

Digital Barrier-Free and Psychosocial Support for Students with Disabilities in Distance Learning Environments

Oksana Kravchenko[†], Natalia Koliada[†], Larysa Berezivska^{††}, Svitlana Dikhtyarenko[†],
Svitlana Baida[†], Larysa Danylevych[†]

oksolkkravchenko@ukr.net Koliada_n@ukr.net lberezivska@ukr.net sadova32bb@gmail.com
cbajda2017@gmail.com lar62ko@gmail.com

[†] Faculty of Social and Psychological Education, Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine

^{††} V. O. Sukhomlynskyi State Scientific and Pedagogical Library of Ukraine, The National Academy of Science of Ukraine, Kyiv, Ukraine

Abstract

The article clarifies the conditions for information, digital and educational accessibility for higher education seekers with disabilities in terms of distance learning caused by quarantine restrictions. It is established that such conditions are regulated by international and Ukrainian legal documents (The Standard Rules on the Equalization of Opportunities for Persons with Disabilities, Convention on the Rights of Persons with Disabilities, Sustainable Development Goals, Law of Ukraine “On Education”, Law of Ukraine “On Higher Education”, Strategy for the Development of Higher Education in Ukraine 2021–2031, Development Strategy areas of innovation for the period up to 2030, Development strategy of the sphere of innovation activity for the period up to 2030). As a part of information barrierlessness, Higher Education Institutions (HEI) should provide access to information in various formats and using technologies, in particular Braille script, large-type printing, audio description (audio descriptive commenting), sign language interpretation, subtitling, a format suitable for reading by screen access programs, formats of simple speech, easy-to-read formats, means of alternative communication. The experience of Pavlo Tychyna Uman State Pedagogical University is described. In particular, special attention is paid to the study of sign language: in view of this, the initiative group implemented the project “Learning to hear and overcome social isolation together” with the financial support of the British Council in Ukraine. Within the framework of digital accessibility, the official website of the Faculty of Social and Psychological Education has been adapted for the visually impaired in accordance with WCAG 2.0 World Standards. In 2021, Pavlo Tychyna Uman State Pedagogical University implemented the project “Cultural, Recreational and Tourist Cherkasy Region: Inclusive Social 3D Map” funded by the Ukrainian Cultural Foundation; a site with available content for online travel in the region to provide barrier-free access to the historical and cultural heritage of Cherkasy region was created. Educational accessibility is achieved by increasing the number of people with special educational needs, receiving education in inclusive groups; activities of the Center for Social and Educational Integration and Inclusive Rehabilitation Social Tourism “Bez barieriv” (“Without barriers”); implementation of a research topic for financing the Ministry of Education and Science of Ukraine: “Social and psychological rehabilitation of children and youth with special educational needs by means of inclusive tourism”; implementation of the project

“Social inclusion of distance educational process”; development of information campaigns to popularize the ideas of accessibility, the need for its implementation, ongoing training programs and competitions, etc.

Keywords:

Inclusive Education, Distance Learning, Information Accessibility (Barrierlessness), Digital Accessibility (Barrierlessness), Educational Accessibility (Barrierlessness), Project.

1. Introduction

Over the last two years, human life has changed dramatically, especially in the field of education: the changes have occurred through the introduction of distance and blended learning, informatization of education, development of cloud technologies, barrier-free educational space, social distancing, health practices, etc. Academician V. Kremin aptly noted about educational challenges: “Modern civilizational challenges, the transition of mankind to innovative type of the progress, scientific and information technologies, digitalization in the context of globalization and intensification of competition in the world require the Ukrainian nation to concentrate spiritual, intellectual and economic efforts to develop a competitive state, prosperous and stable society of equal opportunities” [1, p. 5].

In the context of ensuring equal opportunities, the results of the sociological survey of the Center “Sotsialna Diia” (“Social Action”) are important, according to which Ukrainians believe that they are most often discriminated against by age – 40.2 % and by disability – 38 %. Among the main features are sexual orientation – 26.3 %, health status – 25.9 %, property status – 24.2 %, gender – 22.5 %, ethnic origin (nationality) – 21.3 % [2, p. 2]. With this in mind, the issues of finding effective ways to overcome discriminatory phenomena in the educational process, in particular on the basis of the child’s health, are relevant.

The Standard Rules on the Equalization of Opportunities for Persons with Disabilities (1993)

emphasizes that one of the main objectives of socio-economic development is to ensure that all persons with disabilities have access to all spheres of society. An in-depth understanding of this issue is part of educational and rehabilitation programs and activities for children with special educational needs.

The Convention on the Rights of Persons with Disabilities (2006) states that the full participation of persons with disabilities in public life is a valuable current and potential contribution to the common good, which will enable significant success in human, social and economic development. Article [3] provides for the right to accessibility in order to enable persons with disabilities to have independent lifestyles and to participate fully in all aspects of life. That is why appropriate measures must be taken at the state level to ensure that persons with disabilities have equal access to the physical environment, transport, information and communication, including information and communication technologies and systems, and other facilities and services, open or provided to the population, both in urban and rural areas.

According to *the Law of Ukraine "On Education"* (2017), to ensure equal access to education without discrimination on any grounds, including disability is among the principles of state policy in the field of education and principles of educational activities.

