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Assessment of the use of digital technologies by students of higher education institutions

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Abstract. The article assesses the use of digital technologies by students of higher educational institutions. As part of the study, we analyzed the indicators on the use of personal computers by students in different places, the use of computers with Internet access and the frequency of use of personal computers. It was found that, basically, students daily use personal computers with Internet access in places of residence, but this indicator in urban areas is higher than in rural areas. To eliminate the digital divide, it was proposed to introduce satellite Internet, which will increase the number of students living in rural areas using the Internet, as well as other areas of activity and industries located in rural areas or in remote areas will be provided with the Internet.

1. Introduction

The use of modern innovative and digital technologies in training specialists of different levels is a necessary need during the transition of the economy to an innovative and digital development path. To date, digital technologies have penetrated almost all spheres of human activity and life, without which it is impossible to imagine the conduct of certain processes, the functioning and development of urban and industrial infrastructure, the work of public and private organizations. The use of digital technologies in the educational environment is also a necessary need, since various personal computers, programs, electronic educational technologies, information and cognitive platforms and electronic libraries impart new knowledge, skills and abilities to students, as a result of which, upon graduation from higher educational institutions, graduates acquire the necessary competence in their field of activity [1-2].

Modern educational activities cannot be imagined without the daily use of a personal computer and computer technologies, however, it should be noted that the full use of these technologies is hampered by the absence of the Internet in certain territories. In this regard, we consider it necessary to conduct a study in which to consider the level of use of personal computers by students of higher educational institutions, including those with access to the Internet, to assess how much urban students lag behind students living in rural areas and to reveal how often students use personal computers, including those with Internet access. Such a study becomes relevant during a long-term pandemic, which forced universities to transfer training to electronic format. It should be understood that during a pandemic, we



could talk about almost 100% use of personal computers by students, including those with Internet access, while all this was done daily from home personal computers [3-4].

2. Materials and methods

The study set a goal related to the assessment of the use of digital technologies by students of higher education institutions. As part of the work, the following tasks were set:

- Assess the places where students use personal computers with Internet access, as well as establish the frequency of their use;
- Propose measures for equipping rural areas with Internet.

The research was based on the use of a statistical report, which provided analytical data. General scientific methods and approaches that are used to conduct this kind of research were used as methods and approaches.

3. Results

The analysis should be based on the assessment of the level of use of personal computers in urban and rural areas and in the places of its use. That is, the indicated indicator will reflect where students of higher educational institutions use personal computers, as well as the disproportion between students in urban and rural areas (figure 1) [5].

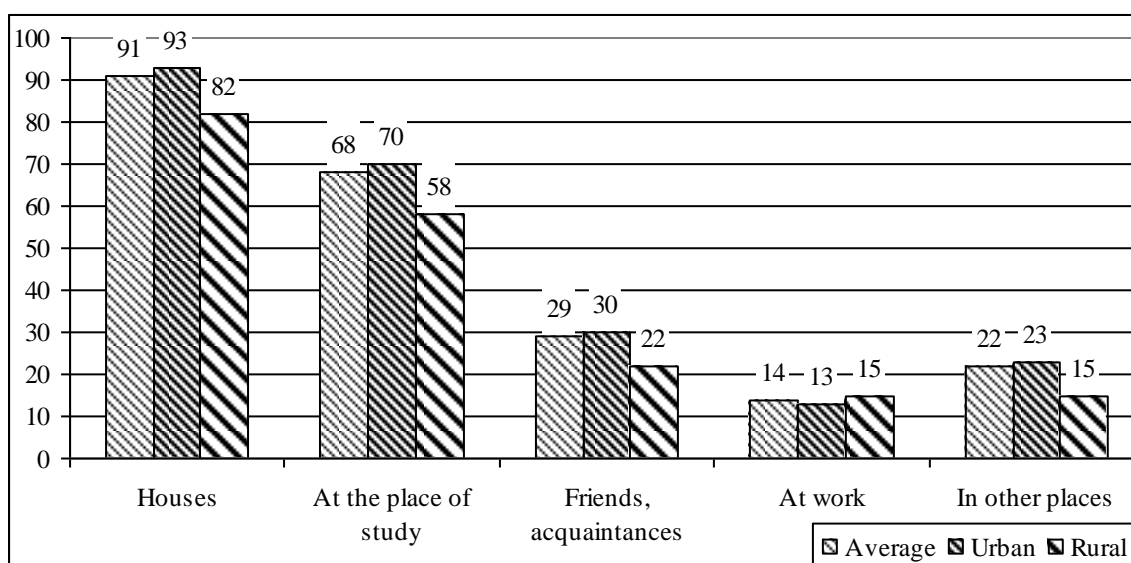


Figure 1. Places of use of personal computers by students of higher education institutions in 2017, percent.

