

## Preparation of future teachers for the introduction of digital innovation in a Rural School: problems and prospects

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**ABSTRACT.** The purpose of the article: to substantiate the urgency of the problem of providing rural schools with qualified teachers; to characterize digital innovations and their use in rural education in the conditions of COVID-19; to analyze the difficulties and prospects for preparing teachers for the use of digital technologies in distance learning in rural remote schools. The following research methods were used: analytical, empirical, and mathematical statistics. Theoretical analysis of the state of the problem in pedagogical science, in particular, the introduction of digital innovations in the educational process is outlined as a necessary condition for sustainable development of rural education. The results of an empirical study conducted among future teachers on their readiness to work in the future in rural areas are presented. A gap was revealed between young teachers' professional expectations and real school practice in remote rural schools. Emphasis was placed on the necessity to ensure cooperation between schools, parents, the public, and local businesses to improve the quality of rural education.

**Keywords:** future teachers, rural school, digital technologies.

## **Preparación de futuros profesores para la introducción de las innovaciones digitales en una escuela rural: problemas y perspectivas**

**RESUMEN.** El objeto del artículo: fundamentar la actualidad del problema que consiste en proporcionar a las escuelas rurales el personal docente debidamente calificado; caracterizar las innovaciones digitales y su aplicación en la educación rural en las condiciones del COVID-19; analizar las dificultades y perspectivas de la preparación de profesores en la aplicación de tecnologías digitales en la educación a distancia en escuelas rurales. Se utilizaron los siguientes métodos de investigación: de estadística analítica, empíricos y matemáticos. El análisis teórico del estado de la problemática en la ciencia pedagógica, en particular, la introducción de innovaciones digitales en el proceso educativo se perfila como condición esencial y necesaria para el desarrollo continuo de la educación rural. Se presentan los resultados de un estudio empírico realizado entre futuros profesores en el aspecto de su preparación para trabajar en zonas rurales. Se descubrió una ruptura entre las expectativas profesionales de los profesores jóvenes y la práctica escolar real en las escuelas rurales. Se hizo hincapié en la necesidad de garantizar la cooperación entre las escuelas, los padres, la población en general y las empresas locales para mejorar la calidad de la educación rural.

**Palabras clave:** futuros profesores, escuela rural, tecnologías digitales.

## **Preparação de futuros professores para a introdução de inovações digitais na escola rural: problemas e perspectivas**

**RESUMO.** Os objetivos do artigo são fundamentar a urgência do problema da colocação de professores qualificados em escolas rurais; caracterizar as inovações digitais e sua utilização nas escolas rurais nas condições do COVID-19; e analisar as dificuldades e perspectivas da formação de professores para o uso de tecnologias digitais na educação à distância em escolas remotas rurais. Utilizamos os seguintes métodos de pesquisa: analítico, empírico e método da estatística matemática. A análise teórica do estado do problema nas ciências pedagógicas, em particular, a introdução de inovações digitais no processo educacional é delineada como uma condição necessária para o desenvolvimento sustentável da educação do campo. No artigo, apresentamos os resultados de nosso estudo empírico realizado com futuros professores sobre a sua prontidão para trabalhar no futuro em áreas rurais. Revelou-se uma lacuna entre as expectativas profissionais dos professores jovens e a prática escolar real em escolas rurais remotas. A ênfase foi colocada na necessidade de assegurar a cooperação entre escolas, pais, o público e as empresas locais, a fim de melhorar a qualidade da educação rural.

**Palavras-chave:** futuros professores, escola rural, tecnologias digitais.

## Introduction

In scientific publications, modern scholars emphasize the problem of sustainable development of rural education in environmental (environmental learning), social (feeling of belonging to the school community, devaluation of the teaching-learning process), and economic aspects (financial difficulties of families) (Mora, Gomes & Barbado, 2021). The results of the study of international experience show that digital technologies have become a driving force in the economic recovery of many countries and determine the basis for sustainable development in the future. Therefore, the task of education is to train an educated, creative, competitive in the modern labor market specialist who has a system of competencies, among which a prominent place belongs to digital competence. After all, along with improving the quality of modern education, we are talking about “digitalization”, informatization as a set of interconnected organizational and legal, socio-economic, educational and methodological, scientific and technical, production and management processes aimed at meeting information, computing and telecommunications needs...of participants of the educational process, as well as those who manage and provide this process” (Bykov & Gurzhiy, 2012).

