying information and skills. There is no benefit for the individual and society in producing individuals who simply memorize specific information, and use this information only during their examination period. Society needs individuals who can find information, analyze the information they have found and group the information significantly, instead of individuals who merely learn by rote (Kara 2008).

The Aim of the Study

The Internet technology and the effective use of the Internet in the 21st century, has made an important contribution to education. With the advancement in Internet technology, education systems are influenced and new concepts arise with respect to students' profile. Therefore, this study aims at investigating how digital natives and digital immigrants have affected the concept of education in the last decades, and at investigating how much the digital divide (experienced in education) was emphasized in information and communication technology, through the previous studies that have been carried out in the field.

Digital Native

Marc Prensky claims that individuals are divided into groups of those who use information and communication technology actively and those who do not (Tonta 2009). According to Pedro, the first groups are referred to as "digital natives" and they are often called students of a thousand years, the Internet generation, cyber children, zapping humans and grasshopper minds (Sahin 2009). Digital natives are often defined as people who were born into the digital age that is now, who encountered technology from a young age, who improved technological language and who are the new learner generation. Digital natives were born after the 1980s, and such authorized users can use video games and cognitive abilities, learning styles, and new digital devices such as the Internet (Teo 2013). In addition, "*Today's students make significant use of ICT in their everyday lives for both leisure and communication/social interaction purposes. This definitely affects their expectations and needs as well as their attitudes and choices, and indeed, they also show well defined tastes and clear preferences as to the software tools to be used*" (Otta and Travella 2010). Also, "digital natives" are defined as the current generation of teenagers who were born around the year 2000 (currently 15 years and older). This generation of learners has gone through several technology milestones since 2000, due to the emergence of the following life-changing technologies, including portable digital devices such as, iPod (2001), iTunes music store (2003), Facebook (2004), YouTube (2005), Google Docs (Cloud Computing Services 2006), smartphones (iPhone, 2007), and tablet devices (iPad 2010). These technologies have become an integral part of these digital natives' daily routines and have changed their lives in so many ways, including in retrieving information ubiquitously through mobile technologies, establishing or maintaining relationship through the social networking sites, access to free and reliable productivity tools, and relying on cloud computing applications to deliver services over the Internet (Wang et al. 2014: 637). The second group comprises people who were not born into the digitalized environment and who have later acquired the intention or will to use technological equipment, or who have experienced the need later in their lives to use technological equipment. They are often called

digital immigrants (Arabaci and Polat 2013). According to Waycott et al. digital natives use technology in five different areas, which are:

1. Personal interests and entertainment
2. Social communication
3. Daily use
4. Professional work
5. University/course work

View Point of Digital Native Students

When comparing modern and traditional students, it is apparent that the differences are enormous between these two groups. The main and important reason for these differences is the gradual digitalization of the modern age. The traditional students often access information with assistance from others and were limited by time, whereas, today’s students can find information themselves wherever on whenever they choose. Therefore, the characteristics of today’s students are different from the characteristics of traditional students. Prensky conducted a number of studies on this concept and called today’s students “digital native students” in the explanation given below. Today’s children socialize in different ways than their parents. When considering the amount of time children spend using technology until they graduate from university, the statistics are staggering. Children play video games for over 10,000 hours, they send and receive more than 200,000 emails and instant messages, they talk on the phone for more than 10,000 hours, they watch TV for more than 200,000 hours (mostly MTV), and over 500,000 advertisements are watched. At the most, children read books for only up to 5,000 hours over this period. This is why they are called today’s “digital native” students (Prensky 2001).

Kurt and et al. conducted a study titled, “*The Current State of Digitalization: Digital Native,*

Digital Immigrant and Digital Settler” in 2013. This study provided broad information on the characteristics of digital native students (Kurt et al. 2013). Students who are considered to be digital natives faced problems such as communication, interaction, and understanding with digital immigrant teachers especially in the classroom environment. These problems are due to various reasons and one reason could be that teachers and students are educated under different educational systems. In this respect, teachers to students, and students to teachers are criticized in negative ways, so that unexpected situations occur, which could go out of proportion because of reciprocal disagreement. In this situation, students who are digital natives and teachers who are digital immigrants can be given as an example of a traditional classroom. Digital natives are said to have different information and skills, which flows easily with IT technologies. Therefore, digital natives think that they have different preferences, choices and styles. Digital natives use technology in their learning activities and in the social communication environment. Digital natives accommodate new technologies easily and they are not afraid of breaking or using them incorrectly because they are fast learners. Digital natives know that technological tools can be restarted easily if problems arise, and they use technology without any fear. However, digital immigrants are particularly afraid of breaking technology. Digital natives see the Internet and other digital environments as real physical environments instead of virtual environments (Kurt et al. 2013). Yong and Gates (2014) conducted a study about digital native students where they asked students about their daily usage of technology. The answers to these questions are listed in Table 1 (Yong and Gates 2014).

