Digital Skills and Competences in Contemporary Society

Valentina Milenkova[1], *Boris Manov*[2]

[1] *South-West University*

66 Iv. Mihailov str., Blagoevgrad, Bulgaria

[2] *South-West University*

66 Iv. Mihailov str., Blagoevgrad, Bulgaria

ABSTRACT

This article aims to reveal the digitalization as an integral part of the society. Every process, phenomenon, community and relationship is related to digitalization and information technology. This analysis presents different forms of symbiosis between society and digitalization. The objectives of the paper are to show specific dimensions of the advent of digitization and the various technologies in the Bulgarian society. The main research questions are related to the performance of high-tech level of Bulgarian online environment and focus on the main features of online learning, which are identified as new educational activities. Methodology of this article is based on results obtained from an online survey conducted in March 2021 with people of different ages, occupations and education. The survey questionnaire included topics that directly relate to the digitalization of society, the use of various digital devices and the Internet, participation in online education and attitudes towards it. The results

Human Interaction & Emerging Technologies (IHIET-AI 2022)
Artificial Intelligence & Future Applications
https://openaccess.cms-conferences.org/#/publications/book/978-1-7923-8989-4

obtained are indicators that digitalization of society is a real fact as well as that online learning has a place in the Bulgarian educational system. This article focuses on peoples' reactions, their assessments and views on ongoing online learning and its formatting. The whole article and the survey carried out are under the national project "*Digital Media Literacy in the context of "Knowledge Society": state and challenges", №* КП–06–Н25/4, funded by National Science Fund – Bulgaria.

Keywords: Digitalization, Digital devises and skills, Online education, Digital literacy, Distance education

INTRODUCTION

Digitalization is an integral part of society. Every process, phenomenon, community and relationship is related to digitalization and information technology. The life of a modern person is a long series of active penetration of digital devices in our way of life, in our professional responsibilities and activities, in our free time and personal contacts. This strong digital saturation today is constantly recognized and modern person is clearly aware of his dependence on information technology, without which it would be difficult to do the job, to contact people and institutions that reflect different levels of social interaction, and to organize free time and entertainment. From this point of view, it is necessary to show the different forms of symbiosis between society and digitalization, as well as to emphasize the possible manifestations of this symbiosis.

The objectives of this paper are to show specific dimensions of the advent of digitization and the various technologies in the Bulgarian society and in particular:
- What digital devices do individuals have and how do they use them?
- How they get involved in the Internet and what is their participation in the various social networks?
- What is the quality of online learning as one of the examples of digital activity in social terms?
- What is the technological level of the online environment?

The main research questions are related to the performance of high-tech level of Bulgarian online environment and focus on the main features of online learning, which is a new educational activity for Bulgarian schools and universities and its basic actors gradually become active users of its.

The basic implication of the article is that in the Bulgarian context serious steps have been taken regarding the restructuring of modern university education in digital. At the same time, it should be emphasized that the digital education is a continuous process that follows the development of technology and in this sense there is a constant renewal and continuation.

MATERIALS AND METHODS

The empirical basis of this article is based on results obtained from an online survey conducted in March 2021 with people of different ages, occupations and education. The survey questionnaire included topics that directly relate to the digitalization of society, the use of various digital devices and the Internet, participation in online education and attitudes towards it.

The survey included 1018 people, divided into the various categories:

Age

- 18 - 29 years: 37.9%
- 30 - 39 years: 24.6%
- 40 - 49 years: 18.7%
- 50 - 59 years: 8.4%
- 60+ years: 10.4%

It is noteworthy that the most active age group in the sample are people under 40, who are digitally the most predisposed to the acquisition of digital skills and digital culture people. This is the generation of individuals who, as students or as parents of young children, are actively involved in various forms of interaction with information technology. They directly show and present their specific connection with the computer world of the "digital natives" generation (Erstad, 2010).

Educational level was the other important feature of the sample including:

- Persons with education "up to secondary" which are: 1.4%
- Secondary school graduates make up: 35.6%
- Higher education graduates are: 41.1%
- The persons with scientific degree are: 22.0%

It is noted that most are highly educated respondents. This is because digital skills also require a specific general culture and educational skills. Although there are many examples of people who have digital skills without being accompanied by higher education. In general, digital differences reproduce the divisions existing in society by age, ethnicity, profession, reinforcing and deepening them (van Deursen, van Dijk, 2009).