In the context of the European Higher Education Area, various possibilities of information technologies are considered today, active methods of teaching students are introduced, which motivate them to creative research, non-standard decision-making, as opposed to traditional lectures or seminars of reproductive nature (Lord, 1997). Therefore, today the problem of acquiring competencies and personal abilities in e-learning technologies as a necessary condition for their continuous professional development, as well as readiness to use digital resources and tools, especially in remote rural schools, is relevant.

Thus, due to the development and practical use of new information and communication technologies (ICT), education is undergoing significant changes, in particular, methods of e-learning, which are now the subject of widespread implementation in the education system of foreign countries. Further development of “means and technologies of information and communication networks, in particular the Internet, which form a computer-technological platform of the educational environment of the modern education system, first of all open. On this basis, the subject-technological organization of information educational space is carried

out, the processes of accumulation and storage of various subject collections of electronic educational resources are streamlined, equal access to them is provided to learners, ICT support of learning processes, research, and education management is significantly improved. In general, “this all contributes to improving the quality of educational services provided by educational institutions” (Bykov, 2011, p. 3).

At the same time, there are remote educational institutions in rural areas that cannot provide quality education for students, including due to the lack of e-learning tools, and digital literacy of all participants in the educational process. Therefore, such schools face a shortage of teachers, and many small and rural school districts are developing strategies to retain teachers in small and rural schools (Lowe, 2006). These difficulties have become particularly important during distance learning due to the spread of the coronavirus pandemic worldwide.

Thus, we face public challenges and an urgent need for school practice for the development of rural educational institutions, training teachers to modernize education in the use of methods and tools for forming an information educational environment in rural areas, creating an

appropriate information resource for distance education and more.

A thorough study, objective assessment, creative thinking, and implementation of the best achievements of national and foreign experience in the organization of rural education with the optimal combination of the classical heritage of the past and modern scientific research will help to achieve success in reforming and renewing schools in rural areas.

*The article aims* to highlight the content of the main concepts of the study, to characterize digital innovations in modern distance education in COVID-19, to analyze problems and prospects for preparing teachers to use digital technologies in distance learning in rural remote schools.

## **Research methods**

*The analytical method* was used to study the scientific-pedagogical literature on the organization of education in rural schools, including the use of e-learning for distance learning, as well as training of future teachers to work in remote rural schools, taking into account modern realities.

*Empirical methods* (observations, questionnaires) – to study teachers’ opinions on the quality of rural school

education, in particular during distance learning due to COVID-19, to identify typical problems of preparing teachers to work in rural areas.

*Methods of mathematical statistics* – for quantitative and qualitative analysis of research results.

## **Results of Research**

### ***Review of scientific sources***

The problems of organizing education in rural schools and preparing teachers to work in remote rural areas are of great concern to scholars and practitioners in the education field in many countries. These questions are studied by scientists in the United States and Canada (Lowe, 2006; Arnold, Newman, Gaddy & Dean, 2005; Blake, 2019; Wallin & Newton, 2015), Europe (Smit & Humpert, 2012); South America (Valadão, Santos, Pinto & Tico, 2021), Australia (Roberts & Green, 2013), Africa (Du Plessis & Mestry, 2019; Mhishi, Bhukuvhani & Sana, 2012), post-Soviet countries in the East and Western Europe (Budnyk, Mazur, Kondur, Smoliuk & Palahniuk, 2020). The preparation of teachers for work in rural areas in the historical context is presented in the works of Meredith (1929), Ivanyuk (2014).

