

Information and Library Support for Education in the Context of its Digitalization

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Abstract. In the process of innovative development of education, an important factor in its modernization is information and library support, which we consider as a purposeful activity to create digital information resources and provide access to them based on the widespread use of the latest ICTs to meet the information needs of users – applicants for education, pedagogical, scientific, scientific and pedagogical workers. The article establishes that in the information and library support of education in Ukraine, the leading role belongs to the network of educational libraries (over 15 thousand libraries), headed by the V. Sukhomlynskyi State Scientific Educational Library of Ukraine of National Academy of Educational Sciences of Ukraine (hereinafter – SSPL). Scientific achievements in the creation of an industry information resource are argued; development and implementation of a system of scientific and information support for education and science in Ukraine; scientific, methodological and informational support for the activities of educational libraries for their adaptation to modern requirements, etc. The practical results of information and library support for education are: provision of various information services to remote users, access to domestic and foreign resources through the SSPL web portal and the websites of the network libraries; creation of 26 electronic libraries in leading educational libraries; development of a system of scientific, informational, cultural and educational events in an online format. The most popular digital resources and services of the SSPL are: databases of an electronic catalogue, digital content of a collection of rare publications, a scientific and pedagogical electronic library, a virtual information and bibliographic resource “Outstanding Pedagogues of Ukraine and the World”, online projects, virtual reading rooms, and the like. To improve the system of information and library support for the innovative development of education, it is necessary to focus on solving the following tasks: the introduction of modern information and computer technologies (hereinafter – ICT) into production processes and service of users, primarily remote users; development of information potential of web portals and sites of educational libraries; improvement of integration processes in the formation of an industry information resource; development of international cooperation.

INTRODUCTION

A global trend is digitalization of libraries, the provision of open access to printed and electronic documents, the formation of modern information resources, the optimization of traditional methods of working with information in the library environment and their adjustment with other methods of organizing information in the electronic space, the introduction of new forms of work with a focus on the remote user, which change the qualitative essence of the traditional library and create capacities for timely and full-fledged information and library support for the professional needs of teachers and scientists. The priority and importance of information and computer technologies (hereinafter – ICT) is enshrined in the regulatory and constituent documents of the EU member states, the Council of Europe. Scientists Brett D. Hirsch [1], V. Bykov, M. Leshchenko [2] and others testify to the separation of a new scientific field from pedagogy – digital humanities pedagogy. “In a broad sense, humanistic digital pedagogy is the science of

the laws of transmission and perception of educational experience, which takes place in physical and virtual realities based on the use of ICT, in particular digital technologies in open education systems” [2].

RESEARCH PROBLEM

In the process of innovative development of education, information and library support is an important factor in its modernization, which we consider as a purposeful activity to create digital information resources and provide access to them based on the widespread use of the latest ICTs to meet the information needs of users – applicants for education, pedagogical, scientific, scientific and pedagogical workers. Information and library support of education in Ukraine is carried out by a network of educational libraries headed by the V. O. Sukhomlynskyi State Scientific and Pedagogical Library of Ukraine of National Academy of Educational Sciences of Ukraine. The branch network of libraries unites more than 15 thousand educational libraries that have a common goal, objectives and is a holistically structured macrosystem. The main goal of this library network is the creation of conditions for high-quality information support for the professional needs of scientists and teachers, the formation and disclosure of information resources of libraries as a component of the scientific and information infrastructure of the education sector in Ukraine.

APPROACH

The purpose of our study is to reveal the features, significance and prospects of information and library support for education in Ukraine in the context of its digitalization, which involves solving the following tasks: to highlight the scientific and practical results of information and library activities of educational libraries; to argue the leading role of SSPL in the implementation of information support for education. To achieve the intended goal, theoretical and empirical research methods were used: analysis of regulatory documents, highlighting key concepts, studying practical experience; methods of comparative and statistical analysis; historical and systems approaches (analysis and modeling).