The sample included: Men: 28.7% and Women: 71.3%. In general, this distribution shows the priority of women as the most socially active part of Bulgarian society.

RESULTS

The results presented in the paper are indicative of both the objective characteristics of different quantitative and qualitative conditions, opinions, assessments and views, which the respondents share. One of the important things in terms of digitization is the availability of digital devices that have become the main intermediary for the activity in the Internet, social networks and media. In the survey, most of the respondents possess:

- Mobile phone: 95.1% of the persons;
- Laptop: 90.2%
- Tablet: 42.9%
- Desktop computer: 39.2%

- Other: 13.9%

Many respondents have more than one digital device, which is an indicator of the high degree of digitalization of the population. However, the question can be immediately raised here that although digital devices have already become cheaper, they represent a financial challenge for a large part of the Bulgarian population, given the high unemployment rate and the large share of people with incomes of the order of average salary for the country. In addition, it should be emphasized that in order for digital devices to be truly active, it is necessary to maintain an Internet service (connection), either as a plan included with the respective digital device, or as a stand-alone service purchased by the mobile operator. In this context, it can be said that digitalization reproduces existing divisions and inequalities by taking them to the next level. Maintaining the Internet connection proves to be of great importance for the use of the achievements of digitalization. In addition, depending on the positioning of the Internet connection used, summaries can be made about the extent of its use, as well as the activity of the network users themselves.

To the question "Where do you mainly use the Internet?" the answers received are as follows*:*

- At work: 4.1%
- At home: 16.1%
- Everywhere (I have mobile internet): 79.8%.

It is noticed that over 2/3 of the respondents have mobile internet, which allows them to use it everywhere and to be as digital as possible, as they have access to the network at any time and in any place. In practice, these distributions are indicative of the fact that a large part of the Bulgarian population, mainly young people are connected at any time with their peers and colleagues at university or at work. What raises questions is that respondents who use the Internet at work have a relatively small share - only 4%. This means that most likely the nature of the activities performed does not require a network connection, or that there is no internet in the respective workplace. This brings us once again to the topic of the divisions that digitalization reproduces and creates, and that divisions deepen personal backwardness or become a source of progress. Therefore, when talking about digitalization, we also take into account the extent to which people can use the Internet and its possibilities.

Another important topic related to digitalization is the expansion of the level of digital literacy. This is achieved both through personal training and through various courses that are attended. The level at which online learning takes place in an educational context is also important. The last two years - 2020 and 2021 with small breaks were a time when classes in secondary and higher schools in our country took place in a digital environment. In fact, this is the topic that was the basis of the online discussions with students: about the quality of distance learning and its effectiveness. This topic is also present in the online survey because the majority of the Bulgarian population has a direct or indirect connection with online learning: as a student, as a parent, as a teacher in secondary or higher education or as a relative of any of these categories. In this sense, people with a stronger or weaker connection to online learning are in fact quite a high proportion. Therefore, we have included a series of questions related to online learning and its quality for several reasons.

- To understand what is the opinion about online learning of the majority of the Bulgarian population;
- To discuss the quality of online learning and the level of participation of young people in it.

Respondents were asked if the ongoing online training was of high quality. In addition to the positive and negative answers, the scale included the neutral answer "I have no opinion" in order to distinguish those respondents who, despite the wide range of related to online learning, are irrelevant and distanced from it for various reasons. According to the persons who answered, the distributions are as follows:

- 37.9% gave a positive answer, that online training was of high quality;
- 43.2% said “No”; 18,9 have “no opinion”

These results show at least three trends:

- People who think that online learning is not of high quality are a little more than the respondents who gave a positive answer. And this is a problem for the level of education, learning and for the effectiveness of teaching and online activities.
- The difference between the positive and negative answer regarding the quality of online learning is not very big - it is 5.3%.
- Definitely need to make more effort to improve online learning and its possibilities.

In fact, the quality of education is a complex variable that has different components and depends on different things: teacher training, students' interest, technical security of the environment. So, it is necessary to have a broader understanding, because both the subjective and objective aspects must be emphasized. That is why we sought the assessment of the statement: “teachers cope with the requirements of online learning:

- Positively answered: 67.6% of the respondents;
- 15.9% of the persons gave a negative answer;
- 16.5% had no opinion.