In 2014, a new *Law of Ukraine "On Higher Education"* was adopted, which fundamentally states that in order to exercise the right to higher education for persons with special educational needs, higher education institutions create the necessary conditions for them to obtain quality higher education.

Ensuring equal access to education for people with disabilities is complicated by quarantine restrictions, as a result of which the educational process takes place remotely and requires additional measures to master the requirements of educational programs. At the same time, distance learning technologies make educational content accessible by overcoming geographical and architectural barriers.

2. Theoretical Consideration

Among the goals of *the Strategy for the Development of Higher Education in Ukraine for 2021–2031* there is ensuring the accessibility and inclusiveness of higher education and the introduction of innovative technologies and distance learning in higher education, so let's try to study the problem of inclusive higher education through the prism of digitalization and distance learning in Higher Education Institutions [4].

The authors of the conceptual foundations for creating an inclusive educational environment in independent Ukraine were T. Illiashenko, A. Kolupaieva, K. Kolchenko, S. Lytovchenko, O. Lukianov, I. Malyshevska, P. Talanchuk, O. Taranchenko and others. Problems of

social and pedagogical support in the conditions of educational institution as conditions of integration into society of persons with disabilities were studied by Yu. Bohinska, O. Rasskazova, V. Teslenko, M. Chaikovskiy and others.

Organizational and content principles of online learning in higher education institutions are researched by Yu. Krylova-Hrek, M. Shyshkina, T. Bondarenko, O. Melnykov, D. Hertsiuk, and others.

In the work of Yu. Kruhlii effective ways and methods of presenting information on the subject on the educational Internet platform were identified, based on the analysis of scientific literature, examples of platforms for distance learning in European universities (<http://www.open.ac.uk/>, <http://www.open.ac.uk/>, <http://www.udima.es>) [5].

In 2021, the second edition of the "Encyclopedia of Education" (about 1500 terms) presented by reputable scientists was published in Ukraine. The analysis of the proposed terms shows that the lion's share of them relates to the digitization of the educational process, in particular such concepts as: "educational web portal", "educational web technologies", "e-learning", "cloud-based learning environment" (S. Lytvynova), "open educational resources", "electronic inclusion", "electronic educational resource" (Yu. Nosenko), "virtual educational platform" (V. Kamyshyn), "virtual reality" (O. Pinchuk), "E-learning course" (A. Dudko), "distance education (distance learning)", "E-system of teaching aids", "informatization of education", "information society", "information and educational environment", "computerization of education", "mobile learning", "mobile learning", "educational sites and portals", "digital pedagogy", "digital narrative" (V. Bykov), "Internet", "information and communication technologies in education", "educational online platform", "digital competence", "digital education", "digitalization of education, educational process" (O. Spirin), "information security", "cyberbullying", "cybersocialization", "media education" (L. Naidonova), "information culture" (M. Zhaldak), "information space" (O. Dubinina), "information and communication competence" (V. Lapinskyi), "Computer-oriented learning environment" (O. Sokoliuk), "computer-oriented educational tools" (Yu. Zhuk), "personal electronic cabinet" (K. Hodlevska), "digital competence framework" (O. Bazeliuk), "modern educational technologies" (H. Vaskivska), "cloud educational / scientific services", "cloud services", "cloud technologies" (M. Shyshkina).

The following terms are presented in the Encyclopedia of Inclusive Education: "Teacher's (or teaching) assistant" (N. Yarmola), autism (I. Nedozyim), "child with a disability" (N. Kvitka), "children's autism" (A. Honcharenko), "infantile cerebral palsy", "intellectual development disorders" (O. Chebotarova), "children with special educational needs", "classes with inclusive education" (A. Taranchenko), "access to education" (T. Lukina), "sign

language” (N. Adamiuk), “means of communication of children with mental and physical disabilities” (M. Sheremet), “mental retardation” (T. Illiashenko), “disability”, “deafblindness” (V. Kobylchenko), “individual rehabilitation program”, “cognitive development disorders”, “rehabilitation” (L. Prokhorenko), “inclusive education” (A. Kolupaieva), “inclusive educational environment”, “inclusive educational institution”, “concept of inclusive education development”, “education of persons with mental and physical disabilities”, “deaf pedagogy”, “USoD” (“Ukrainian Society of the Deaf”) (V. Zasenko), “inclusive resource center” (M. Poroshenko), “training and rehabilitation center”, “sensory disorders”, “typhlopsychology”, “USoB” (“Ukrainian Society of the Blind”) (T. Kostenko), “education of people with special educational needs” (N. Yarmola), “special educational needs”, “universal design in education” (A. Zamsha), “speech disorder” (Yu. Ribtsun), “hearing impairment” (S. Lytovcheko), “child psychiatry” (L. Lytvynchuk), “visually impaired children”, “blind children”, “typhlopedagogy”, “Braille letters (script)” (I. Hudym), “hearing-impaired children”, “deaf psychology” (V. Zhuk), “special (correctional) pedagogy” (V. Synov), “visual impairment specialist / typhloteacher” (Ye. Synova), “typhlosurdopedagogy / tactile interpreting pedagogy” (K. Dovhopola).