In modern conditions, there is a gap between young teachers' professional

expectations and the real school practice in remote rural schools. To do this, in the process of their preparation at the university it is necessary to develop practical skills in understanding child psychology, develop a proper attitude to teaching, which will allow teachers to use effective innovative tools, accept and take into account individual children's developmental differences to optimize the educational process, to ensure cooperation with parents and promote the formation of a positive attitude towards school and teachers in general. Therefore, it is important to take into account the opinion of the community and local businesses that should be involved in the development of rural education, which today, unfortunately, in most cases is not ready to provide quality services during a coronavirus pandemic.

Outbreaks of various pandemics are known in world history, which in turn have intensified scientists, educators, health workers, the public, and politicians for progress. Thus, the pandemic of the Justinianic plague (approximately 540 AD) had 25-50 million victims - at that time almost a quarter of the world's population. The Black Death (1340-1350) was one of the largest pandemics in human history, killing approximately 75 to 200 million people and spreading from China to Asia,

and Europe. The so-called “Spanish flu” (1918) infected 500 million people in all parts of the world, even in the far-reaching. “Swine flu” pandemic (2009) – at least 20% of the world’s population has been infected. Mutations of viruses cause new outbreaks of infections. And in 2020 we had massive SARS-CoV-2 infections. Scientists are working on the development of drugs for the treatment of COVID-19, and teachers – on the adaptation of education in different institutions, in different countries to work with students. Digital tools and resources help to create the online educational environment.

To create and implement a model of education based on community-based learning, scholars, for example in India, are working to develop appropriate programs that take into account the specifics of the national rural school (Rural Engagement ...).

Taking into account both the opportunities and challenges posed by conditions of rural life, educators can work to involve parents by setting up programs that include features with well-documented, positive results. Among the features most often recommended are:

- 1) parent enrolment in adult education and parenting education programs;
- 2) cooperative strategies for extending the school curriculum beyond the school walls;
- 3) efforts to help parents provide learning experiences at home;

- 4) home visits by personnel trained to facilitate home-school communication;
- 5) in-classroom involvement of parents, local leaders, and community;
- 6) summer camps for both parents and children;
- 7) use of school facilities for community activities (Rural Engagement...).

In line with our research, of course, the introduction of digital technologies in rural education and the creation of appropriate conditions allowing teachers to choose rural areas for professional work is crucial.

### **Introduction of digital innovations in the educational process as a necessary condition for the development of rural education**

The implementation of digital innovations in rural education largely depends on effective management at the “horizontal” and “vertical” levels based on partnership and cooperation. One of the most important elements of improving school management is information resources.

Speaking of informatization of education usually involves methods and technologies. Equally important is the content of information to be stored and processed in information systems. Any management is based on information about the status of the management object. The

axiom is the impossibility of effective management without understanding the state of this object, the ability to track the results of management influences, to monitor the approach (or distance) of the object from the desired state, and so on (Bakhrushyn, 2015).

Objective information about an educational institution in a rural area creates its positive image in the community, adjusts to cooperation, and improves the quality of educational services. An important condition for the development of rural education in modern conditions is the introduction of digital technologies, increasing teachers' digital competence, and attracting investment. Therefore, there is also a growing demand for schoolmasters, who can pursue a policy of intensive development of rural schools in cooperation with the community and local business, to respond immediately to commercial requirements and needs of stakeholders.

The management of educational innovations is a modern direction of management development, which reveals the impact of investment and innovation on the development of human, material, and financial resources in educational institutions for improving the quality of basic indicators of their activities (Danylenko, 2007).

In addition to providing the rural school with digital technologies, the issue of developing teachers' and students' digital skills, their use of digital tools for teaching and learning, working with digital tools, and literacy in the use of the information environment is quite acute.

Digital competence of the individual includes a system of knowledge, skills, attitudes (including abilities, strategies, values, and awareness) that are necessary for the use of information and communication technologies and digital media to perform tasks, problem-solving; communication; information management; cooperation; creation and distribution of content, etc. (Ferrari, 2012, p. 3-4). These are information literacy, the culture of using data and communication in the information space, and the ability to create relevant digital content. Digital competence also involves awareness of legal and ethical principles regarding the use of various electronic resources, digital technologies, the ability to be critical of the accuracy of the information, and competently use digital media to achieve personal, professional, or social goals (Budnyk, 2018).

