Assessing digital skills in tertiary students

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Abstract. The article is devoted to the assessment of digital skills of students of higher education institutions. As part of the study, it was revealed that during the period of digital transformation, the availability of digital skills among students of higher educational institutions is an urgent task for the state. The work analyzed digital competencies in working with applied programs, equipment and communication in a digital environment and working with digital information, as a result of which, it was revealed that some students lack even minimal digital skills, while there is a digital inequality between students. living in urban and rural areas. At the end of the study, recommendations were made to improve digital skills in higher education students through the development of appropriate programs and activities.

Keywords: Digital Competencies, Students, Digital Skills, Digital Competencies.

1 Introduction

Knowledge, abilities and skills among students of higher educational institutions begin to form long before entering a higher educational institution, the only thing they can be fragmented and be associated with all spheres of human life. In higher educational institutions, knowledge, skills and abilities are focused on a specific field of activity, namely, the direction in which the student is studying at the university. Of course, a student during this period can expand his competencies in other areas of activity that will allow him to most successfully master the profession or, on the contrary, acquire professional competencies during his studies. However, in recent years, more and more attention has been paid to the digital skills of students of higher educational institutions, since the transition to digital technologies requires from future specialists' full knowledge of not only their professional field, but also additional digital competencies that will allow them to integrate individual technological processes into digital realm. In this regard, it seems relevant to conduct a study in the field of assessing the digital skills of students of higher educational institutions [1-2].

We need to understand that a student entering a higher education institution, therefore, has minimal digital skills, but there are still open questions related to whether

university students have specific digital skills or not. Of course, the presence of specific digital skills may be relevant for students of educational programs related to information and communication technologies, however, the study will present the data of all students, regardless of educational programs and the presence or absence of digital skills. It should be noted that such a study is being updated during a global pandemic, when students were transferred to e-learning and distance learning, and the presence or absence of appropriate digital skills allows them to independently master the necessary educational material. It is also interesting to consider students in urban and rural areas, in order to assess the inequality between students living in different territories of the Russian Federation.

2 Materials and methods

The aim of this study is to assess the digital skills of university students. In the work, the following tasks were formed:

- Assess digital skills among university students;
- Suggest activities to improve digital competencies among students of higher education institutions.

The study used general scientific methods and approaches, and the information base was based on analytical reports on digital education in Russia.

3 Results

For the analysis, it is advisable to consider the simplest digital skills of students of higher educational institutions, which they need almost every day for the successful mastering of educational programs and obtaining the necessary professional knowledge, abilities and skills.

Consider the digital skills of working with applied programs among university students (Figure 1) [3].

It can be seen from the presented figure that not all students have digital skills for working with a text editor, while a quarter of students living in rural areas do not have this competence. If we consider working with spreadsheets and the creation of electronic presentations, then on average 62% and 40% of students possess these digital competencies, respectively, while in rural areas these indicators are 15% lower than in urban areas. Only half of the students can use photo, video and audio editing programs, but the digital divide between urban and rural areas persists. Only 4% of students can write software in a programming language, about 5% in urban areas and 3% in rural areas.

Thus, this situation indicates that some of the students of higher educational institutions do not have even the simplest digital skills that they need to use in their daily learning activities.

Further, it seems relevant to consider digital skills in the field of working with equipment (Figure 2) [3].

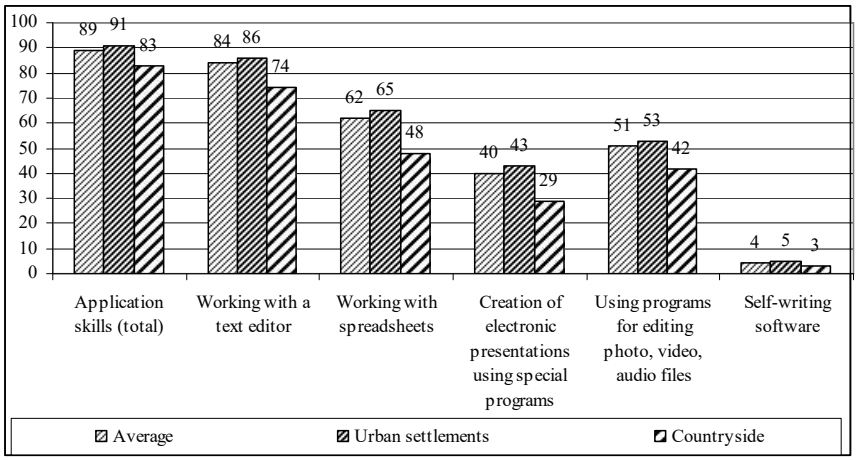

Fig. 1. Digital skills of working with applied programs among students of higher education institutions by place of residence in 2017, as a percentage.