Thus, pedagogical science at the theoretical and methodological level expands the problems of research and responds to the transformation of social development, in particular with regard to the implementation of inclusive education and informational educational technologies. At the same time, the use of methodological tools and practical activities within the framework of these two scientific directions to create a comprehensive barrier-free environment for pupils and students in an educational institution has not yet been the subject of a separate study.

The purpose of the article is to find out the conditions for ensuring information, digital and educational accessibility for higher education seekers with disabilities in terms of distance learning caused by quarantine restrictions.

3. Experimental Consideration

To study the best experience in organizing distance learning in higher education, an analysis of the official sites of higher education institutions in Ukraine was performed, and a content review of Ukrainian journals was carried out on the study of scientific articles as for the content, forms and methods of distance learning on the technological support of the educational process. The main methodological approach to the study was the application of the main directions of the National Strategy for the creation of barrier-free space in Ukraine for the period up to 2030 (<https://zakon.rada.gov.ua/laws/show/366->

2021-%D1%80#Text), including information, digital and educational.

The 2030 Sustainable Development Goals include the development of new information and communication technologies to bridge the digital divide and equitable access to information and knowledge, as well as stimulate innovation [6]–[7].

The Government of Ukraine has approved an action plan for 2021–2023 to implement the *Development Strategy in the sphere of innovation activity for the period up to 2030*. Stimulating innovation and projects based on open data, digitalization, in particular the development of online courses on digital literacy for different segments of the population are among the priority areas.

In April 2021, the *National Strategy for the creation of barrier-free space in Ukraine for the period up to 2030* was approved by the order of the Cabinet of Ministers No. 366–r. The adoption of this document is an important factor in further social development in the direction of inclusive processes.

The aim of the strategy is to create a barrier-free environment for all population groups, ensure equal opportunities for everyone to exercise their rights, receive services on an equal footing with others by integrating physical, informational, digital, social and civic, economic and educational barriers to all spheres of public policy. Among the expected results of the Strategy implementation there is the definition and public support of the strategic course of the state in the field of barrier-free space, the consistent implementation of which will enable everyone to get equal opportunities and free access to education; to obtain equal conditions of participation in all spheres of society life; to get equal conditions and opportunities for cultural (artistic) and / or creative expression, cultural activities; access to cultural services, cultural values, cultural heritage and information about them [3].

We will try to analyze the creation of barrier-free space in higher education institution in the development of distance learning due to quarantine restrictions, as well as the processes of informatization and digitization.

Information accessibility is defined as one of the areas of the Strategy, which means that people, regardless of their functional impairments or communication skills, should have access to information in various formats and using technologies such as Braille script, large-type printing, audio description (audio descriptive commenting), sign language interpretation, subtitling, a format suitable for reading by screen access programs, formats of simple speech, easy-to-read formats, means of alternative communication. Another area of the Strategy is *digital accessibility*, as not all citizens have access to digital infrastructure and need to expand broadband access to connect in the country and computerize public institutions; digital public services (websites, applications, digital services) are not sufficiently adapted for all groups of the

population, and therefore require the development and implementation of appropriate standards.

In foreign countries, a social movement – *electronic inclusion (e-inclusion)*- has spread, which has the goal of bridging the digital divide, namely, increasing the availability of digital means for all regions of the planet without exception and for all categories of people, regardless of their special characteristics/needs. The introduction of electronic inclusion is important for education and is aimed at bridging the digital divide and increasing the level of education of the population of remote regions and socially vulnerable groups [1, p. 289].

The actualization of the issue of e-inclusion for higher education institutions has become especially noticeable since March 2020 – due to the spread of coronavirus disease, when the educational process was carried out remotely. These were challenges for university management, faculty, students and their parents. If over time management activities were aimed at implementing educational programs and curricula remotely, and research and teaching staff have intensively mastered the appropriate software for online teaching, students quickly became accustomed to the “distance”; and now remains open to address the provision of equal access to educational content for students with disabilities.

For the Faculty of Social and Psychological Education of Pavlo Tychyna Uman State Pedagogical University, along with distance learning, the issues of socialization and social integration of students with disabilities in conditions of distance learning are important. And the system of measures by means of information technologies is focused on it.

For *informational accessibility*, the students, regardless of their functional impairments or communication capabilities, are provided with access to information in different formats, in particular: at the expense of a special fund, plates in Braille script were purchased containing the name of each faculty, department, structural divisions of the university; the alphabet in Braille letters was purchased for the future specialists in inclusive education; reading rooms and computer labs are equipped with Braille keyboards for computers, etc.

Particular attention is paid to the study of sign language: in view of this, the initiative group of the faculty implemented the project “Learning to hear and overcome social isolation” with the financial support of the British Council in Ukraine. The aim of the project was to create a platform for learning and communicating in Ukrainian sign language, in particular in the context of the COVID–19 pandemic and the challenges it caused [8].

As part of the project, applicants for higher education – future educators, psychologists and social workers (over 60 people) received online lessons in sign language (2 classes per week from March 2021 to May 2021); were participants in the online training “Peculiarities of communication with

people with hearing impairments – overcoming social isolation”; online training “Features of working with people with hearing impairments: providing social services at the community level in a pandemic”; a selection of historical short stories about the most famous monuments of Cherkasy region (Ukraine) in sign language (during the project); transformation of this selection of stories of the most famous monuments of Ukraine into sign language.