In the current context of reforming higher education to work in quarantine due to the pandemic COVID-19, the study and implementation of progressive experience



in the use of the latest pedagogical technologies in the training of future professionals are very timely. In particular, we are talking about such educational technologies as distance learning, e-learning, u-learning, m-learning, flipped learning, interactive methods, training technology, etc. To use them, the following are necessary: the availability of high-speed Internet in the educational institution, a high level of digital competence of the subjects of professional activity, technical support of the educational process, etc. Therefore, the practical possibilities and effectiveness of the above methods are practically not used.

Today, the most suitable for many institutions, especially in rural areas, in our opinion, is a blended learning model, which combines all these technologies, i.e. a distance learning system with a traditional one. According to C. R. Graham, the blended learning model includes traditional and computer-mediated student learning (2005).

Thus, blended learning is a purposeful systematic process of interaction between learning subjects, which organically combines traditional and distance learning models, takes place in the classroom and out, in synchronous or asynchronous modes, involves the

widespread use of ICT working with students.

There are the following types of distance learning: traditional distance learning (interaction between subjects is delayed in time) and e-distance learning (interaction between participants is both asynchronous and synchronous in time, and is based on the use of modern ICT) (Bykov, 2011).

E-distance learning (e-DL) is “a type of distance learning in which participants and organizers of the learning process interact both asynchronous and synchronous in time, mainly using electronic transport systems for delivery of teaching aids and other information objects, computer networks Internet/Intranet, media teaching aids, and information-communication technologies. Network e-DL systems are also called Distributed Learning Network systems or simply Distributed Learning” (Bykov, 2011).

The e-learning system in educational institutions at all levels is well developed in China, so even during online learning due to the coronavirus pandemic, most students had a positive, confident, and expected attitude to the development of virtual education as the main method of teaching and learning in the future. According to research results, in this

country also secondary school students have experienced some difficulties due to adaptation, lack of "live" communication, and collective learning (Xu, 2021).

### **Problems of using digital technologies in a rural school**

The issues of optimization of general rural schools are nationwide, as the efficiency and pace of implementation of high-quality socio-economic transformations in rural areas largely depend on the further development of schools in rural areas. Rural school influences the formation of rural society, the development of general cultural values of residents (Ivanyuk, 2015).

Several scientific studies show that small rural schools have significant potential for the development of a child's personal qualities, close cooperation with parents, socially disadvantaged families and their children, and so on. Therefore, such schools may be more effective in terms of the quality of educational services and students' interest than large schools in cities (Raywid, 1999).

In rural areas, schools have a significant number of benefits for students, in contrast to schools located in cities.

1. First of all, there is a much smaller number of students in the class, which allows you to individualize learning and

pay more attention to the development of creative abilities and talents of each student. The teacher has the opportunity to pay more attention to the communicative activity, problem-based, and research learning (Budnyk, Fomin, Novoselska & Voitovych, 2020).

2. Rural conditions make it possible to implement more widely the regional component of the content of education, to use the ethnographic elements of a particular area to promote customs and traditions. After all, the school in rural areas, in particular primary schools, is one of the main sources of national and spiritual revival and preservation of cultural and historical traditions.

3. Opportunities for the rural teacher's creativity in work with pupils are expanded. After all, there is usually a unique natural and socio-cultural environment that "includes the local funds of knowledge present in rural communities broadly, as well as the backgrounds and daily experiences of rural school-aged children" (Avery & Kassam, 2011). Teachers have the opportunity to organize lessons in nature and pay more attention to observation, excursions, etc.

4. In rural areas, in contrast to the urban city, there is a much smaller population, which means more opportunities for the establishment of

subject-subject communication in learning based on humanism and tolerance. It also allows for an off-line or mixed learning process if the sanitary-epidemiological situation is controlled for the spread of infections.

