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CONTEMPORARY DIGITAL COMPETENCY REVIEW

Zoltán Nyikes*

Óbuda University, Doctoral School on Safety and Security Sciences
Budapest, Hungary

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ABSTRACT

According to the European Union's expectations, the Hungarian government set its goal to raise the digital competence level of the population as its importance can no longer be questioned. The opportunity to increase the users' level of digital competency, and the examination of the results achieved will make the training more effective. Digital knowledge must be increased so as to make digital goods equally accessible to everyone. Most of the workplaces and professions require a certain level of digital literacy, that is both employees and the companies need to know what level of digital skills are and will be required across the workforce.

KEYWORDS

digital competency, digital literacy, digital skills, safety awareness, industry 4.0

CLASSIFICATION

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*Corresponding author, η: nyikeszoli@gmail.com; +36 303351401;
Bécsi str. 96/B, Budapest, H – 1034, Hungary

INTRODUCTION

The Hungarian government, as every other developed country government realized the important problem which was generated in the last twenty years and accelerated, which is none other than the lack of digital competency in the Hungarian population. The Internet as a developing infrastructure causes economic operators also put more emphasis on digital development. In the last twenty years a lot of new industries were developed, which are specifically built on digitalization [1]. Let us think here about net stores, services built on determining digital geolocation, or even the whole online world. The possibilities given by ICT are more and more popular, even the "traditional" industry has gone through a huge digitalization revolution. So as we can see today's employee and the upgrowing generation need a new skill and that is digital competency [2].

DIGITAL WEALTH

It is a fundamental expectation of the members of an information or knowledge-based society that such a society should ensure them wealth. In this case, wealth means digital wealth, such as electronic commerce, banking, education or administration. However, it is the fundamental expectation of the society that its individual members access, use and prosper from digital wealth in order to improve their lives. Of course, all this should be achieved in a way that is safe for everyone. The individual is just as responsible for gaining access to the wealth ensured to them as the leadership of the society. Therefore, it cannot be said that the only responsibility of the State is to increase the digital capacity of the public. All efforts of the Government are in vain, if the individuals fail to do anything to achieve these goals, and to meet the aspirations of both the individual and the Government [3].

DIGITAL PROSPERITY

It is the individual's best interest to learn how to use those utilities which serve their welfare. Due to industrialization in the 20th century, people gained access to tramway networks, piped drinking water, sewerage, gas and landline telephone networks. These utilities have greatly improved social comfort. And then, at the end of the 20th century, the Internet appeared, as the largest public information network. Over the last half century the explosion of information technology development has resulted in the spread of information systems. A growing number of people have encountered computer systems in their everyday lives [4].

RETROSPECTION

Some of them first met with information technology applications at work or during their studies in the 1980's, which later had a further effect on their lives [5]. Some people only heard about the existence of such applications, but their lives were not affected directly by them. And then, in the 1990's, computers appeared in more and more workplaces, which meant that an increased number of people had direct contact with computer systems [6]. The scope of education has also widened in this field. The previously mentioned emergence of the World Wide Web helped the spread of the Internet [7]. Then the first smart phones became available at the beginning and in the middle of the 2000's, capable of internet access. Of course, this required the tremendous development of mobile phone service providers and cable TV operators [1]. IT solutions became available in all areas of life, changing them completely. It has developed to such extent, that if IT systems fail to work for some reasons (power supply problem, hardware/software problem, transmission path problem, or deliberate injury), it could stop the normal course of life. The fact that IT is present everywhere means that our lives have become easier. We are able to make arrangements, do the shopping or banking, keep in touch with family and friends in a faster, cheaper and easier way by using the Internet.

GENERATION GAP

As technology evolved, the different generations had to change and adapt as well. Today, the members of generations Y and Z are now called "digital natives". The presence of information technology is completely natural for them, as electricity and piped water for the members of generation X. Information technology, however, should not only make the lives of generations Y and Z easier, but also the lives of all generations, similarly to all the other utilities which make life more comfortable and of which all generations can take advantage. It is false to assume that now all children understand computers and cell phones. It is true at a certain level, but in most cases, they have no idea about security, and this can cause serious problems. Information technology or digital literacy is not an innate ability, but a skill that one must learn or acquire, since no one is born with the ability of using a spreadsheet or a word processing program. Yet, the misconception about digital natives still persists.