As a result of the project, online resources were created that allow students with disabilities to have access to the historical and cultural heritage of the region and promote socio-cultural rehabilitation, thus complementing educational activities and diversifying extracurricular life in social isolation. As a result, video materials were prepared in sign language about prominent historical and cultural sites of Cherkasy region (Butskiy Canyon, Sofiivka National Dendrological Park, Chyhyryn, Lehedzino, Kaniv, Korsun, Korsun-Shevchenkivskiy), which are available on the official website <https://fspu.udpu.edu.ua/>.

At the same time, the implementation of the project revealed that communication and learning sign language through video communication has difficulties and requires the development of appropriate methodological materials.

Another area of the National Strategy is digital accessibility, and in this regard, it is important to ensure the availability of official websites of educational institutions, in particular, for people with visual impairments, severe musculoskeletal disorders. According to the Resolution of the Cabinet of Ministers of May 26, 2021 No. 537 “On approval of the Procedure for monitoring and assessing the degree of barrier-free facilities of physical environment and services for people with disabilities” websites of organizations should be accessible to users with visual and hearing impairments, musculoskeletal system disorders, speech and intellectual disorders, as well as with various combinations of disorders in accordance with DSTU ISO / IEC 40500: 2015 “Information technology. W3C Web Content Accessibility Guide (WCAG) 2.0” not lower than AA” [9]. These are the Web Content Accessibility Guidelines developed by the World Wide Web Consortium (W3C), the main body for standardizing web technologies). Web accessibility standards are being developed by the W3C’s Web Accessibility Initiative (WAI) working groups. The benchmarks in this area are the Web Content Accessibility Guidelines (WCAG), which are developed in collaboration with professionals and organizations around the world to ensure a single international standard that meets the needs of governments and state structures, private organizations and individuals. Starting with WCAG 2.0, the structure of the standard includes 4 basic principles (perception, controllability, comprehensibility and reliability), guidelines that provide basic objectives, guidelines (methods) and success criteria to ensure web accessibility at three levels – minimum (A), medium (AA),

high (AAA). WCAG version 2.1 contains 4 basic principles, 13 guidelines and 78 success criteria.

In this regard, the official website of the Faculty of Social and Psychological Education is adapted for the visually impaired in accordance with WCAG 2.0 World Standards (<https://fspou.edu.ua/>)

The Ministry of Digital Transformation has established a Council on Digital Accessibility for People with Disabilities, which will provide access to the Internet for people with disabilities; will ensure the development of new and adaptation of existing websites of public authorities for the needs of these people; will perform analysis of existing and development of new software for people with disabilities. The “Diia.Bezbariermist” (“Action.Barrier-free”) project is being launched – a section on the “Diia” (Ukr. for “Action”) portal with services for people who need help the most of all. That is why, with the spread of electronic services and the development of the digital state, the issue of web accessibility is becoming more relevant. The level of thoughtfulness and adaptability to the needs of different users is a website (colors, available fonts, convenient and logical navigation, etc.), will determine the level of its convenience and compliance with the principles of universal design. Web accessibility is an inclusive practice in which websites, online tools and web technologies are designed to be used by all users, including people with disabilities (but not exclusively by them). When organizing accessible web content, it is necessary to take into account individual characteristics that may prevent the user from accessing the Internet. Violations and restrictions that create barriers to access include: visual impairment; hearing impairment; speech disorders; musculoskeletal disorders; neurological disorders; cognitive impairment; temporary restrictions; situational restrictions; technical limitations; internet connection restrictions; old age. Web page design is considered accessible if the user is free to operate web content without assistance, namely – to perceive and understand the material, navigate within a page or group of related pages, navigate hyperlinks and enter their data into interactive forms. The web interface must be compatible with the so-called assistive technologies – assistive hardware and software that is installed on the computer or mobile device of the user [10].

In 2021, Pavlo Tychna Uman State Pedagogical University (Faculty of Social and Psychological Education) received funding from the Ukrainian Cultural Foundation (hereinafter – UCF) for the project “Cultural, recreational and tourist Cherkasy region: inclusive social 3D map”. The project has been implemented, a website has been created with available content for online travel in the region in order to create barrier-free access to the historical and cultural heritage of Cherkasy region (<https://fspou.edu.ua/inklyuzyvno-sotsial%CA%B9na-3D-karta/#/>) [11].

The uniqueness of the project lies in the integrative approach for the simultaneous solution of a set of relevant tasks: increasing the tourist attractiveness of the Cherkasy region; socio-cultural rehabilitation of people with disabilities; promoting cross-sectoral cooperation between government officials, higher education institutions, civil society and people with disabilities; ensuring barrier-free access to historical, cultural and natural sites; national-patriotic education of children and youth; development of digitalization and formation of IT skills in all categories of the population; achieving a high level of tolerance for otherness in society.

Inclusive social 3D map with four tourist routes and available content has no analogues in terms of online travel opportunities in the region, and an inclusive approach to creating barrier-free access to the historical and cultural heritage of Central Ukraine. The site has developed 4 tours in the Cherkasy region:

Tour 1. Uman;

Tour 2. Monastery – Zhashkiv – Zvenyhorodka – Talne;

Tour 3. Korsun-Shevchenkivskiy – Kaniv;

Tour 4. Chyhyryn.