In addition, it is worth highlighting several negative aspects and difficulties that rural schools face in real practice. After all, many countries have faced the problem of demographic crisis, in particular Alpine and subalpine regions, which causes the problem of survival of small schools (Smit & Humpert, 2012).

Rural areas are mostly depressed, especially in developing countries. Such areas are often characterized by poor infrastructure, pests, and diseases, sometimes wildlife attacks on humans, harsh climatic conditions, and seasonal floods, which complicate the recruitment and retention of qualified teachers (Mhishi, Bhukuvhani & Sana, 2012).

Numerous studies in Poland and Ukraine prove insufficient funding for rural schools, lack of didactic materials for reading, development of sensory skills or design, lack of e-learning tools, etc. (Budnyk, Mazur, Kondur, Smoliuk & Palahniuk, 2020). For example, in the provinces of Canada, rural schools often face the following difficulties: (a) isolation from specialized services; (b) limited

access to quality staff, development, and university services; (c) lack of teachers; and (d) decreasing enrolment which leads to decreased funding (Wallin & Reimer, 2008).

The economic constraints of governments to provide free basic education to all its citizens and the low socio-economic status of parents are serious barriers preventing children from receiving a high standard of education and experiencing a quality of life. This is particularly true in Africa and other developing countries around the world, where the majority of people live in poverty and do not have access to quality education. Although governments are increasingly concerned with issues of teacher development, the focus is often more on urban schools, resulting in rural schools being neglected (Du Plessis, & Mestry, 2019).

Scholars believe that children's education in rural schools should be viewed through the prism of social justice and provide quality education for all citizens of the country, regardless of their place of residence, gender, or nationality. "Like most rural schools in Labrador are situated in high poverty areas, with a large percentage of Aboriginal students enrolled, the lack of resourcing within the local school has a significant impact on students" (Blake, 2019).

Another, no less important issue is the provision of conditions for working with children with special educational

needs (Cheney, & Demachak, 2001), the creation of a universal educational design for the implementation of inclusive education in rural areas (Alves, Ribeiro & Simões, 2013).

Of course, we are talking about the use of ICT in education, and providing learning by electronic means to work in an inclusive process in the Ukrainian schools (Nikolaesku et al., 2021), in particular: standard technologies, personal computers with built-in settings for people with disabilities, available data formats, or alternative formats, digital format standard for recording digital audiobooks, Braille printers, displays and speech synthesizers, assistive technologies (hearing aids, screen readers, keyboards with special capabilities, alternative communication systems), etc.

As we can see, under such conditions there are difficulties in providing rural educational institutions with qualified teachers, increasing their motivation for personal and professional growth. And not always family ties and personal interests can force young and promising teachers to work in rural remote schools. “Potential contributing factors include social and collegial isolation, low salaries, multiple grades or subject teaching assignments, and lack of familiarity with rural schools and communities. Together, these

challenges can discourage teachers from accepting rural positions or cause them to leave rural settings after teaching there for only a short time.” (Barley & Brigham, 2008). Such problems are typical of rural education in many countries (Zinger, Haymore Sandholtz & Ringstaff, 2020).

Moreover, in many countries, public policy is aimed at closing a few remote schools. For example, in Brazil, children and young people have become hostages of school transport to urban schools (Valadão, Santos, Pinto & Tico, 2021). Ukraine also conducts a policy of optimizing understaffed schools, establishing basic secondary education institutions, and creating complete classes to direct public resources to ensure the quality of education and equipping them with modern infrastructure. However, it is a long process and students from remote areas also have transportation problems wasting a significant amount of time to get to school.

The total provision of rural settlements with schools in Ukraine is about 46.5%. More than 200,000 children live outside pedestrian (more than 3 km) access and need transportation. The rapid decline in the birth rate in rural areas, especially in recent years, is causing a lack of rural schools. Every sixth school in the village is understaffed. The material and

technical base of the educational network in the countryside is generally in critical condition. In particular, at least one in eight rural schools needs major repairs (On the introduction of a moratorium, 2013).

