Digital Skills and New Media and Information Literacy in the Conditions of Digitization

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Abstract. Objectives of the article are: (1) to explore digital skills and media and information literacy, representing different aspects of the digital person who is responsible for how technology is used. (2) to present that these skills contribute to the development of identity, thinking and decision-making skills, and values. The article is based on several surveys: (1) "Cultural Universals in Academic Environment", (2) "Fundamental transformations in media and communication systems and its reflections in society", DN 05-11 2016/2019, team leader D. Peicheva; (3) "Digital Media Literacy in the context of "Knowledge Society": state and challenges" КП-06-Н25/4, team leader V. Milenkova. Students, who are respondents in surveys indicated that they use the Internet anywhere and feel confident in creating different digital content and on-line products. They are aware of the new dangers of emerging hybrid media wars and see the role of the digital media education and literacy in this direction.

Keywords: Digital skills · University education ·
New digital media and information literacy · Media ecosystem

1 Introduction

The internet and new technologies create prerequisites for being part of the global network, linked to the upgrading and dynamic flow of information, fast communication and easy access to various institutions. This related both to opportunities and to challenges, deepening inequalities and emerging problems. People of different ages, professions and settlements have different levels of technological literacy, and there are differences between them in terms of access, use and skills they have to work with digital devices and the Internet. Digital skills are an indicator for the development of society, the level of competence of the population, the readiness to accept new challenges in the context of social transformations.

Digital skills form an essential part of key competencies. There is a necessary minimum of digital skills that everyone must possess in order to be able to participate fully in society and in the work process. As the internet is part of our daily life, most people have access to the internet to take advantage of on-line services, training, networking and information opportunities.

The widespread use of digital technologies provides people with access to a large amount of information, which creates a need for a set of access, management, integration and evaluation skills.

In recent years, digital competence and skills have been of great interest in discussing what skills people need to have in the knowledge society [1].

The discussion on digital skills is a lesser or greater degree related policies at European and national level relating to expectations qualification of the personnel of the labor market and has its roots in economic competition in which new technology is viewed as an opportunity and approaches for solution [2, 3].

2   Theoretical Consideration

Digital competence is a concept describing the skills associated with knowledge and mastery of technology and application of these skills into professional and social life. In recent years, the use of other terms that have a similar meaning, such as computer skills, information and technology skills, media and information competence [4, 5].

In some cases, terms are narrower, e.g. "internet skills" or "computer skills" [6].

In other cases, the terms are more general, for example '21st Century literacy', where emphasis is placed on the social skills that develop through the knowledge of digital technologies [7].

The wide variety of concepts reflects the rapid development of technology as well as the various fields of interest related to their deployment in all areas of professional, economic and cultural life [8].

Digital technologies also provide impetus for the development of teaching and library research [9]. Approaches to digital skills and competences are dynamic due to emerging new technologies and their use in society [8, 6].

The relationship between competence and skills is defined in the OECD publication: "a competency is more than just knowledge and skills. It involves the ability to meet complex demands, by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context." [10]. In addition, digital competence involves not only digital skills, but also social and emotional skills related to the use and understanding of digital devices.

In this context, the European Commission Punie & Cabrera, defines digital competence as including the confident and critical use of information society technologies for work, leisure and communication. It based on the core ICT skills, that is, the use of computers for the extraction, evaluation, storage, production, presentation and exchange of information, as well as communication and participation in Internet collaboration networks [11].

Digital competences include:

– Competence assessment information and knowledge covering the skills needed to find digital content, make a critical assessment of it and use it for various purposes - in work or entertainment.
– Active Digital Competence - encompasses the skills for producing, validating, editing, enriching and updating digital content [12]

- Fair and legal digital citizenship, this is the legitimate way to use copyrighted content [13]
- Competence to use the right tools for human purposes: these are the technical skills to use different tools, e.g. mobile platforms and devices - to understand their potential and limitations. In addition to "computer skills", "ICT competences" "knowledge" and "digital media literacy" [14, 15]
- Digital competency is described as a confident, critical and creative use of ICT to achieve goals related to work, employability, training, recreation, inclusion and /or participation in society [12]
- Digital competences are seen as a crosscutting key competence enabling people to acquire other key competences such as learning and critical skills, cultural awareness etc. [9, 16]

  Digital competence includes the following areas: [12]

- Instrumental use of knowledge
- Additional skills and knowledge for communication and collaboration, information management, training and problem solving and meaningful participation
- Attitudes towards the use of strategic skills in intercultural, critical, creative, responsible and automated ways.
- Culture competence, which covers the understanding of digital culture and to be able to work in a digital environment

Digital competence is the ability to be in line with rapid ICT changes. Digital competence is related to the ability to recognize the necessary information and includes the skills, information to be found, evaluated and used effectively [17]. In summary, the concept of digital competence is an emerging and reinforcing concept related to technology development as well as to the political goals and expectations of citizenship in the knowledge society. It includes a variety of skills in several areas: media and communications, technology and computing, literacy and information science [14].