Each tour shows a video of up to 40 minutes. Online 3D tour is a new format of travel to famous places and attractions, which is gaining popularity in today’s reality. Online tours provide the opportunity to visit many parts of the region for free without leaving home. 3D videos of each route (four in all) contain sign language interpretation for the hearing impaired, as well as are adapted for the visually impaired.

This resource is recommended for use in the organization of the educational process in higher education institutions, in particular when working with students with disabilities, thus creating conditions for their socialization and social integration. Creating and accessing appropriate platforms, especially for people with disabilities, will help them plan their holidays, including online travel, as well as visit the most famous historical and cultural sites and immerse themselves in historical adventures with the help of digital technologies.

The same position is shared by Ukrainian researchers I. Shyshenko and I. Kharchenko, who believe that the process of digitalization of education involves such promising innovative technologies as artificial intelligence, blockchain and virtual reality, which allow students to form a wide range of digital competencies needed in digital society. It is the technology of virtual reality, a world created by technical means, which is transmitted to man through his senses: sight, hearing, touch and others. There are the following types of virtual reality systems:

- i) ordinary (classic) virtual reality (VirtualReality – VR), where they learn to interact or immerse themselves in the virtual world with the help of a computer program;

- ii) augmented reality (AmendedReality – AR), where computer-generated information is superimposed on real-world images;
- iii) mixed reality (MixedReality – MR), where the real world is connected to the virtual, and they are combined with each other.

MR technology can be used to solve various problems and is universal. For example, teachers and students have the opportunity to use virtual laboratories to study the surrounding reality, the formation of skills and skills development, to demonstrate their development and evaluation using artificial intelligence, etc. These technologies are widely used for virtual travel, learning about other cultures and are used in foreign language learning. They facilitate and simplify the joint activities of people who are at a distance. For example, virtual reality allows you to hold video conferences, create joint projects [12].

Educational accessibility includes the creation of equal opportunities and free access to education, including lifelong learning, as well as the acquisition of another profession, professional development and the acquisition of additional competencies. The strategic goals of this area are the possibility for adults, youth and children to use all types and forms of education; meeting the special educational needs of all participants in the educational process; creating an inclusive educational environment [3].

In terms of distance learning, the availability of educational content is more obvious, eliminating architectural and physical barriers, which is a significant advantage [13]. Given the social transformations, the digital educational environment is rapidly evolving, which must be permeated with an inclusive component.

The benefits of a digital inclusive educational environment are: for students – expanding the possibilities of forming an individual learning trajectory; access to modern educational resources; opportunity for socio-cultural rehabilitation through virtual visits to museums, theaters, various exhibitions and events; for parents – increasing the level of transparency of the educational process and increasing opportunities for communication with all participants in the educational process; for teachers – expanding new opportunities for organizing the educational process.

The most widely used distance learning platform in higher education institutions is the Information and educational environment for full-time and part-time (distance) students – Moodle, the most popular video conferencing platforms are Zoom, Microsoft Teams. Google Forms and survey formats offered by social media are also used. The advantage of Google Forms is their free access, simplicity and ability to get fast basic statistical information processing. This promptness can be quite important if you need to obtain information for further management decisions.

Assistive technologies and assistive software are important for digital accessibility of education, the potential of which is still poorly developed and used in inclusive higher education. For applicants with musculoskeletal disorders (impaired motor function of the hands) it is the use of alternative equipment for entering information and controlling a computer, such as a joystick, roller, remote mouse buttons, main or foot computer mouse, an adapted keyboard, an i-tracker, a touch monitor, etc. others that facilitate and speed up information input (virtual keyboard, keyboard shortcut, voice typing, etc.). For visually impaired applicants, it is important to use means to enhance residual vision and means of converting visual information into audio and tactile signals (Braille display, typhlocomputer, etc.): for the visually impaired – use special features, increase screen expansion, high contrast mode, color change and a mouse pointer, magnifier, screen announcer, as well as screen magnification programs, speech synthesis, convectors of textual information in audio files, etc.; for the blind – the use of on-screen access software (such as JAWS or NVDA) that allows them to work on a computer without the use of sight, displaying all necessary information audibly or tactilely in Braille display, optical character recognition programs, speech synthesis programs. Applicants with hearing impairments need to use speech recognition technologies, including the automatic creation of subtitles for audio and video materials [14].

The educational opportunities of the YouTube service in the context of inclusive education were described by T. Bondarenko. These are, first of all, videos with typhlo (audio) commentary. The YouTube network service, through the use of such a tool as subtitles, can help improve the understanding of educational videos, expand literacy skills, maintain the concentration of students with special needs. A typical educational video with subtitles improves vocabulary, positively influences comprehension, word recognition, decoding skills, provides motivation for learning and eliminates the manifestation of anxiety, for example, due to not knowing a foreign language, because the software application can translate the proposed subtitles into the native language [15].

According to the same researcher, the main advantages of social networks during educational activities are:

- i) setting remote tasks and their implementation;
- ii) opportunity to work in a group with peers;
- iii) constant interaction, communication of participants of educational activity at a convenient time;
- iv) availability of own work schedule;
- v) qualitative level of control of educational achievements.