The conditions for obtaining general secondary education in rural areas of Ukraine and the results of students' achievements give rise to discussions about discrimination against rural children. After all, in addition to the low equipment of a rural school, its attendance is often simply dangerous for children's health (insufficient temperature in rooms in winter, the buildings often need repair). At the same time, about a quarter of rural schools still do not have a water supply, and more than half do not have a hot water supply.

Education achievement rates in rural areas lag far behind cities. Most students in rural areas after completing general secondary education in the independent assessment of learning outcomes demonstrated the basic and secondary level of knowledge of the Ukrainian language (62.7%), history of Ukraine (77.5%), mathematics (72.3%). Only 4% of rural students received a high score on the English exam. At the same time, in cities, graduates of secondary schools demonstrate a much higher level of

knowledge (How to save rural education, 2016).

Many rural schools in Ukraine and other post-Soviet countries need to improve their facilities, and this is a major problem because of the low level of digitalization, the introduction of educational innovations, the provision of effective distance learning, and so on.

At the same time, the difficulties of using digital technologies and implementing distance education in rural schools are the same as in schools in other countries.

The collective online learning atmosphere is the most complained part of e-learning by students, of which the main manifestation is a sharp reduction in social presence. On the one hand, there is less verbal communication between teachers and students than in a classroom, which seems traditional lecture-based teaching is now reintroduced in distance learning. On the other hand, the mental communication between teachers and students seems to be 'isolated' with social isolation. It is difficult to accurately communicate with eyes, expressions, body movements, emotions, feelings, and spirit. Briefly, to some extent, e-learning simplifies communication for teacher-student and student-student to words or text, without richer human face-to-face interaction (Xu, 2021, p. 16).

Therefore, teachers need to increase their digital literacy for the future development of online learning and the use of e-resources, multimedia technologies for

effective pedagogical interaction and communication with students, which is especially important for rural remote schools.

### **Readiness of future teachers to work in a rural school: the results of an empirical study**

The conceptual principles of preparation of future teachers for work in a rural school are the following: preparation for work is carried out in the process of formation of a teacher's professional-pedagogical activity; use of vitagenic experience and ensuring individual professional and pedagogical development of students (Onyshkiv, 2015).

The societal challenges of distance learning caused by COVID-19 have highlighted the need for digital skills of teachers and students, the creation of a virtual classroom with appropriate digital educational tools and resources that can provide the necessary knowledge and skills, maintain technical requirements and provide high-speed Internet connection, especially for people with certain economic constraints. In addition, students are often indifferent to virtual education, so it requires a high level of the teacher's professional competence (Estrada-Araoz, Gallegos-Ramos, Mamani-Uchasara & Huaypar-Loayza, 2020).

To identify future teachers' readiness to work in the modern realities of the rural school, we conducted an anonymous survey, which involved 116 students of Vasyl Stefanyk Precarpathian National University (Ukraine). The survey was conducted online in May 2021. The choice of the research sample was random. The sample of respondents by gender is 98 women (84.5%) and 18 men (15.5%). This is because the teaching profession is chosen mostly by women in the country.

Statistical analysis was based on survey data. This article presents only some of the questions of the questionnaire developed by the authors. The idea of the study was to reveal the general vision of students (future teachers) of their intentions to work in a rural school, as well as the ratio of these data globally.

First of all, it was about the possibilities of using digital technologies in working with students, as well as the prospects for the rural teachers' development in this context.