Digital competence consists of: (1) technical skills for using digital technologies; (2) the ability to use new technologies in a targeted way for work, learning and learning, and for everyday life as a whole in different directions; (3) ability to critically evaluate digital technologies; (4) motivation to participate in digital culture [17].

3   Methodology

The measurement of digital skills shows the connection between people's skills and their different kinds of engagement in online services and activities [18].

The measuring of digital skills in the research included both basic skills needed to use the internet and the skills that are required for understanding and using online content [18].

The research project "*Cultural Universals in Academic Environment*", conducted in 2017 with team leader V. Milenkova, used the self-assessment method to measure digital skills, applied to 120 students from social and humanities specialties in Southwest University (Bulgaria).

The other project aimed at studying digital literacy was the national survey "*Digital Media Literacy in the context of "Knowledge Society": state and challenges", № КП– 06- H25/4, 2018,* funded by National Science Fund – Bulgaria, with team leader Valentina Milenkova. The sample, which included 250 individuals representing the population, aged 18–65 from settlements across the country. The purpose of the study was to investigate the digital literacy of the population - what are the specific challenges people encounter when working with digital devices, what is the degree of real use of digital devices in work and leisure time.

A questionnaires (in both surveys) were used to collect data on digital skills; they included questions regarding the frequency of use of Internet and the social media as well as questions for self-assessment of knowledge and skills for working in a digital environment.

The questionnaires comprising variety of questions related to digital literacy and skills. The self-assessment method was used to implement a fuller instrumental approach to measuring skills, how students engage in various kinds of online and offline activities, and how these skills can subsequently impact on specific activities. The most frequently used indicators in measuring digital skills include skills for finding information, communicating, creating content, and ensuring safety.

The "Information" variable includes indicators related to surfing, searching and filtering information, storing and retrieving information. The variable refers to the share of students who have used the Internet in the last few months to find information on various topics; read or download online news, receive information from the Internet pages of public and private organizations.

The "Communication" variable involves indicators referring to various degrees of competence, interaction through technology, sharing information and content. It registers the share of people who have used the Internet to receive and send email messages; hold conversations through the Internet; participate in social networks; upload content, which is then shared.

The "Creating content" variable includes indicators pointing to activities such as: creating websites or blogs; preparing presentations, which included images, sound, video, graphs; copying and pasting information from one document to another. The variable indicates the share of people who have engaged in these activities during recent months.

The "Security" variable includes indicators related to familiarity with and application of security equipment and personal data protection, as well as personal security. In this connection, the formulated indicators refer to competencies in solving technical problems and identifying needs and technological solutions for installing new equipment; installing a new operation system or replacing an old one; Internet banking, holding a meeting through a website [18].

4 Results

We present the summarized results of the two studies.

The young adults (18–35 aged) in two surveys shared that they were using the internet everywhere: at home, "in the university", "on work", "in their leisure time".

This is an age group of people aged up to 40 years, which range places them under the category of "digital natives", meaning they have been actively socialized in various digital technologies since childhood. All the respondents registered in at least one social network, such as Facebook, Instagram, Snapchat, or Twitter.

The young adults shared they were almost constantly online on the Internet, more than 30 hours per week, and spent between 25 and 30 hours per week in the social networks.

They use various modifications to access the internet and to work online. These include a computer, laptop, tablet, or smartphone of their own; they also have access to computers in their offices or classrooms (when they study) as well as in the libraries. This is why they can be online regularly and for long periods.

Young adults *all indicated possessing operative skills to use the internet*, including the mobile Internet. These skills include: easily using the Internet, connecting to a Wi-Fi net; downloading applications for a mobile device; keeping track of, and updating, mobile applications; surfing on the Internet, downloading and uploading files; regulating the privacy settings for dealing with computer viruses and problems in the Internet; working with search engines, like Google and Bing.