THE DIGITAL SKILLS OF YOUNG PEOPLE

According to a survey carried out by the British Computer Society, only 52 % of the employers think that their employees have the appropriate digital skills. Research made in Germany and Austria shows that while many people consider themselves digitally literate, the tests revealed that many of them were unable to perform even the most basic operations. It should be made clear that being able to use a Smartphone or to chat with friends on a social networking site is by no means the same as being digitally literate. It is a further problem that the concept of "digital literacy" is not defined; practically it can mean anything. A survey conducted by the Italian University, 42 % of university students are not aware of the dangers of free Wi-Fi, 40 %of them do not protect their phones by a pin-code, and 50 % of them download anything to their computers without checking the source. The International Computer and Information Literacy Study (ICILS) conducted a survey among 60 000 young people, which showed that 17 % of those participating in the survey failed to meet even the most basic requirements, and only 2 % had a high level of knowledge necessary for conscious facility sharing [8].

WHAT IS DIGITAL COMPETENCY?

The skill that the public, businesses and public administration's digital competence development can be done by increasing digital literacy and the digital division mitigation can be implemented so that it enables the users to identify and utilize for standing by the introduction of information and communication systems business opportunities, as well as the long-term falling behind in the digital ecosystem benefits of preference, that is e-inclusion [9].

ONE OF THE DEFINITIONS OF DIGITAL COMPETENCE

Antonio Calvani and collaborators defined the digital competence as "to explore and face new technological situations in a flexible way, to analyze, select and critically evaluate data and information, to exploit technological potentials in order to represent and solve problems and build shared and collaborative knowledge, while fostering awareness of one's own personal responsibilities and the respect of reciprocal rights/obligations." (Fig.1). This definition emphasizes the co-existence of three dimensions and their integration: 1) technological dimension; being able to explore and face problems and new, 2) technological contexts in a flexible way, and 3) cognitive dimension; being able to read, select, interpret and evaluate data and information taking into account their pertinence and reliability; ethical dimension: being able to interact with other individuals constructively and with a sense of responsibility towards oneself and towards others [10].

Abilities and skills

In addition to that digital competence, and the use of digital media confidently and critically at work, during leisure time and communication too. This ability of logical and critical thinking is connected to a high level of advanced information management and communication skills. The skills related to the use of ICT technology (ICT) in the most basic level of digital content, includes information search, evaluation, storage, creation, presentation and transmission, as well as online communication and social networking with the ability of participation [12].

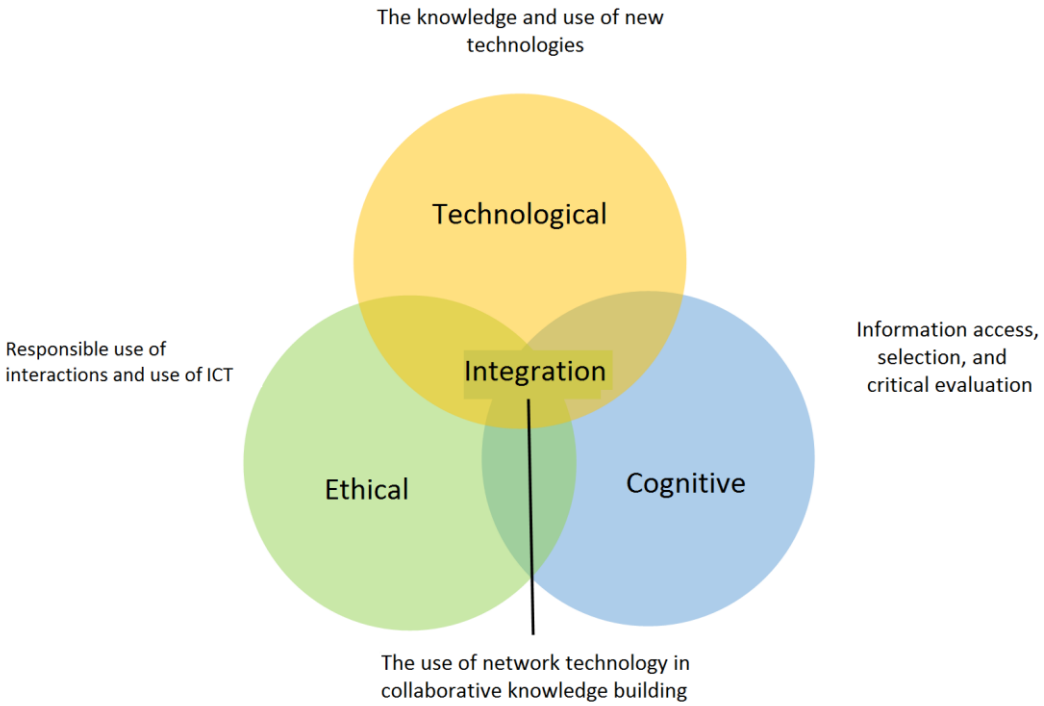

Figure 1. Dimensions of digital competency [10].