To our question: "Are you ready to work in a rural school after graduating from university?" we received disappointing answers, as the majority of future teachers (96 persons, which is 82.7% of the total number of respondents) do not plan to connect their lives with the countryside and professional activities in

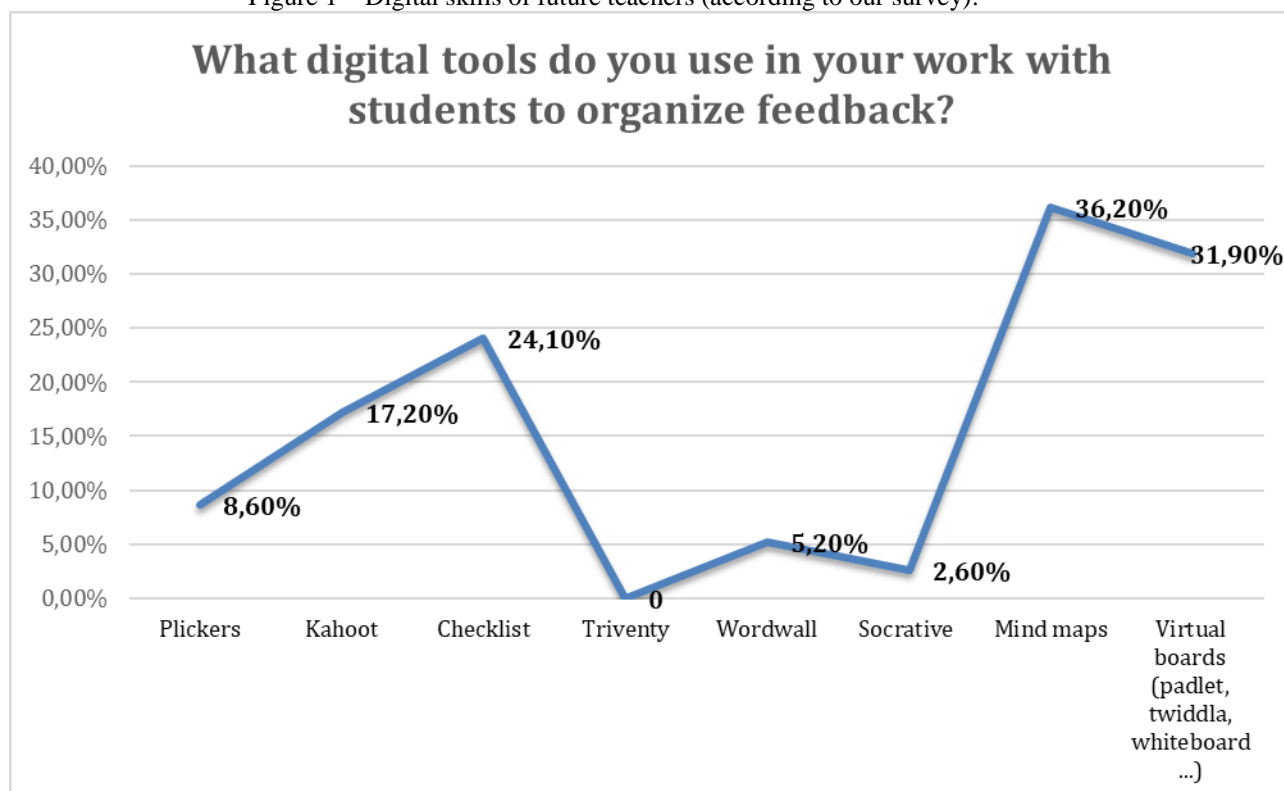
the rural area. At the same time, we have a shortage of qualified young teachers in rural education. 36.4% answered they do not plan to work in general secondary education at all in the future. And only 17.24% of students want to return to their home village to teach students.

Regarding the use of digital tools and resources in pedagogical activities, the respondents' answers characterize the general picture of digitalization in rural areas, in particular in schools. After all, students are well aware of the situation that intensified during the COVID-19

pandemic (difficulty in processing educational material with gadgets, insufficient material and technical support of school distance learning, remoteness of some children from access to quality Internet, and insufficient digital literacy of teachers and students in modern information technology, etc.).

Modern students who are being prepared to come to school already have a much higher level of digital competence, they can use many digital resources in their work (Figure 1).

Figure 1 – Digital skills of future teachers (according to our survey).



Source: The survey was conducted by the authors of the article.