The surveyed young people indicate they possessed systematic internet skills for quick orientation in a given website, moving from one webpage to another, or easily finding a website they had visited before.

The respondents assessed themselves as having information-related internet skills, such as: easily finding the information they need, easily examining search results and choosing which to check. They also read news and journals online, and were able to use different strategies for finding Information on the Internet.

The young adults were confident about their ability to judge whether a website was trustworthy or not; they could compare websites to decide which ones were truthful; they could evaluate the information found online.

Regarding "*communication internet skills*", the respondents declared they were confidently able to engage in online communication. They freely shared comments in blogs and social networks and they were convinced sharing online was risk-free. They were more confident about, and better able to work with Facebook and Messenger than with Twitter and YouTube – perhaps because Twitter is less popular in Bulgaria among online users, while YouTube mainly used to watch films and listen to music.

Creating content: regarding this skill, the surveyed students declared they could create and upload online content and could make changes in already created content. They stated they had little confidence they could personally create websites and preferred to turn to specialists for this. On the other hand, they knew how to share online video content, write comments on various contents, or create new products out of existing images, music, and video.

Can be said, that the most important differentiating criterion for digital literacy was the independent variable "age". From the point of view of age, it can be said that young people in Bulgarian conditions confirm the thesis of belonging to "digital natives", i.e. those born after 1980 have a predisposition to digitization, they have a higher digital literacy due to the greater density of their digital media environment. After 40 years, and especially after 50+, we have witnessed a progressive increase in the difficulties and challenges of using digital devices. Older generations most easily master computer

skills, especially if they are part of their work environment. The less people use computers in their professional activities, the lower their digital literacy. On the other hand, knowing the possibilities of the internet is becoming even more challenging for older generations. In this sense, we need to highlight the selectivity of the Internet and the betting of another discriminatory indicator of social inequality: Internet access.

5   Discussion and Conclusions

The students at Southwest University and generally young people (18–38) spend much time online in the internet and the social networks. They pointed out they used internet everywhere. They made a realistic assessment of their skills in creating content and their informational and formal skills. They know how to create and upload online content and make changes in already created content. They feel confident they can create different kinds of content and online products, including confidence in their skills regarding privacy and knowledge about security equipment and personal data protection; however, they find they have yet more to learn in this field. Overall, their self-assessment is high, which indicates their good knowledge of the digital environment.

The participation of population in the modern digital environment includes access to computers, electronic resources, and other information products and services. It should be taken into account that the acquiring of digital skills for work in an interactive environment improves their efficiency with respect to creatively and innovatively pursuing education activity. Achieving greater effectiveness in training and acquiring knowledge involves the successful use of information and communication technologies, based on acquired skills for seeking and finding useful information and resources, as well as the capacity to analyze and combine the obtained information, to share and discuss different ideas and viewpoints, which they may comment on with their fellow students and teachers.

In this connection, based on the results of the two survey presented, it may be said enabling adaptation to the challenges of digital society requires finding more effect pathways to engaging, encouraging, and motivating people to assimilate good theoretical and practical knowledge and skills for working with information and communication technologies. Hence, the efforts of people should generally be guided towards optimizing various ways of using ICT and interactive communication in their work; this may improve their capacity for critical thinking, effective communication and joint problem solving.

The results of the two surveys conducted indicate which specific skills should be the focus of greater effort in order to make the work of the teachers and the role of education more effective.

The results of the conducted content analysis of traditional and online media in frame of the research project "Fundamental changes in the media and communication ecosystem and their reflections in society" to the NSF support the placement of these skills as well at the center of the efforts of teachers to cope with the problems in the media ecosystem [19].

Engaging young people in short-term or long-term courses could also contribute to their acquirement of important knowledge and qualities related to digital skills. One must not underestimate the conducting of seminars and lecture courses, the possibility of access to online tutorials, electronic textbooks and other means of enhancing digital competence; through these means, it is possible to develop extensive skills for seeking, identifying and critically assessing and using information, and for young people's more independent and creative behavior in a digital environment. For the formation of digital culture, it is of great importance to saturate the work environment with computers, and to include the Internet in the specific responsibilities of those performing different activities. The results showed that the working environment as well as age are identified as factors of digital literacy of people. In this sense, complicating the responsibilities, the work and the nature of the obligations becomes a prerequisite for the formation of digital literacy of the population.

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