These answers show that teachers are definitely assessed by the respondents as having the necessary digital skills and training to be able to conduct online training. This is particularly important because teachers are crucial figures in the overall distance learning and they depend both on what and how to teach, as well as how they assess their students. In fact, positive responses include the element of teaching and assessment, recreating the overall picture of the learning digital process (Sefton-Green, Nixon, Erstad, 2009).

The students themselves are the other important component of online learning - whether they manage to meet the requirements, whether they regularly prepare for online classes, whether they cope with the tasks (Milenkova, Keranova, Peicheva, 2020). The distributions in the answers to the question: “Do the learners cope with the online content?”, are:

- 56.8% of the respondents answered positively;
- 26.5% answered in the negative;
- 16.7% of the surveyed persons do not have an opinion.

In addition to this package of questions, another emphasis was added: learners have no difficulty with the online environment:

- 49.9% of the respondents answered positively;
- 30.3% of the persons give a negative answer;
- 19.8% have no opinion.

This emphasis was important to highlight the state of learners' digital skills and how these digital skills are applied in the learning process itself. It turns out that pupils and students are actually coping with the challenges of distance learning. As already mentioned, online learning and its implementation depend to a very large extent on the technological state of the environment: whether teachers and students have the necessary digital devices; what is the state of the internet connection for both types of participants in distance learning; whether the digital platform used has the potential to take the necessary load when a hundred or more students enter the system, as is the case with high flows at some of the universities or schools; whether in cases where there are any problems with the platform or with its maintenance, these problems are fixed quickly? All the various aspects mentioned relate to the quality of the technological environment and 52.3% of repondents agree with this statement. It is definitely noticeable that the technological environment is evaluated positively. More than half of the respondents giving a positive answer, are indicators of a good assessment, as well as of the presence of good conditions for digitalization.

And in this context, the next logical point was: „Is online learning effective?"

- 39.9% answered positively;
- 41.7% gave a negative answer; 18.5% had no opinion.

It is noted that the difference between positive and negative answers is 1.8%, which means that the total number of people who evaluate the effectiveness of online learning in the two opposite poles is balanced. However, it should be emphasized that about 40% of respondents who agree that digital learning is effective are less than half, and this is not a very good sign. It should also be added that since the sample includes people from all over the country, there are regions where distance learning is really not very effective and there is no real learning process. Furthermore, for a this new form of learning, such as online learning, 40% approval is a relatively good result, especially considering that, most parents do share their dissatisfaction with the distance education, saying that through online learning, in reality, their children do not study or study insufficiently.

In order to trace what in particular in digital learning is unacceptable and creates problems for learners, the questionnaire listed various shortcomings of online learning that respondents had to assess; respectively, we present the obtained results.

- No live contact in training: 87%
- Lack of communication between students: 74.6%
- Insufficiently good technological environment: 29.1%
- Insufficiently trained teachers - 26.1%
- Learners face difficulties - 38.8%
- The textbooks are adapted for face-to-face training - 33.6%
- Online learning is expensive - 3.7%.

In these responses, we note that the main disadvantage of online learning is the lack of communication with teachers: "live contact in learning" and "communication between learners themselves". It turns out that the social contacts that are established during the training both with the teachers and between the students are of great importance and in the results of the online survey they mark quite high values. In one case, the percentages reach close to 90%, and in the other case close to 80%. This shows the need for communication of networking, of living bond that creates the attendance training.

Next, when assessing the shortcomings of digital learning, "the difficulties that learners faced" come to the fore. Although the share of persons is less than half of the sample - 38.8%, this answer is indicative that often during the training ambiguities arise, which for some of the learners need to be removed and the problems to be clarified. It turns out that the online environment is not conducive enough to seek additional explanations, or the other assumption is that most likely students can not focus on and understand the learning content. Obviously, some young people also have this problem - the inability to concentrate in front of the computer.

For some of the learners, various distractions arise, they do not understand the lesson at the moment, they do not want additional explanations because they think it is inconvenient to ask in front of everyone and so the gaps accumulate and these gaps later become ignorant. In many of the disciplines, knowledge is a continuum and there is continuity and connection; i.e., when there are misunderstandings or ambiguities and they are not filled, new ambiguities arise, which creates a long chain of learning problems. In the in person training, perhaps the environment itself creates more conditions and opportunities to ask after class or to seek contact with the teacher; although in person training students with poor grades, not understanding the study material or not making the necessary learning efforts were noticed.