Table 1: Students’ daily technological usage time - mean/average

	Male	Female	Native	Immigrant	Total
<i>Entertainment</i>					
Internet	3.61	3.84	3.88	2.62	3.77
Telephone	2.32	3.88	3.49	2.96	3.44
Talk/Message	2.49	2.62	2.65	1.92	2.58
Facebook	2.75	1.68	1.99	1.92	1.98
Online Game	2.76	2.71	2.85	1.42	2.72
Watching TV	2.37	3.25	3.01	2.92	3.00
<i>Listening Music</i>					
Academic	1.78	3.14	2.79	2.46	2.76
Homework	1.70	2.80	2.47	2.75	2.49

When the researchers look at the mean results above in Table 1, one can see that students spend their time mostly surfing on the Internet, followed by talking or messaging on their smartphones and then listening to music. Ransdell et al. conducted a study in 2010 with university students (35 males, 65 females from different age ranges), who were studying for a master's degree in a Health Sciences Faculty. Particular questions were asked and the findings revealed that digital native students found tools and online activities more useful and beneficial in comparison with hard copy materials for web-based courses (Ransdell et al. 2011). Modern students' who are considered to be digital natives have the following characteristics:

1. They use technology in every phase of their lives (Alex et al. 2011).
2. They are active in digital technologies and they are good technology users.
3. They prefer to search for the information they need via the Internet, search engines and social sharing/networking sites (Bilgic et al. 2011).
4. They can do more than one job with a single technological tool (Yildiz 2012).

The expectations of digital native students during their education can be listed as follows:

1. Learning via discovering and playing games.
2. Preferring graphics instead of text.
3. Searching/finding information quickly
4. Doing more than one job at the same time.
5. Wanting to read randomly instead of directly (Bilgic et al. 2011).

METHODOLOGY

Qualitative research methodology was used in this research study. This refers to a situated activity that has, and consists of a set of interpretive, material practices that make the world visible. These practices are used to transform the world into representations, conversations, interviews, recordings, field notes and memos of the self. This qualitative research is very important and is used to study in the natural setting in order to make sense (Denzin and Lincoln 2005). In this research, qualitative research is used to reveal how the concept of digital natives worked in the previous researches. Therefore, the researcher is determined to use some search engines and particular databases to reach previous studies.

During this process, the researcher used specific keyword such as, "digital native" to find previous studies on the concept of digital natives. These studies have been listed in Table 2. Data analysis has been done by reading each study one after the other. The researcher examined the studies' research methodology and how they work on digital native concept, with respect to the aim of the present research. The studies that were found are listed in Table 2. The list includes information about these studies such as, who conducted the detailed information about the studies.

RESULTS

The results of this study emphasized the fact that information and communication technologies are rapidly developing, and that the digital

Table 2: The sample of articles that were obtained in the literature review of the "digital native" concept

<i>Title of article</i>	<i>Author/s Name</i>	<i>Publishing year</i>
Digital Natives, Digital Immigrants, Part I.	Marc Prensky.	2001
Digital Natives, Digital Immigrants: An Analysis of Age and ICT Competency in Teacher Education.	Ruth Xiaoqing Guo, Teresa Dobson, Stephen Petrina.	2008
Digital Natives, Social Networks and the Future of Libraries.	Yasar Tonta.	2009
The Characteristics of Digital Natives' and Their Effects of on the Design of Online Environments.	Hatice Gokce Bilgic Duygu DUuman, S.Sadi Seferoglu.	2011
Are Digital Natives Really Natives or Digital Hybrids?	Asiye Kakirman Yildiz	2012
The current state of digitalization: Digital Native, Digital Immigrant and Digital Settler.	Adile Askim Kurt, Selim Gunuc, Mehmet Ersoy.	2013
Born Digital: Are They Really Digital Natives?	Su-Ting Yong, Peter Gates.	2014

divided exists between people. In order to reduce the incidences of digital divide among changing students' profiles, with an aim to provide active and permanent learning, all essential changes should be done in using the equipment, methods-techniques namely, the information and communication technology (ICT). The inability to properly use this new development is what leads to digital divide among people. People, who were born before this new development easily develop adaptation problems. These are the people and students who are called digital immigrants because they migrated from non-tech to technological development within the Internet age. Learning habits are also changed by this development, as students learn from more than one platform, they use the multimedia and multi-party platforms of the Internet, which provide alternatives to learning. Therefore, alternatives correspond to students' different characteristics and individual differences. Teaching and learning processes are supported by the Internet technology. Multi-tools and multi-platform are multi-methods, which are helpful for students in learning and in the actualization of their goals.

Extracurricular gadgets such as smartphones also enhance this new learning technology and increase learning. A new generation has emerged and today's modern students are more flexible, having different learning styles in collaboration with social interaction through which they can find information directly instead of embarking upon extensive researching to find it. As a result, they require direct information and communication technology to be active in the learning process in order to establish a modern educational-learning environment. Digital natives in their preferences are found to be able to bring significant contributions to the educational process. In addition, the giant strides taken to close the digital gap in the society and in educational environments in the country have increased the benefits, which the information and communication technologies are required to show.