DIGITAL LITERACY

Digital literacy covers a several types of literacy, functional literacy is aligned under writing, reading, and counting. It includes comprehensive reading and the critical use of the information obtained. The aspects of this kind of literacy is the use of libraries, application skills of search strategies, the evaluation and its critical handling skills – including the mass media conveyed information – handling, that is the media literacy [12].

THE IMPORTANCE OF DIGITAL COMPETENCE

There is an increasing need for professionals capable of managing the used digital tools. The modern professional skills require knowledge of digital tools even for the already existing so called “traditional” professions, too. Then the employee can work effectively, if the handling of the machine does not present a challenge. The emergence of the above-mentioned digitization is a real challenge of contemporary 35 years and older age group among employees. The formerly learned already lapsed. The company does not train their own employees or does so in small numbers.

THE ECONOMIC IMPACT

The digital competence impact on GDP is remarkable, because digital literacy increase with 1 % leads to the increase of GDP to 0,123 %, which causes a surplus of 34,7 billion GDP. The ICT sector created info-communications and IT industry accounts for about 12 % of the Hungarian GDP, and the number of employed in the sector compared with most OECD countries is extremely high in our country [13].

SURVEYS RELATED TO DIGITAL COMPETENCE AND SECURITY

Further in the text I will present surveys. These surveys were conducted among Hungarian young people. The topics of the surveys are digital competence and security awareness. Surveys were made by various organizations. Surveys have been made recently (Fig. 2).

UNICEF HUNGARIAN COMMITTEE SURVEY

A non-representative survey conducted in the autumn of 2014 by the Hungarian Committee of UNICEFF gave the following results in which 1191 people, 10-19 years elementary and high school students were involved. 96 % of those surveyed own a mobile phone and 88% have profile on a social networking site. According to the survey, 50 % of children do not consider the Internet to be safe. 33 % of children have been a target of "harassment" on the Internet. In such cases, half the victim children of the harassment tried to defend their self, but only 10 % sought help [13].

THE EU KIDS ONLINE INTERNATIONAL SURVEY

With the support of the European Commission's Safer Internet Program, EU Kids Online their international series of studies conducted in 25 countries. According to the survey, the average Hungarian children begin to use the internet independently at the age of 9. Forecast predicts that this age will be reduced, most probably will stabilize at around 5-6 years of age. The 9-16 age group's 60 % uses the Internet on a daily basis, in contrast around 35 % are those children who use the internet a couple of times a week. Two thirds of this age group have their own profile on social networking sites. 37 % of the Hungarian 9-16 year olds encountered at least one hazardous activity on the online space. 26 % of the children have already got acquainted with others online. 16 % of the children has browsed dangerous content. Everyone in ten children have experience in browsing pornographic content. Nearly 70 % of the children interviewed had already the victim of online bullying. 30 % of the children met with sexual content, and 29 % of children were affected by sexual messages and actions. 9 % of the children was part of an "offline" meeting ending in a bad experience, which was preceded by online acquaintance [13].

THE NMHH SURVEY

The NMHH is a Hungarian acronym word means National Media and Infocommunications Authority. Three-quarters of the children between the age of 14 and 17 usually uses the internet without adults present. According to a survey conducted by the NMHH in 2013: 10 % of the Internet users living in the same household as pre-schoolers said that, the children under 6 living with them, use phone or tablet to use the internet without the help of adults. A small portion of those surveyed answered that his or her parents installed a screening program on the computer (18 %), or phone and tablet (11 %) which the child uses [14].