In addition, future teachers can use tools for visualizing educational material,

creating a virtual lesson, organizing group work, research training of students in

online laboratories, etc. But, of course, for this, first of all, it is necessary to provide teachers and students with appropriate digital technologies: desktop personal computer (laptop, netbook), Smartphone (tablets), digital TV, Internet, etc. These are the prospects for the development of teachers for rural areas of Ukraine.

At the same time, the mini-survey shows that the trend of a slightly lower level of education, the introduction of digital technologies in education is lower in rural schools, in contrast to the infrastructure of schools in large cities in Ukraine and other countries. Young professionals who seek professional development, career growth, try to avoid the difficulties of working with students in rural schools, including in the context of digitalization of the educational process.

It should be noted that these results are limited to a group of students from one university who participated in the survey. Therefore, future research should increase the sample of future teachers to broaden their motivations and career prospects in rural schools in a regional, national or global context. This will also avoid bias in the analysis of the outlined problem.

An important task today is to direct young professionals to the innovative development of remote rural schools to create a developing pedagogical

environment, based on which it is possible to implement the idea of interaction of students of different ages. In addition, resource education centers fulfill the mission of scientific and methodological centers, which assist not only teachers in the methodological support of the educational process but also students of nearby small schools in obtaining a quality education. Based on the use of educational resources of resource centers, the quality of students' knowledge in small schools increases, creative connections between school teachers are strengthened and the process of exchanging experiences is expanded, first of all, successful experience in rural schools. Young innovative teachers must lead the development of rural education today.

## Conclusions

In modern conditions, rural schools face many problems. After all, local authorities, citing the lack of necessary funds for the maintenance of these schools, often decide to close rural schools, which makes it impossible for children to obtain a quality education, leads to social conflicts, creates tension among residents, generates numerous appeals from parents of students, rural communities, teaching staff regarding cases of unjustified closure of secondary schools in villages.



Another important challenge for rural education is digitization, which has become particularly acute in the context of the coronavirus pandemic when most schools have switched to distance or blended learning. In this context, it is important not only to provide these institutions with digital technologies, educational and methodological support, electronic resources, etc. To effectively organize the educational process, it is necessary to increase teachers' and students' levels of digital literacy to work in a digital educational environment online or offline.

At the same time, there is a problem of training qualified specialists to work in rural schools, especially for teachers. To attract teachers to work in depressed rural schools (particularly in developing countries), scholars recommend that "deliberate efforts be directed toward the targeted recruitment of school leavers and relief teachers from disadvantaged rural areas who possess the requisite minimum entry qualifications to train as science teachers to improve teacher retention in remote areas" (Mhishi, Bhukuvhani & Sana, 2012).

Based on the analysis of the state of education in rural schools of Ukraine (rural education covers a third of students: 1.2

million out of 3.8 million), we can draw the following conclusions:

1) the costs of student education in rural areas exceed those in the city, but they do not provide rural students with a high level of knowledge or decent learning conditions;

2) the equipment of most remote rural schools is unsatisfactory (there is a lack of computer equipment, equipment for laboratory experiments and experiments, sometimes there is no Internet, etc.);

3) school conditions are often harmful to students' health;

4) due to the lack of qualified staff in the countryside, teachers at school often teach up to 10 subjects and have low motivation;

5) young teachers often prefer employment in urban schools because of the lack of proper infrastructure in rural areas and prospects for professional growth.

Thus, rural schools in Ukraine, despite their high cost, often cannot provide quality and affordable educational services. Education achievement in rural areas lags far behind city students' achievements. Today, there are discussions about the reforming of Ukrainian rural education introducing the optimization of the school network, and the maintaining of

small schools only in remote physically isolated communities, where transportation of students and teachers to school is impossible. Opponents of the support education centers argue that the consolidation and closure of rural educational institutions will ruin the economic and cultural development of the village. Among the advantages of rural education, they point to the availability of facilities and a small number of students in the classroom, individualized learning.

Ukraine can serve as an example of typical problems and prospects of rural education in many developing countries.

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