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Open educational resources as an innovative teaching practice in Kazakhstan

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Abstract

The pandemic period has influenced the fact that digital technologies have become social, as there is coverage of users of all levels of social institutions - family, educational organizations, society. The purpose of the article is to present the results of a pedagogical study on the impact of open educational resources on the educational process of a higher Kazakh school. The methodology of the study was the theoretical teachings of D. Atkins, J. Brown and A. Hammond; sociological survey of studying universities operating in Aktobe region of the Republic of Kazakhstan. The results of the study were the results of a sociological study to identify the level of the formed system of ICT competencies, carried out according to the Bocharova S.T. methodology "Tool for assessing the formation of ICT competence of students." The authors analyze the features of social technologies, their influence on the educational process on the example of universities in the Aktobe region.

Keywords: open educational resources, online courses, e-learning, Internet technologies, educational marketing

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1. Introduction

Currently, there is a rapid growth in digital technologies: online communities, social media and other open educational resources (OER). All of them form new requirements for existing social institutions, first of all, for all levels of the education system of the Republic of Kazakhstan.

So, *in preschool education*, digital technologies act as social ones. From the moment of birth, the child comes into contact with information technology – at home, on the street, in the store. Social media helps children to see all the beauty of the world around them, to learn music, works of art, cartoons and fairy tales. However, they also pose a threat to childhood development. When spending a long time at a tablet, phone and computer, the child's psyche becomes dependent, irritable and withdrawn. At this age stage, the attitude of adults to this problem is very important, since sometimes it is convenient for them that the child sits calmly for hours, quietly, without a sign of a loud voice 'I want', 'give', not realising all the tragedies.

At the level of *primary school education*, scientific and methodological literature introduces the term 'digital literacy' of the student. Coming to grade 1, students proudly say that they have new models of phones, tablets and can work on a computer. True, upon further conversation it turns out that all the work is, at best, in mastering individual educational games or watching cartoons and TV series. Therefore, the teacher should familiarise with new opportunities in the educational process of information and communication technologies. The photographs, video clips, models and cartographic materials presented in the lesson in digital form, selected in accordance with the content of the topic or text of the textbook, allow you to show the material in full diversity, through the emotional sphere to convey to the consciousness of each child.

At the level of *basic and general secondary education*, OER are of an applied and social nature: students learn digital tools – electronic textbooks, educational platforms and applications and online services. So, an experienced teacher can set up the educational process so that the student becomes his partner in building projects, research and development.

Markeev (2014), Associate Professor of Lomonosov Moscow State University, highlighted the main tasks of the modern education system, as follows:

- create conditions for expanding the availability of education;
- to develop innovative forms and types of educational practices, allowing them to effectively integrate and implement the principle of continuity;
- to provide conditions for obtaining knowledge, the formation of competencies in the volume, in the form, while it is required by the students. Thus, the tendency of increasing targeting of education should be realised;
- to expand opportunities for the formation of individual educational trajectories within the existing system of higher and secondary vocational education;
- to promote the active development of crowdsourcing in the existing education system, as well as create conditions for the subsequent diffusion of new knowledge.

The solution of these problems also rests not only on innovative educational technologies, but also on social and OER – as an alloy of digital technologies. The concept of 'OER' means 'free provision of educational resources using information and communication technologies for study, use, adaptation by users for non-commercial purposes' (Atkins et al., 2007; Mack Andrew & Cropper, 2011). The main mission of this technology is the availability of quality education at all levels of socialisation of the individual and for any user in the world.

According to an analysis of scientific literature, for the first time they began to talk about OER in 1990. Researchers Atkins et al. (2007) gave a characterisation of this kind of technology: 'OERs are training, educational or scientific resources placed in free access, or issued with a license that allows their free use or processing. RBMs include full courses, training materials, modules, textbooks, videos,

tests, software, as well as any other tools, materials or technologies used to provide access to knowledge' (Kornilov, 2012).

One of the first projects that gave rise to social technology is the Open Course Ware project of the Massachusetts Institute of Technology from 2001. Currently, 200 higher educational institutions offer their online courses for free, over 100 million users around the world (Lapteva, 2014). The Coursera project unites 21,532,448 students from 190 countries of the world provides access to 570 courses, and has 590 global partners (Kiselev, 2012). The edX project brought together more than 35,000 viewers on YouTube in May 2012 (Komleva, 2013).

Kazakh scientist Abykenova (2017), while working on her doctoral dissertation, she conducted research at the Dublin Institute of Technology in the 2015–2016 academic year, allowing studying the experience of implementing e-learning. It should be noted that the government pays great attention to this technology. The most common platforms for the implementation of e-learning in universities in Ireland are WebCT, Blackboard, Moodle and Electronic Grade Book.