In this regard, another component of in person training should be noted - "textbooks are adapted for face-to-face training" (33.6%), manuals also involve working in class. In general, the history of education has been related to the face-to-face forms and this tradition cannot be changed in a short time. Students, parents and teachers have such an attitude. Respectively, the percentage of people who indicated this answer is 1/3 of all persons.

"Insufficiently good technological environment" is cited as a difficulty in online learning of almost 1/3 of the sample - 29.1%. This answer is indicative that not everywhere - at home, children have identical technological possibilities to be on the Internet and maintain a good connection. The issue of the divisions caused by digitalization has already been raised; and it will continue to attract attention.

"Insufficiently trained teachers" as a disadvantage of online learning is indicated by 26.1% of respondents. Undoubtedly, the lack of preparation of teachers to work in a digital environment becomes an unfavorable factor in conducting online classes.
One of the things that is not so important for the respondents is the "cost of digital learning". This answer "Online learning is expensive" is given by only 3.7% of people in the survey.

Each of these factors undoubtedly affects the reduction of the attractiveness of online learning. These factors are of different essence - some of them are related to the nature of training, others related to its participants, others affect the technological characteristics of the environment. Taken together, these factors are indeed multifaceted, but they are important because they show in what aspect the active work of various educational institutions, the non-governmental sector, as well as at the management level - regional and national - should be deepened. It is obvious that online learning has established itself as a learning reality and will continue to have its significance, so it is important to improve it with a view to improving it in the future.

Therefore, as a deepening of the topic of the effectiveness of distance learning, the issue of the nature of the digital forms used was included. There is an understanding that just as in the classroom in face-to-face learning, there is a need to diversify the

forms of teaching, so in online learning you need to think about innovative approaches, attracting attention, creating interactivity. Respondents were offered several different forms through which such diversity can be achieved and whether they are present in their online learning.

- Short-term videos for better perception (Tiktok, Instagram). They were mentioned by 14.5% of the persons, as finding a place in the online education process;
- Standard videos with explanatory content (YouTube, Facebook). This form was indicated as used in the training by 46.4% of the persons;
- Video lessons - indicated by 68.6% of the respondents;
- Other forms - 39.7%.

The presented set of different forms shows that in the current online learning teachers from secondary and higher schools in our country are trying to create a diverse environment, to look for different opportunities to attract attention, to make learning more interactive and more understanding as content. In this context, two important circumstances can be highlighted. The fact that the majority of Bulgarian teachers in secondary and higher education in a short period of time had to acquire digital skills and be adequate to the online environment.

In March 2020 (the beginning of the Covid-19 pandemic), the percentage of those who could use digital platforms, create classrooms, create video tutorials, share the screen, etc., was small. Gradually, teachers became more confident as they expanded their digital skills by learning "step by step" and gradually their knowledge acquired relevant dimensions of the requirements of time and learners. The second important circumstance, which must also be taken into account, is related to the age of the teachers, both in the secondary and in the higher schools in Bulgarian conditions. The high percentage of adult educators means difficulties with the acquisition of digital skills, which are of great importance in the online process. In this sense, the rejuvenation of the teaching staff or the setting of requirements for digital literacy above the basic level, which should be linked to the remuneration of teachers, is a milestone in the work and a criterion for qualitative digital teaching skills and training.

CONCLUSIONS

Based on the results obtained from the survey, several conclusions can be drawn. Digitalization has a place in Bulgarian society and it is at a good level. The online learning is assessed relatively positively, it is perceived as a good step and solution and people evaluate it as a main element of the educational space. One of the advantages of online learning is its flexibility. Instead of training taking place in a fixed place and time, with the help of high technology it can take place anywhere and at any time. Online education uses a variety of forms of expression - video, audio, text, tests, etc., which in turn could lead to higher engagement and efficiency in understanding, remembering and reflecting information, as it helps participants with different learning styles. The consequences of the change in the way of learning in school and university education can be found both in the psychological and emotional state of the students and in the quality of the education they will receive

A main conclusion of this article is that various improvements need to be made to make the online education activity more effective. The most important thing to think about is how to overcome the shortcomings of online learning and how to deal with them for people of different ages and statuses.

ACKNOWLEDGMENTS

The article has been developed in the framework of the research project "Digital Media Literacy in the context of "Knowledge Society": state and challenges" *№* КП–06–H25/4, funded by National Science Fund – Bulgaria.

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