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

In the process of analysing literary sources, we found works devoted to the study of information and communication technologies in the library field:

– To Lee E. Allen and Deborah M. Taylor investigated the impact of ICT use on mobile technology and e-learning in academic libraries and the important role of the information specialist in this process [3].

– Researchers from the UK E. Tait, K. Martzoukou and P. Reid evaluated the role of IT utilities in transforming academic library services [4].

– New smart technologies in smart libraries and their impact on library performance in terms of users, services and technology integration are highlighted in the work of S. Gul and Sh. Bano [5].

– The main trends in the evolution of the Ukrainian information environment, associated with the improvement of the process of effective use in information exchanges of media resources, products of modern social networks, scientific periodicals, archival and book heritage, integration of modern libraries into this environment, are studied in the collective monograph by A. Onishchenko, V. Gorovoy, L. Dubrovina, V. Popik, L. Kostenko and other scientists [6].

– The issues of formation, compilation and management of library information resources were worked out in detail by K. Lobuzinoy [7].

– Domestic library researchers prove the need to introduce new digital services to support science in libraries of higher educational institutions of Ukraine and scientific institutions A. Rzhеuskiy [8], A. Polyakova and A. Sokur [9], L. Trachuk [10] and others. In the collective monographs and practical manuals of the scientists of the SSPL, various aspects of the organization and methods of creating web-oriented library and information resources for the education sector of Ukraine were highlighted.

– Theoretical and practical issues of scientific and analytical support of educational activities and the creation of secondary review analytical documents in paper and electronic form were developed in the works of A. Seletskyi [11] and others.

– Comprehensively analyzed and highlighted the importance of the industry web portal for the implementation of scientific research on education, pedagogy, psychology L. Berezivska, A. Pinchuk and N. Varaksina [12].

–The publications of S. Kovalenko are devoted to the formation of the electronic catalog [13]; scientific and pedagogical electronic library – N. Varaksina [14]; the formation of consolidated databases – N. Zorina and S. Kovalenko [15]; creation of electronic bibliographic resources – L. Ponomarenko [16].

– The knowledge base visualization technology in education is presented in the work of A. Guraliuk, M. Rostoka, G. Cherevychnyi, T. Bondarenko, O. Kuzmenko, D. Zakatnov, L. Petryshyn, T. Pavlysh [17, 18].

STATEMENT OF BASIC MATERIAL AND THE SUBSTANTIATION OF THE OBTAINED RESULTS

Over the years of independence, in the context of the development of a knowledge society, digitalization of all spheres of life, education reform, Ukraine's integration into the European educational and research space, there have been positive shifts in the information and library provision of education and science. At the same time, new challenges arose before educational libraries: a threat to national security in the context of Russia's information and military aggression, the global COVID 19 pandemic, etc. This has influenced the definition of new vectors for the development of libraries, the review of the conceptual provisions of the interaction of scientific and information activities in research and educational spheres.

Taking this into account, the research staff of the SSPL carried out a number of complex scientific studies of an interdisciplinary nature, the relevance of which is due to the need to provide information support for the processes of reforming, modernizing and improving the quality of education in Ukraine; search for innovative approaches to the formation of industry library and information resources and ways of providing access to them; improving the system of scientific and informational support of the education sector. First of all, theoretical and methodological, organizational foundations have been developed and a model of the system of scientific information support has been created, consisting of three directions – bibliographic, abstract and information and analytical.

The obtained scientific results allowed, at the theoretical and methodological level, to expand the existing capabilities of educational libraries of information and library support for education, created the basis for further work on the development and deepening of the organizational, theoretical, methodological and technological foundations for the formation of library and information resources for the education sector in Ukraine and scientific methodological support for educational library networks. The understanding of the content of information activities of the sectoral library and information complex has increased, which contributed to the identification of promising directions for the development of information activities in accordance with the modernization model (technological, social, institutional modernization) and the modern needs of the educational sphere.