In addition to social networks and messengers, e-mail is used to support special educational needs. As a useful and interactive communication device, it provides:

- i) support for long dialogues (for example, during the school year);
- ii) group mailing;

iii) transmission of large amounts of data (text documents, audio and video content, graphics, archives, etc.) [15].

To achieve the strategic goal “Meeting the special educational needs of all participants in the educational process”, the following tasks have been identified: conducting competitions for projects on the development of educational cultural products on the culture of acceptance, including those working with the entertainment sector and the cultural sphere; development of information campaigns to promote the ideas of accessibility, the need for its implementation, ongoing training programs, seminars for all involved in this process, from parents, teachers, politicians, heads of institutions to children, pupils, students; encouraging the organization and holding of educational lectures for pupils / students on the value of barrier-free and social inclusion of all in the community [3].

In this direction, it seems appropriate to hold competitions among pupils and students to develop routes for inclusive tourism. A striking example of such events is the holding of the student competition of social projects “Traveling without barriers” on the basis of the Faculty of Social and Psychological Education of Pavlo Tychyna Uman State Pedagogical University. The topics of projects proposed by students can be conditionally divided into areas: inclusive tourism abroad (the main purpose of this area of work is to study the experience of foreign countries, to determine the basic concepts of creating architectural accessibility and society “for everyone”. Examples of such projects are: Inclusive Tourism in Spain, Inclusive Tourism in Ljubljana); inclusive tourism in the sights of Ukraine (development of inclusive tourism routes aimed at rehabilitation of people with disabilities, which will promote acquaintance with cultural traditions of Ukrainians, expand worldview, harmonize the internal state and self-realization through such forms of work as quests, trainings, excursions, art rehabilitation, master classes, social and psychological trainings, etc.). The uniqueness of this competition is that students with disabilities also take part in the project’s development and defense. This confirms that inclusive tourism is not only an interesting and meaningful pastime for people with disabilities, but also a significant independent research work, and cognitive activity. At the same time, organized educational routes of inclusive tourism have an important educational content, within which a tolerant and humane attitude of pupils and students to otherness will be formed, and which is the most important – motivation to create conditions for full participation of people with disabilities in all spheres of life [16]–[17].

The target indicators for the strategic goal “Possibility for adults, youth and children to use all types and forms of education” and for the strategic goal “Meeting the special educational needs of all participants in the educational process” are: the number of people with special educational needs who are in training in inclusive classes (groups) has

increased by 10 percent annually; the share of students with special educational needs proportionally corresponds to the share of target groups in society; the functioning of the system of support centers for students / youth centers on the basis of all institutions of higher, professional higher, professional (vocational) education has been arranged [3].

Among the challenges of today, the problem of ensuring equal rights and opportunities for people with disabilities in all spheres of life deserves attention. The priority for the Faculty of Social and Psychological Education of Pavlo Tychyna Uman State Pedagogical University is to create conditions and develop effective technologies for educating young people with special educational needs, taking into account individual needs, opportunities, abilities and interests, for successful socialization and self-realization.

In particular the members of the Center for Social and Educational Integration and Inclusive Rehabilitation and Social Tourism in “Bez barrieriv” (“Without barriers”) are working on the development of this issue [18].

The purpose of the Center is to consolidate the efforts of relevant structural units of the University, involved executive bodies and public organizations aimed at socio-pedagogical and psychological support of people with special educational needs to adapt to the student and teaching staff and integration into educational and social environment.

The problem of social and psychological rehabilitation of students with disabilities is the subject of research of the Center, and in this aspect from 1 January 2020, young university researchers began to develop a research topic funded by the Ministry of Education and Science of Ukraine: “Social and psychological rehabilitation of children and young people with special educational needs through inclusive tourism” (State registration number: 0119U103978). Direction of funding: fundamental studies. The purpose of the research is to develop and test the system of social and psychological rehabilitation of children and youth with special educational needs through inclusive tourism. Deadlines: 2020–2022.

Within the framework of the state budgetary theme, together with the Department of Education and the Inclusive Resource Center of the Uman City Council, the project “Social Inclusion of the Distance Education Process” was implemented.

The study was joined by secondary schools of Haivoron and Mankiv districts, as well as inclusive resource centers (IRC) of Odessa, Mykolaiv, and Kyiv regions. The work was performed in several stages: development of questionnaires for all participants in the educational process (students, teachers, parents, social educators and practical

psychologists, specialists of inclusive resource centers); conducting a survey using Google applications (about 1,000 students, 2,000 parents, 500 teachers, 100 social educators and practical psychologists took part in the survey); analysis and interpretation of questionnaires to identify the main difficulties in the organization of distance learning and psycho-emotional state in conditions of quarantine restrictions; development of methodical recommendations on the basis of the received interrogation results [19].