The figure shows that, on average, 91% of university students use computers at home, while in urban areas it is 11% more than in rural areas, it is also worth noting that, on average, and the rate of use of personal computers at home is quite high. At the place of study, about 68% use personal computers, while in urban areas this figure is 12% higher than in rural areas. In addition, about a quarter of students use personal computers with friends and acquaintances and in other places, while the disproportion between urban and rural areas remains. At work, approximately every seventh student uses personal computers, while in rural areas it is 2% more than in urban areas.

It should be noted that the presented graph indicates a high share of the use of personal computers at home by students of higher educational institutions.

Next, we will consider the places of access to the Internet from personal computers by students in urban and rural areas (figure 2) [5].

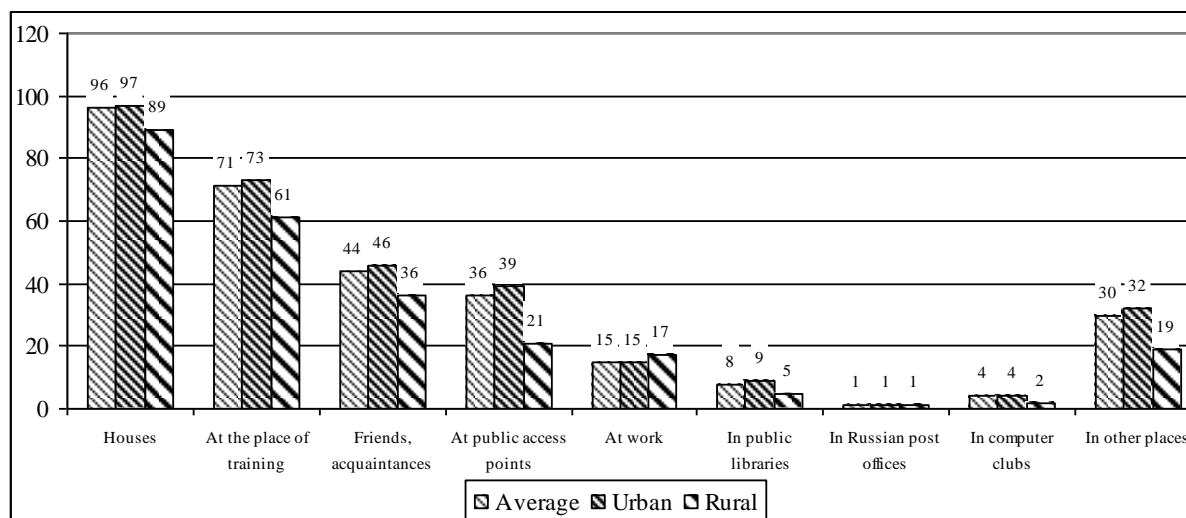


Figure 2. Places of use of personal computers with the Internet by students of higher education institutions in 2017, percent.

The figure shows that on average 96% of students access the Internet from home, while in urban areas this figure is 97%, and in rural areas about 89%. It should be noted that a fairly high rate of access from personal computers to the Internet is observed at the place of study and reaches an average of 71%. For the rest of the categories, it can be seen that students of higher educational institutions use personal computers with Internet access from friends and acquaintances, at public access points, at work, in public libraries, in Russian post offices, in computer clubs and other places, while, the disproportion between urban and rural areas remains in all places of Internet access, with the exception of places of work, as in urban areas the indicator is 15%, and in rural areas - 17%.

Let us consider the frequency of Internet use by students of higher educational institutions at their place of residence (figure 3) [5].

The figure shows that, on average, 95% of students use the Internet every day, while in urban areas this indicator is 5% higher than in rural areas. The rest of the indicators are within 4%, that is, a small number of students use the Internet at least once a day, month and even less often, mainly in rural areas.

Thus, the analysis showed that, in general, students of higher educational institutions in their places of residence have personal computers with Internet access, which they use every day in their educational activities. It is also worth noting that students living in urban areas are more equipped with personal computers with the Internet than those living in rural areas. In this regard, we consider it expedient to propose mechanisms to eliminate the digital divide among students living in urban and rural areas [6-7].

4. Discussion

Providing rural areas with the Internet, including students living in the area, is a strategic task for modern society. Of course, the presence or absence of the Internet in rural areas is dictated by geographic conditions, the ability to lay a cable or other technologies that would provide consumers with the Internet. Of course, the presence of the Internet in rural areas and hard-to-reach areas is a necessity for the functioning of a number of enterprises, the development of spheres of activity, the receipt of necessary public services by the population and other opportunities provided by the Internet.