The development of information technologies and changes in the priorities of information needs of users induce educational libraries to generate their own industry resources, modernize the forms of scientific and informational activities. On their sites, remote users can get free access to electronic catalogues, electronic libraries and depositories, bibliographic and factual databases, virtual book exhibitions, full-text documents, seminar materials, competitions, photo and video materials, and so on. Information and library support for education is provided by 26 electronic libraries, a system of scientific information, cultural and educational events in an online format (conferences, seminars, webinars, virtual exhibitions, etc.). Monitoring of the activities of the leading educational libraries showed that the electronic catalogue is placed on the sites (pages) of forty-one libraries [19].

The introduction of ICT has led to an increase in the number of remote users and virtual visits to libraries. Statistics show that virtual visits (more than 1 `300`000`000) are almost 8 times more than traditional ones (more than 167 million) [20]. In particular, the SSPL web portal (<http://dnpb.gov.ua/ua/>), updated in 2016, as a weboriented technological platform, also accessible from mobile devices, informs about all areas of the institution's activities, presents its resources, innovative services, leads to an increase in the efficiency and quality of scientific and informational support of the education sector and its scientific and methodological support. The dynamics of visits to the web portal is shown in Figure 1.

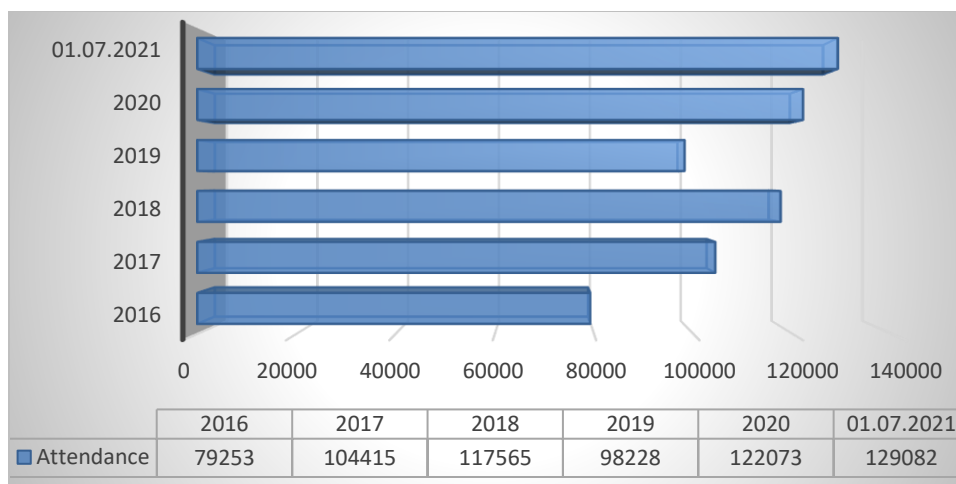


FIGURE 1. Attendance of the SSPL Web Portal.

The most popular digital resources and services of the SSPL are: databases of an electronic catalog, digital content of a collection of rare publications, a scientific and pedagogical electronic library, a virtual information and bibliographic resource “Outstanding Teachers of Ukraine and the World”, online projects, virtual reading rooms, and so on. All this creates opportunities for prompt satisfaction of various information needs of remote users.

Today, the electronic catalog of the SSPL, which has been available to a remote user through the library's web portal since 2007, has more than 440 thousand entries (these are books, dissertations, abstracts, articles from periodicals). Abstract and consolidated databases of dissertations, collections of scientific papers and bibliographic publications are formed on the basis of innovative principles of cooperation and coordination by exchanging analytical bibliographic records from periodicals in the field of education, library science, bibliography and bibliology by educational libraries of the Ministry of Education and Science of Ukraine and the National Academy of Educational Sciences of Ukraine.

