

Chapter 10

The Importance of Digital Fluency in Terms of Disruptive and Emerging Technologies

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ABSTRACT

This chapter primarily provides information about digital literacy, which enables us to make basic use of today's technologies. In parallel with today's technological developments, high-level digital literacy skills expected from individuals are addressed. Definitions of digital fluency and studies on this subject are examined. The concept of digital fluency is redefined by the authors. It is based on theoretical foundations that are needed by authors on why digital fluency is needed in educational life. The authors point to the lack of a workforce with high-level digital literacy capabilities around the world.

INTRODUCTION

The transition from industrial to information society accelerates with the effect of internet technology. The term 'information society' refers to a society that develops mainly due to scientific and technological development (Pinho and Lima, 2013). Today, knowledge is becoming more and more important. Societies that have knowledge and determine the right place, time and reason for using it are increasingly economically strengthened. Today, it is stated that mankind has more knowledge than ever had. Due to the developments in scientific research and Information and Communication Technologies (ICT) in the 21st century, the increase of knowledge in a doubling manner is considered as an "information explosion" (Sagasti, 2001). The validity of the information is becoming shorter and constantly updated (Odabaşı, 2000). It is important for individuals to constantly improve and renew their knowledge and skills as a precaution against the rapid obsolescence and out-of-date of knowledge. It is stated that the

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task of education is to prepare students for their own future, not for the past (OECD, 2018). According to the 2017 Future Human/Machine Association report, 85% of the occupations that will exist in 2030 have not yet been discovered (Institute for the Future for Dell Technologies, 2017). Teachers who prepare students for professions that are not yet known should be to equip their students with basic digital competencies. In this chapter, the main goal is to give the importance of digital fluency in terms of disruptive and emerging technologies.

BACKGROUND

Today's technological developments have made digital tools an indispensable element of our lives. Digital tools that radically change the way we communicate carry us into a future where machines communicate with each other. Digitization brings together individuals, cities, countries and continents to increase individual and social potential. It leads us to live in a more complex and more uncertain world (OECD, 2018). It is stated that specialization has become a special form of abstraction by detaching information from its context (Morin, 2003). Specialization isolates knowledge takes it out of context and makes a blackout between concrete events. We can adapt this to information technologies with the following example: Instead of expecting an accountant to use word processor and spreadsheet programs at a level as competent as expert software developers, he will be able to facilitate his work and solve complex problems in the context, time and appropriate purposes, when necessary. It makes more sense to expect it to use easily.

Each new technology makes it compulsory to have different skills and knowledge. For example; mobile devices must be used at a basic level when it is necessary to work with virtual reality technologies. If it is desired to develop original content with these technologies, three-dimensional modeling is among the skills that should be known. An individual who is an expert in three-dimensional modeling can transfer this knowledge for the use of different technologies and can also use it with, for example, three-dimensional printers. Computer programming and computational thinking transform society and encourage innovation, entrepreneurship, teamwork and creative thinking. Having only reading, writing and arithmetic skills does not seem sufficient for the individual in developing economies. Computer science determines the meaning of being a world citizen and being literate in the 21st century (Harel, 2016). In this context, the concept of digital literacy stands out as an important competence area.

MAIN FOCUS OF THE CHAPTER

Digital Literacy

Today, many institutions have started to provide services in electronic environment in order to speed up their service. The concept of knowledge-based labor has emerged instead of labor based on muscle strength through the transition from rural to urban and industrial society to information society. The concepts of robots, artificial intelligence, big data and the Internet of Things are gaining more and more space in our lives every day. This situation threatens the knowledge-based labor force that existing professions move towards automation (OECD, 2016). In the face of these uncertainties, digital competencies have taken place among the basic skills required by business life with the development of information

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