Recommendations are designed for all participants in the educational process:

- i) for elementary school students and their parents for having fun together (unusual ways of drawing, educational games, bases of science, handicrafts);
- ii) for standard-type students and students with special educational needs (grades 5–11). Recommendations are divided into the main areas of life of students: education, living conditions, family, friendship, recreation and self-improvement, health;
- iii) for parents on distance learning with respect to health. In order to use the rich pedagogical heritage, there are “Commandments of Vasyl Sukhomlynskyi’s family upbringing” and “10 commandments of Janusz Korczak for parents”;
- iv) for teachers on the educational process in three areas (educational, psycho-emotional and technical) for primary, secondary and high school respectively. Given the requirements of today, there are recommendations for teachers in the quarantine period, working with children with special educational needs, as well as for the prevention of emotional burnout of teachers in inclusive education;
- v) for practical psychologists and social educators to provide psychological assistance in the situation of quarantine and self-isolation, as well as to maintain mental health in conditions of social isolation and prevention of burnout.

At the same time, the publications contain recommendations for students on the prevention of computer vision syndrome; tips for students, teachers and parents on cybersecurity, modern approaches to career guidance, and physical support during quarantine.

Implementation of such a project by research and teaching staff of Pavlo Tychyna Uman State Pedagogical University and the staff of the Department of Education of Uman City Council ensured the implementation of the principle of communication theory and practice in developing general recommendations for distance learning in a pandemic, psychological support and socio-pedagogical patronage of all participants.

4. Conclusion

Thus, information, digital and educational accessibility for higher education seekers with disabilities in distance learning is regulated by both international and Ukrainian regulations. Within the framework of information accessibility in the HEI, the access to information in various formats and using technologies should be provided; the best practice is Pavlo Tychyna Uman State Pedagogical University project “Learning to Hear Together and Overcome Social Isolation” with financial support from the British Council in Ukraine. Within the framework of digital accessibility, the official websites of the HEI must be adapted to world standards; the best practice of Pavlo Tychyna Uman State Pedagogical University is the project “Cultural, Recreational and Tourist Cherkasy Region: Inclusive Social 3D Map” funded by the Ukrainian Cultural Foundation. Educational barrierlessness is achieved by increasing the number of people with special educational needs who receive education in inclusive groups, etc.

Promising areas of research are the development of a program of measures for applicants for higher education in cybersecurity and the formation of motivation for self-education in distance learning, as well as substantiation of criteria for evaluating the achievements of participants in the educational process.

Acknowledgement

The publication was publicly funded by Ministry of Education and Science of Ukraine for developing of research project “Social and psychological rehabilitation of children and young people with special educational needs through inclusive tourism” (State Reg. No. 0119U103978).

References

- [1] V. H. Kremin (ed.) et al. *Encyclopedia of Education* (in Ukrainian), 2nd edition. Kyiv: Yurinkom Inter, 2021.
- [2] L. Koval. “Human rights: discrimination and tolerance,” *Uriadovyi kurier*, no. 76(6944), pp. 1–2, 2021.
- [3] Cabinet of Ministers of Ukraine. (2021, April 14). Order no. 366-r, On approval of the National Strategy for the creation of barrier-free space in Ukraine (in Ukrainian). [Online]. Available: zakon.rada.gov.ua/laws/show/366-2021-%D1%80#Text
- [4] Ministry of Education and Science of Ukraine. *Strategy for the development of higher education in Ukraine 2021–2031* (in Ukrainian). Kyiv, 2020. [Online]. Available: https://mon.gov.ua/storage/app/media/rizne/2020/09/25/rozv_itzku-vishchoi-osviti-v-ukraini-02-10-2020.pdf
- [5] D. Krugliy. “Principles of teaching materials for distance education platforms,” (in Ukrainian), *Social work and education*, vol. 7, no. 4, pp. 514–523, 2020, doi: 10.25128/2520-6230.20.4.8