An important component of the SSPL fund is a collection of rare and valuable publications (more than 28 thousand documents) – documents of psychological, pedagogical and historical-cultural trends of the 17th – early 20th centuries, formed in the collection: “Pedagogy” (works of Ukrainian teachers and educators, scientists, cultures of the XIX-XX centuries) “Psychology” (works of domestic and foreign psychologists of the 18th – early XX centuries) “School Textbooks and teaching aids” (textbooks and teaching manuals for various types of domestic educational institutions of the specified historical period); “Periodicals of the 19th – early 20th centuries”; “Editions in Foreign Languages of the 17th – early 20th centuries.” (Rare publications in different languages from different fields of knowledge, among which the largest number are publications on pedagogy and psychology in German). According to the decree of the Cabinet of Ministers of Ukraine dated December 19, 2001 No. 1709, rare editions of 1850–1917 belong to the national cultural heritage of Ukraine.

In order to systematize rare editions and provide users, in particular remotely, with quick and unlimited access to sources, the library specialists have carried out significant work on the formation of electronic resources. In particular, the database “Rare Books” of the electronic catalog of the library was created and more than 11 thousand records were entered into it; in the scientific and pedagogical electronic library, a section “Book Leaflets” has been formed, where more than 1300 full-text documents (scanned copies) are placed. A tool instrument for ensuring access to socially significant information (primarily of a scientific, educational and cultural nature) is a scientific and pedagogical electronic library (hereinafter – SPEL).

The intended for use SPEL fund consists of 3 thematic areas: education and pedagogical sciences, psychology, librarianship, within which such collections are formed in many languages of the world: Sukhomlinistik (works by V. O. Sukhomlynskyi and literature about him); book leaflets, in particular books and periodicals before 1917, containing documents of the industry direction of the psychological and pedagogical profile; SSPL products (instructive, normative and methodological materials, indexes, scientific papers, individual articles); scientific products of employees of scientific institutions of the National Academy of Educational Sciences of Ukraine; products of the leading libraries of the network of educational libraries of the Ministry of Education and Science of Ukraine and the National Academy of Educational Sciences of Ukraine (indexes, scientific works, individual articles) [23].

SSPL plays a leading role in the integration and dissemination of pedagogical biographical knowledge. Since 2008, an electronic information and bibliographic resource “Outstanding Teachers of Ukraine and the World” (<https://dnpb.gov.ua/en/outstanding-teachers/>) has been created, the purpose of which is to popularize the best achievements of domestic and foreign pedagogical and psychological sciences and education by consolidating information about outstanding personalities [24].

The resource provides information on the following structure: biography of the personality; bibliography of his works and materials about him; separate full-text works; additional materials, in particular a photo gallery; information disclosing the activities of the institution that bears his name (if any); About awards, prizes, monuments, scientific readings associated with the name of an outstanding personality, etc [25]. Now the specified resource, which is systematically supplemented and updated, contains information about 70 persons in Ukrainian and English. Today it is one of the most popular and demanded resources of SSPL, which is confirmed by the relevant statistical data (Figure 2).

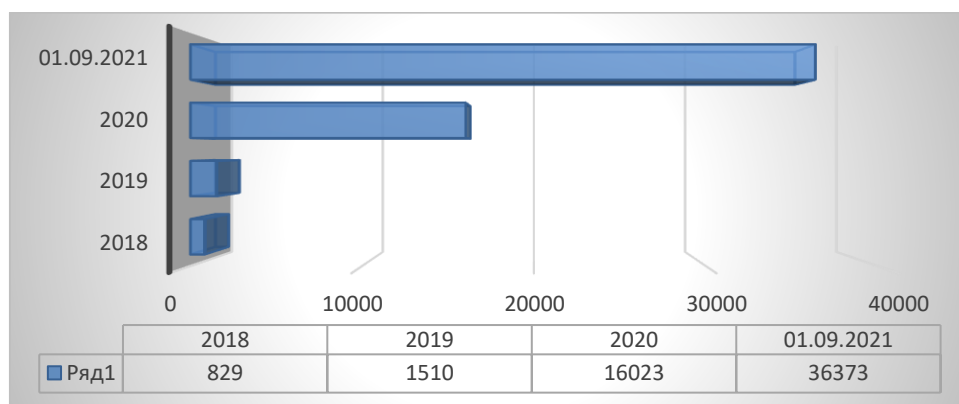


FIGURE 2. Attendance of the Information and Bibliographic Resource “Outstanding Teachers of Ukraine and the World”.