CONCLUSION

It is clear from the aforementioned that parents, educators and teachers awareness is a crucial aspect of this area. As long those taking part in the education of the children do not have the adequate digital knowledge as well as the intention and ability to pass them on, then it has

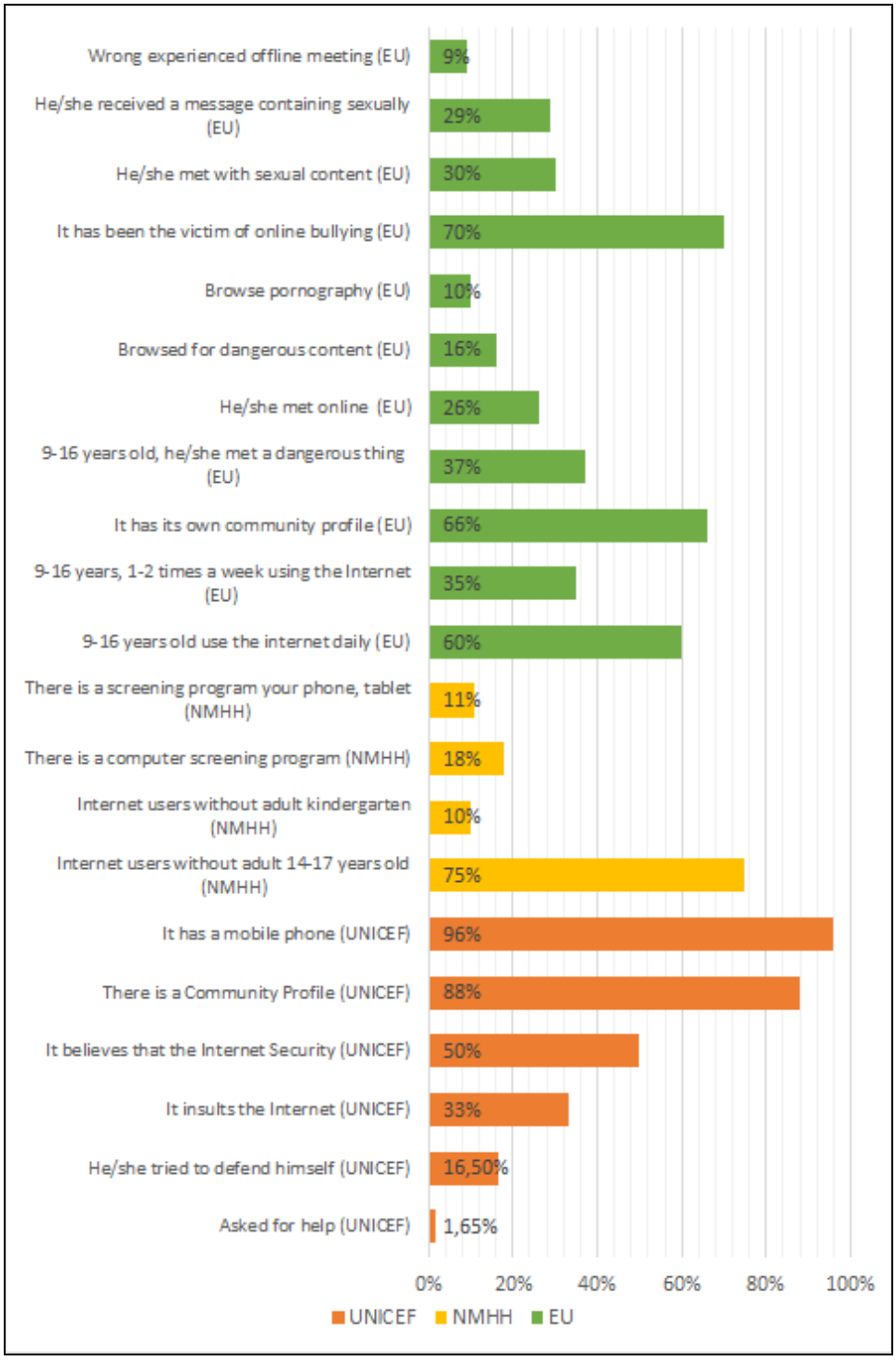

Figure 2. The diagram of the results of the different surveys.

serious consequences. Unfortunately, a very small proportion of the teachers possesses the necessary skills [14]. Many non-governmental organizations engaged in training, not only for kids but has also aimed to expand the knowledge of pedagogues. A misconception in relation to the older retired generation that above a certain age the necessary digital competence already cannot be acquired. The Lifelong Learning in Western European societies is a successful state-sponsored initiative and process where the positive impact is not only measurable on those concerned [15-19].

The importance of adults' digital competence, based on what is stated previously is not questionable. The government's praiseworthy strategies aims to increase children's digital

competence and within that digital literacy [20]. Unfortunately, they do not extend to the development of the population's general purpose digital competence and digital literacy [21]. If the companies and businesses would receive state-supported educational opportunities for increasing the general digital competence of the staff, then in that case the general digital culture of the Hungarian population would start a huge growth that would serve the nation's economic growth [22-24].

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