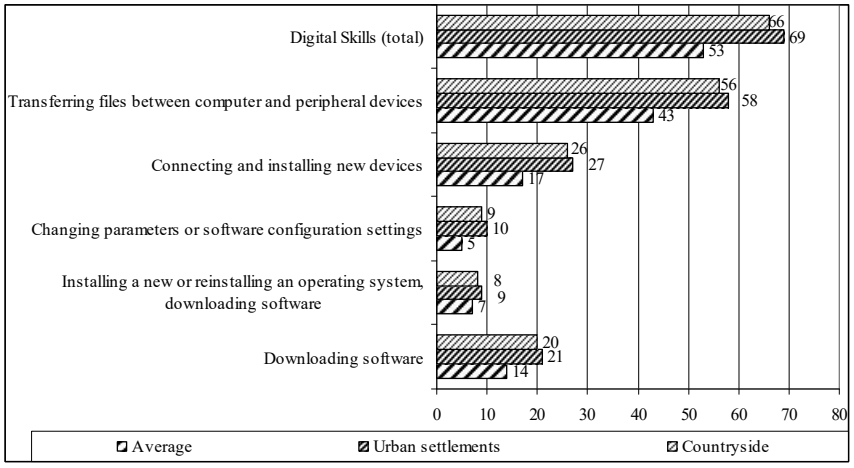

Fig. 2. Digital skills of working with equipment among students of higher educational institutions by place of residence in 2017, as a percentage.

The figure shows that slightly more than half of the students have the skills to transfer files between computers and a peripheral device, while in rural areas 15% fewer students have this competence. Connecting and installing new devices, and downloading software are only 25% and 20%, respectively, there is also a digital

divide between students living in urban and rural areas. About 10% of students have skills in changing parameters or adjusting the software configuration and installing a new or reinstalling an operating system, while in rural areas their number is almost two times less than in urban areas.

Consider digital communication skills in a digital environment and working with digital information (Figure 3) [3].

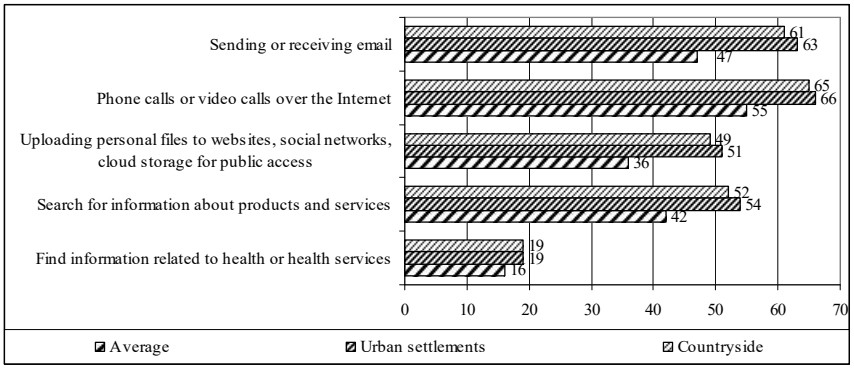

Fig. 3. Digital communication skills in a digital environment and working with digital information among students of higher education institutions at the place of residence in 2017, as a percentage.

The figure shows that only 64% and 61% can make phone calls and video conversations via the Internet and send or receive e-mail, respectively, while in rural areas this percentage is about 55% and 47%, respectively. Only 49% and 52% can upload files to websites and social pages, as well as search for information about goods and services, while in rural areas this figure is 37% and 42%, respectively. Only 19% can search for information related to health or health services in urban areas, and about 16% in rural areas.

Thus, the analysis showed that students do not have even the minimum digital competencies that are required to ensure high-quality educational activities, moreover, in rural areas these indicators are significantly lower than in urban areas. Of course, in order to solve these problems and increase the level of digital competence, it is necessary to propose activities that will allow students of higher educational institutions to acquire digital competencies for their further use in professional activities.

4 Discussion

In the opinion of the researchers, in order to improve the digital competencies of students of higher educational institutions, it is necessary to adopt the state program "Digital Education", within the framework of which the following activities should be implemented [4-9]:

- Creation of electronic educational sites;
- Technical and technological equipping of universities with digital equipment, at the same time, not only personal computers, but also various equipment creating digital devices, digital programs and platforms;
- Introduction into the educational process of additional disciplines related to teaching work on the simplest programs, the use of digital equipment in educational and professional activities, the development of skills for working on the Internet, the use of various electronic educational sites, etc.;
- Development of corporate state universities to train schoolchildren, students and working youth in the basics of digital literacy, work on various devices and platforms, etc.;
- Creation of electronic platforms for the exchange of experience in the field of digital transformation of the spheres of human activity and life;
- Creation of platforms for exchange of experience between professional communities and students of higher educational institutions.

In the opinion of the researchers, in order to effectively integrate digital technologies into the spheres of activity and industry, the state should create conditions for students of higher educational institutions to acquire additional digital competencies in all areas. Of course, such activities should be developed by higher educational institutions and large companies that are interested in creating new products and technologies in their field of activity.

5 Conclusion

Thus, the analysis showed that some of the students of higher educational institutions do not have digital competencies in the field of working with applied programs, equipment, communication in a digital environment and working with digital information. In the work, it was revealed that such a situation will negatively affect the digital development of spheres of activity and industries. In this regard, at the end of the study, activities were proposed aimed at increasing digital skills among university students.

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