SSPL Modern social challenges, in particular the COVID-19 pandemic, the widespread introduction of remote forms of work, the global Internetization of society, the great popularity of social networks have strengthened the focus on the remote user and contributed to the creation of new virtual resources. During 2020-2021 Specialists of the SSPL of Ukraine is implementing six online projects through Facebook: “We Stand on the Shoulders of our Predecessors: Outstanding Teachers of the Anniversary”, “We Read Sukhomlynskyi Online”, “Aphorisms of Sukhomlynskyi”, Tales of V. O. Sukhomlynskyi in Textbooks and Y. Savchenko's Manuals”, “Sukhomlynskyi News”, “Calendar of Observances in the Field of Education”. All these online projects aim to expand the information and library provision of education through the presentation of information about outstanding events and facts in the field of education, life and work of famous teachers and educational figures through the use of modern and popular ICT. It should be noted that online projects are very popular among Facebook users, including scientific and scientific pedagogical workers, teachers, education seekers, as evidenced by numerous views, comments and discussions.

To provide scientists and educators remote access to information resources, to quickly and promptly satisfy their requests, at the beginning of 2021, specialists from the SSPL created and presented on the institution's web portal a virtual reading room of the V. O. Sukhomlynskyi Fund, a teacher's virtual reading room and a virtual museum-room of rare book. The virtual reading room the V. O. Sukhomlynskyi Fund (<https://dnpb.gov.ua/ua/virtualni-chyitalnizaly/virtualnyy-chyitalnyy-zal-fondu-vo-sukhomlynskoho/>) offers users information about the life and work of an outstanding domestic humanist teacher V. O. Sukhomlynskyi, well-known in Ukraine and abroad; the activities of the library for the development of Sukhomlynistik in the educational and scientific space, and so on. The materials are systematized according to the following headings: “Video Presentation of the Reading Room; V. O. Sukhomlynsky's Page in the Section “About the Library” page “V. O. Sukhomlynskyi” as a component of an information and bibliographic resource; “Outstanding Teachers of Ukraine and the World”; database “Sukhomlynistik” (bibliographic records and full-text documents); activity; virtual book exhibitions; virtual projects; video materials. Virtual reading room of the V. O. Sukhomlynskyi Fund is a complex information resource that allows scientists and teachers who study and implement the ideas of an outstanding teacher to satisfy information needs in a remote work mode, which is very important now.

The purpose of the virtual reading room for an educator (<https://dnpb.gov.ua/ua/virtualni-chyitalnizaly/virtualnyy-chyitalnyy-zal-osvityanyia/>) is to provide information and library support for the educational process in the context of remote learning and digitalization of education ... The structure of the reading room is designed in accordance with the links of the education system in Ukraine: preschool education, complete general secondary education, out-of-school education, special education, vocational (vocational and technical education), vocational higher education, higher education, adult education, including postgraduate education. Each section contains materials that may be useful to teachers in their work, in particular: legal framework, educational, methodological and reference materials, periodicals, useful links, etc. (Figure 3). The virtual reading room of an educator contributes to the operational search for information necessary for the pedagogical process.