In addition to learning platforms, the Internet technology is not only used for the learning. Most students use the Internet and new technological developments for playing computer based and online games, advertising, socialization and communication process. By this way, leisure activities and learning activities are also changed by the help of new technological developments. The most important one is that pro-

file of students is not same with traditional one. Students can learn new things by doing or reading on the Internet profile.

DISCUSSION

Rapid development of information technology has been mentioned in the research according to findings. Therefore, rapid development in education appears to be the solution to digital division among students, and a prerequisite needed for them to develop their profiles and to be adaptive to technology. The new developments lead to active learning platforms and permanent learning by using new technology and new methods-techniques with respect to technology (Guo et al. 2008). In the area of education, information technology plays an extremely important role in the acquisition of information and influence learning styles of students and learning styles are changing (Lai and Hong 2015). In addition, information technology should benefit education by supporting the teaching-learning process (Al Ghamdi et al. 2016; Yalin 2008). If various methods and multi-tools are utilized, permanent learning can be actualized for the learning needs of modern children. In order to achieve learning goals, differences between students should be taken into account. Learning output, which is aimed at, and is designed for students' services, should be suitable with students' characteristics in order to reach the output, which is aimed at.

In addition, students' profiles will be revealed in the research, in-class and in extracurricular gadgets such as, mobile phones, and Internet tools, which allows for access at anytime and anywhere. Also, access to enabling participation in the regulation of the teaching-learning environments, game-based learning methods, socializing and working as a team supporting activities, weight and importance should be given (Sahin 2009; Arabaci and Polat 2013; Tsai et al. 2015). In the same vein, Gardner reveals that learning beyond those that are mentioned can be realized. School programs should be developed that are capable of enhancing the mental capacities of children, and appropriate teaching methods should be applied. An individual's learning and thinking takes place in the physical and social context, according to the students in an authentic atmosphere of active learners who construct

their own understanding. Rather than being memorizing teachers, educators are obliged to realize that there are different ways to operate (Basaran 2004). The Pyramid of Active Learning had been designed by Colak et al. in 2013. This pyramid is arranged in the following order, “doing-looking-listening-repeating”, “listening-looking-repeating”, “looking”, “listening”, “reading”. Thus, this pyramid shows that people need to use more than one way to learn, and that the percentage of learning increases over multiple channels or ways. According to the research results obtained on the subject of digital native students, and in relation to reading, researching, thinking, interpreting and questioning, the concept of digital natives may be misleading and the disconnect between students’ inside-outside school technology experiences may be the result of the lack of sufficient teacher training concerning technology integration strategies (Wang et al. 2014: 637). Every new technology brings new challenges and problems as well (Cerrudo 2015). For students, challenges and problems may include being lazy and being involved in plagiarism.

CONCLUSION

The developments of Internet and computer technology have influenced every facet of human existence. A simple coffee house is an example of such changes regarding these developments. Customers who visit such a place ask for so many things, but oftentimes, the first question is, “*What is the password of wireless?*” then, other questions follow such as, “*where can I charge my phone or laptop?*” They ask for so many things relating to information and communication technology before they eventually get down to ordering their coffee. These requirements are really not in line with age groups. However, the recent generation who was born after 2000s is more familiar and willing to use this technology, because they were born within the novelties and innovation. Also, they have not experienced a lack of computer technology and Internet facilities. Therefore, they are digital natives who are ready to use the Internet and technology without any restraint. As already mentioned, they were born in the age of new millennium. A new millennium is generally called as Internet age, where everyone tries to do everything us-

ing the Internet. This way, newborn babies, children, students, adults and elders are all involved with the Internet.

This recent generation could be said to be very luckily, because they did not come across “the new”, but they are privileged to be part of the new. Thus, the present research tries to show how the previous researches had worked on digital natives with respect to education settings, power of technology in the recent generation, and coping strategies of previous generation with technology. The previous generation completed its homework using the encyclopedia, but today, students do their homework using Wikipedia. Also, using Internet and technology is like using any extension of the human body. If you use it, you will improve your extension such as exercising. Therefore, the recent generation of students uses technology whenever they start to use any form of appliance, and they learn the nature of such appliances. Therefore, it has been discovered that with respect to the educational setting, students follow every single issue over the Internet. They only use the Internet these days.

RECOMMENDATIONS

For further studies, researchers should focus on individual learning differences with respect to Internet technology, because students of this age are digital natives, they are not only familiar with technology and Internet, they live with technology and Internet. Therefore, cultural issues and individual differences should be taken into consideration for learning in a multi-platform environment. Researchers should focus on digital native students’ learning strategies via multimedia platforms. Also, the relationship between educational setting of countries and the use of technology should be examined. Therefore, researchers should determine particular online platforms to examine students’ learning process and compare with traditional platforms. Also, the importance of being a digital native and being international students should be examined at the same time. Because, being digital native also opens the door to international platforms. Thus, the students should be examined in the international education platform to show differences between digital immigrant students and digital natives students.

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