- [6] V. Omelyanenko, O. Braslavskaya, N. Biloshkurska, M. Biloshkurskyi, N. Kliassen, and O. Omelyanenko. "C-engineering based Industry 4.0 innovation networks sustainable development," *International Journal of Computer Science and Network Security*, vol. 21, no. 9, pp. 267–274, Sep. 2021, doi: 10.22937/IJCSNS.2021.21.9.35
- [7] O. V. Braslavskaya, O. H. Penkova, I. I. Plets, T. Y. Sus, N. V. Biloshkurska, and M. V. Biloshkurskyi, "Management of the higher education institutions innovative potential: Formalization and evaluation," *Revista Inclusiones*, vol. 7, no. 4, pp. 624–645, July 2020. [Online]. Available: <https://revistainclusiones.org/index.php/inclu/article/view/1575>
- [8] Faculty of Social Work and Psychological Education. (2021, May 26). Project "Learning to hear and overcome social isolation together" (in Ukrainian). [Online]. Available: <http://surl.li/chtav>
- [9] Cabinet of Ministers of Ukraine. (2021, April 14). Resolution no. 537, On approval of the Procedure for monitoring and assessing the degree of barrier-free facilities of physical environment and services for people with disabilities (in Ukrainian). [Online]. Available: zakon.rada.gov.ua/laws/show/537-2021-%D0%BF#Text
- [10] O. A. Chaikovska, M. S. Tolmach, and I. O. Zakalov. "Creating a barrier-free space in Ukraine: Universal design and web accessibility," in *Information Technologies in the Socio-Cultural Sphere, Education and Economics: Materials of the V International Scientific-Practical Conference of Students and Young Scientists, Kyiv, April 21–22, 2021*, pp. 197–200, Kyiv: KNUCA Publishing Centre.
- [11] Faculty of Social Work and Psychological Education. Cultural, recreational and tourist Cherkasy region: Inclusive social 3D Map. [Online]. Available: <https://fspo.udpu.edu.ua/inklyuzyvno-sotsial%CA%B9na-3D-karta/#/>
- [12] I. Shyshenko, and I. Kharchenko. "Theoretical aspects of digital transformation of professional training of future specialists," *Scientific Bulletin of Uzhhorod University. Series: "Pedagogy. Social work"*, no. 2(49), pp. 241–244, 2021, doi: 10.24144/2524-0609.2021.49.241-244
- [13] I. Romanchenko, A. Prokopenko, I. Zaichko, L. Prokopenko, P. Rybalko, S. Bobrovytska, and O. Kyselyova, "Methods of introducing information technologies into the educational process of higher education institutions of Ukraine," *International Journal of Computer Science and Network Security*, vol. 21, no. 5, pp. 16–22, May 2021, doi: 10.22937/IJCSNS.2021.21.5.3
- [14] D. F. Romanenkova. "The main approaches to ensuring the availability of inclusive higher education by means of distance technologies," *Bulletin of the Chelyabinsk State University. Education and healthcare*, no. 1(13), pp. 27–32, 2021.
- [15] T. V. Bondarenko. "Using information and communication technologies for providing accessibility and development of inclusive education," *Information Technologies and Learning Tools*, vol. 67, no. 5, pp. 31–43, 2018, doi: 10.33407/itlt.v67i5.2241
- [16] O. O. Kravchenko, Yu. Yu. Pesotska. "From the experience of implementing inclusive tourism among student youth," *Collection of Scientific Papers of Uman State Pedagogical University*, no. 2, pp. 44–50, 2021, doi: 10.31499/2307-4906.2.2021.236632
- [17] O. Kravchenko, P. Oksom, A. Voitovska, and I. Albul. "Gender socialization of students with disabilities: Ukrainian practices," *Amazonia Investiga*, vol. 9, no. 27, pp. 260–267, Mar. 2020, doi: 10.34069/AI/2020.27.03.28
- [18] Faculty of Social Work and Psychological Education. Centre for Social and Educational Integration and Inclusive Rehabilitation and Social Tourism in "Bez barrieriv" ("Without barriers") of Pavlo Tychyna Uman State Pedagogical University. [Online]. Available: <http://surl.li/plqg>
- [19] O. O. Kravchenko, M. S. Mishchenko, and I. H. Reznichenko. *Social inclusion of distance educational process*. Kyiv: Komprint, 2021.

Oksana Kravchenko

Doctor of Sciences (Pedagogy), Professor at the Department of Social Education and Social Work. Dean of the Faculty of Social Work and Psychological Education. Pavlo Tychyna Uman State Pedagogical University, 2 Sadova Street, Uman, Cherkasy Region, 20300, Ukraine. E-mail: oksolkravchenko@ukr.net
ORCID ID: [0000-0002-9732-6546](https://orcid.org/0000-0002-9732-6546)

Natalia Koliada

Doctor of Sciences (Pedagogy), Professor at the Department of Social Education and Social Work. Faculty of Social Work and Psychological Education. Pavlo Tychyna Uman State Pedagogical University, 2 Sadova Street, Uman, Cherkasy Region, 20300, Ukraine. E-mail: Koliada_n@ukr.net
ORCID ID: [0000-0003-3623-6552](https://orcid.org/0000-0003-3623-6552)

Larysa Berezivska

Doctor of Sciences (Pedagogy), Professor, Corresponding Member of the National Academy of Science of Ukraine. Director of V. O. Sukhomlynskyi State Scientific and Pedagogical Library of Ukraine. V. O. Sukhomlynskyi State Scientific and Pedagogical Library of Ukraine, 9 M. Berlynskoho Street, Kyiv, 04060, Ukraine. E-mail: lberezivska@ukr.net
ORCID ID: [0000-0002-5068-5234](https://orcid.org/0000-0002-5068-5234)

Svitlana Dikhtyarenko

Ph.D. (Psychology), Associate Professor at the Department of Psychology. Faculty of Social Work and Psychological Education. Pavlo Tychyna Uman State Pedagogical University, 2 Sadova Street, Uman, Cherkasy Region, 20300, Ukraine. E-mail: sadova32bb@gmail.com
ORCID ID: [0000-0003-4506-1221](https://orcid.org/0000-0003-4506-1221)

Svitlana Baida

Ph.D. (Psychology), Associate Professor at the Department of Psychology. Faculty of Social Work and Psychological Education.

Pavlo Tychyna Uman State Pedagogical University, 2 Sadova Street, Uman, Cherkasy Region, 20300, Ukraine.

E-mail: cbajda2017@gmail.com

ORCID ID: [0000-0002-7807-1234](https://orcid.org/0000-0002-7807-1234)

Larysa Danylevych

Ph.D. (Psychology), Associate Professor at the Department of Psychology. Faculty of Social Work and Psychological Education.

Pavlo Tychyna Uman State Pedagogical University, 2 Sadova Street, Uman, Cherkasy Region, 20300, Ukraine.

E-mail: lar62ko@gmail.com

ORCID ID: [0000-0002-2321-4285](https://orcid.org/0000-0002-2321-4285)