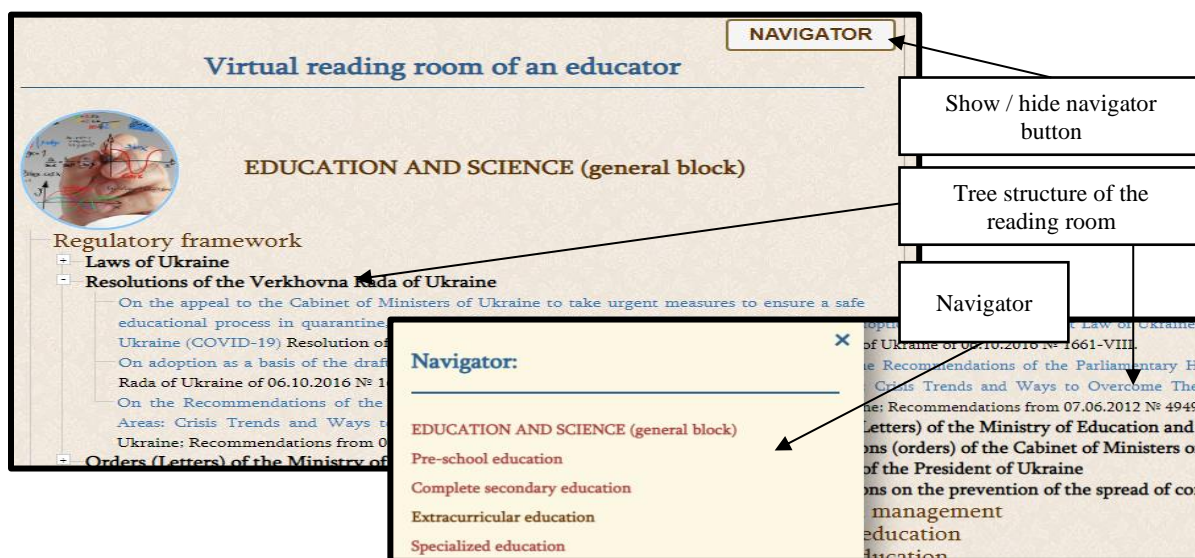


FIGURE 3. The Virtual Reading Room of an Educator, from site dnpb.gov.ua

Since 2016, for the study and popularization of rare publications from the fund of the SSPL of Ukraine named after V. O. Sukhomlynsky's room-museum of rare books functions as a creative laboratory, where cultural, educational and exhibition and exposition work is carried out. Taking into account the challenges of the time, a virtual room-museum of a rare book was created on its basis (<https://dnpb.gov.ua/ua/virtualni-chyitalnizaly/virtualna-kimnata-muzej-ridkisnoyi-knyhy/>) in order to familiarize remote users with rare publications and improving their information support. The virtual room-museum contains information about rare editions, formed into separate collections; the collection "Book Monuments" of the scientific and pedagogical electronic library; virtual exhibitions; a photo of a rare book museum room and so on. This virtual resource will be useful to everyone who is interested in the history of domestic and foreign education, pedagogy, psychology, and the creation of textbook.

CONCLUSION

Thus, in the context of global digitalization, the development of digital pedagogy, modern challenges, in particular the global COVID-19 pandemic, an important factor in the modernization of education is its information and library support. The leading role in this process in Ukraine is played by a network of educational libraries headed by the SSPL. In particular, the results of the research carried out provided the theoretical and methodological foundations for the creation of an industry information resource; scientific and informational support of education and science of Ukraine; scientific, methodological and informational support of educational libraries for their adaptation to modern requirements.

The practical implementation of the research results gave the opportunity to provide remote users with various information services, access to domestic and foreign resources through the SSPL web portal and websites; creation of electronic libraries, various digital resources; scientific, informational and cultural and educational events in an online format in leading educational libraries. At the same time, in order to improve the system of information and library

support for the innovative development of education, it is necessary to focus on solving the following tasks: the introduction of modern ICT into production processes and user service; development of the information potential of web portals and sites of educational libraries; improvement of integration processes in the formation of an industry information resource on various media; providing access to foreign databases; intensification of the creation or build-up of digital resources; study of foreign experience and development of international cooperation.

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