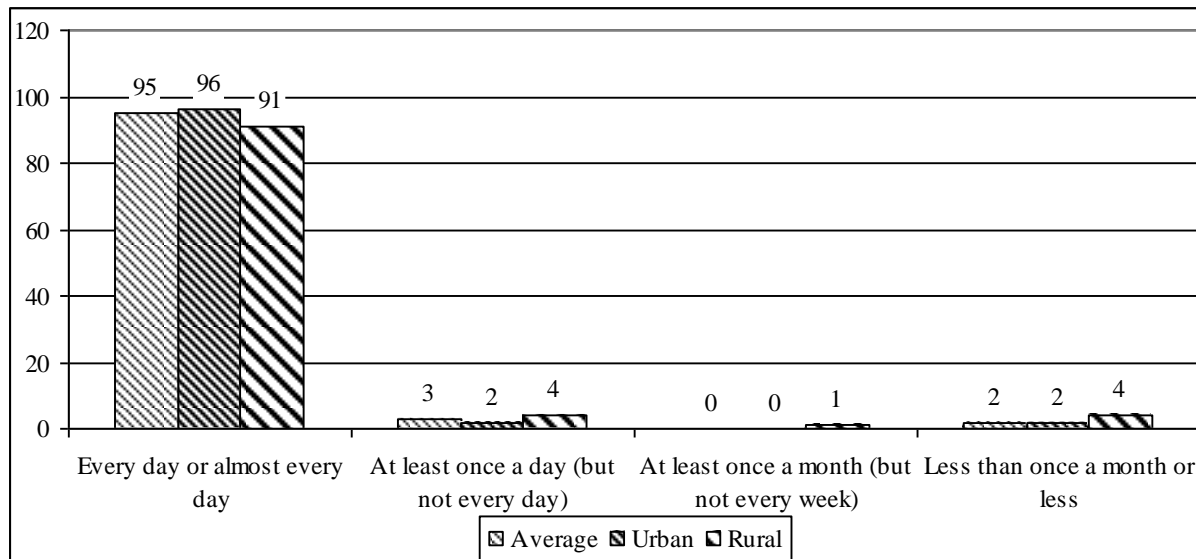


Figure 3. Frequency of Internet use by students of higher education by place of residence in 2017, as a percentage.

In our opinion, on the territory of Russia it is advisable to use the technologies of satellite Internet, which operates on the technologies of satellite communications and television. An exemplary satellite Internet technology is shown in figure 4 [8-10].

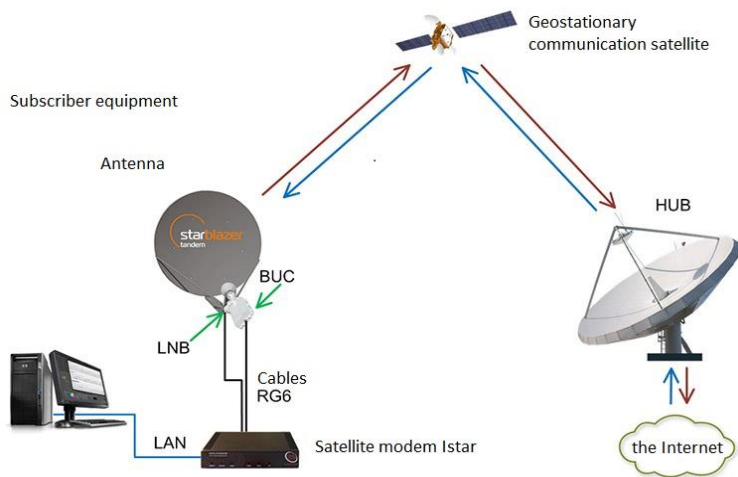


Figure 4. Satellite Internet scheme.

The figure shows that, in general, the use of satellite Internet will allow you to receive Internet in any locality, as a result of which the problem of digital inequality among the urban and rural population, including students of higher educational institutions living in different areas, will be solved. It is also worth noting that during the transition to distance and electronic education, due to the pandemic, this technology is relevant not only for students in rural areas, but also for a number of urban areas where, for one reason or another, it is impossible to use traditional methods of connecting to the network. the Internet.

Thus, the proposed new technologies will make it possible to provide Internet not only for students, but also for a number of enterprises and organizations that have switched to a remote form of work or work requires the use of the Internet to perform current production operations.

5. Conclusion

Within the framework of the study, groups of indicators were considered that reflect the places where students use personal computers, where they exit from personal computers to the Internet and the frequency of using personal computers; these indicators were analyzed for rural and urban areas. As a result, it was revealed that students daily use personal computers with Internet access in their places of residence, while indicators for urban and rural areas have different meanings. To solve this problem, the work proposed the use of satellite Internet to provide Internet to rural areas and hard-to-reach areas, which will solve not only the issue of digital inequality among students, but also provide Internet supply to other areas of activity and industry.

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