In Kazakhstan, the state programme 'Digital Kazakhstan' until 2022 has also been introduced at the management level. There are five key areas of this programme:

1. 'Digitalisation of economic sectors' – transformation of traditional sectors of the economy of the Republic of Kazakhstan using breakthrough technologies and opportunities that will increase labour productivity and lead to an increase in capitalisation.
2. 'Transition to a digital state' – transformation of the state infrastructure to provide services to the population and business, anticipating their needs.
3. 'Implementation of the digital Silk Road' – the development of a high-speed and secure infrastructure for the transmission, storage and processing of data.
4. 'Development of human capital' – transformations covering the creation of a creative society and the transition to new realities – the knowledge of economy.
5. 'Creation of an innovation ecosystem' – creating conditions for the development of technological entrepreneurship with sustainable links between business, the scientific sphere and the state, as well as the introduction of innovations into production (Gosudarstvennaja programma 'Cifrovoj Kazahstan' do 2022goda, 2017).

These directions cover all spheres of life of the Kazakh people. Full implementation requires digital literacy. So, to disclose the full meaning of this term, the programme refers to the Law of the Republic of Kazakhstan 'On Informatization' dated 24 November 2015 No. 418-V, where the concept of 'digital literacy' means '... the knowledge and ability of a person to use information and communication technologies in everyday life and professional activities Digital literacy consists of basic and professional digital skills' (Zakon Respubliki Kazahstan 'Ob informatizacii', 2015).

The development and implementation of this programme in the Republic of Kazakhstan are the following facts indicated in it. The leading countries in digitalising their national economies are China, Singapore, New Zealand, South Korea and Denmark. China, in its Internet Plus programme, integrates digital industries with traditional dissemination of advances in ICT and Denmark focuses on digitalisation of the public sector.

2. Method

The purpose of the article is to present the results of a pedagogical study on the impact of OER on the educational process of a higher Kazakh school.

The research methodology includes a scientific review of initiatives, services, tools of OER in Kazakhstan and abroad, an assessment of the importance of developing OER for universities and individual teachers. Also, theoretical analysis was carried out according to the teachings of Atkins et al. (2007); Open Courseware Massachusetts Institute of Technology project; technical content of Internet

technologies; sociological survey of studying universities operating in Aktobe region of the Republic of Kazakhstan.

3. Results

Despite the above, OER have their advantages and disadvantages can also be identified. The advantages include: distribution of time, openness and accessibility, improvement of language competence, availability of open licenses, university targeting, quality of information provided, no age and territorial restrictions. The disadvantages include the following: virtuality or lack of oral communication, insufficient IT competence, lack of precise strategic plans at the state level in the development and participation in world projects, the level of the Internet and technical capabilities. It should also be agreed that the society of Kazakhstan is not active enough in this direction from the point of view of the available scientific, pedagogical and research potential (Lane, 2010; Martin, 1990).

However, in recent years, there has been a deep interest in the development of this resource, in particular, in the student and pedagogical environment of the university system. Thus, as part of a regional experiment, a survey was conducted among students and teachers of three universities - Aktobe Regional University named after K. Zhubanov, Baishev University and Kazakh-Russian International University. Specialty – ‘Pedagogy and Psychology’, 1–3 courses, 45 students and 154 teachers from each university, a total of 135 students and 45 teachers. The students were offered a Questionnaire to identify the most used resource in their free time from the data presented – Internet/mobile phone, book, cinema visit or walk with a friend (Figures 1–4). The study was based on the methodological development of Bocharova (2016). ‘A tool for assessing the formation of students’ ICT competence’. So, the author presented a system of components of ICT competencies as follows:

- Definition (of information): the ability to correctly formulate a problem in order to purposefully seek and process information.
- Access (to information): the ability to search and find information in various sources.
- Management (of information): the ability to classify or organise information.
- Integration (information): the ability to interpret and restructure information, to isolate the main thing, to compare information from different sources.
- Evaluation (of information): the ability to form an opinion about the quality, relevance, usefulness of information and the sources of its receipt.
- Creation (of information): the ability to create or adapt available information for a specific task.
- Transmission (of information): the ability to tailor information to a specific audience.

Figures 1–4 show the results of a questionnaire survey among students and teachers of the Aktobe Regional University named after K. Zhubanov, Baishev University and the Kazakh-Russian International University, as mentioned above.

The results of this stage of the survey show that student most of all use the Internet for personal purposes (81%), as well as preparing for lectures (68%). A small proportion of students combine study with additional earnings, business development (10%) and the least preference is given to self-development (11.3%). The referees point to the lack of time for self-development, the lack of a sufficient number of information platforms and doubt the effectiveness. For personal purposes, network communities and social networks (Instagram, Telegram, Facebook and V Kontakte) are mainly used. To prepare for classes, electronic libraries and thematic sites are used the most rarely – Wikipedia. In this case, we can talk about the targeting system of educational sites, both from the teacher’s side and from the student’s side. Basically, for the choice of an additional profession or business development, students see distant jobs, online stores and websites of commercial organisations. The results of this diagnosis also indicate that the students of the Aktobe Regional University named after K. Zhubanov have a higher level of development of ICT competencies than the students of Baishev University and the Kazakh-Russian International University.

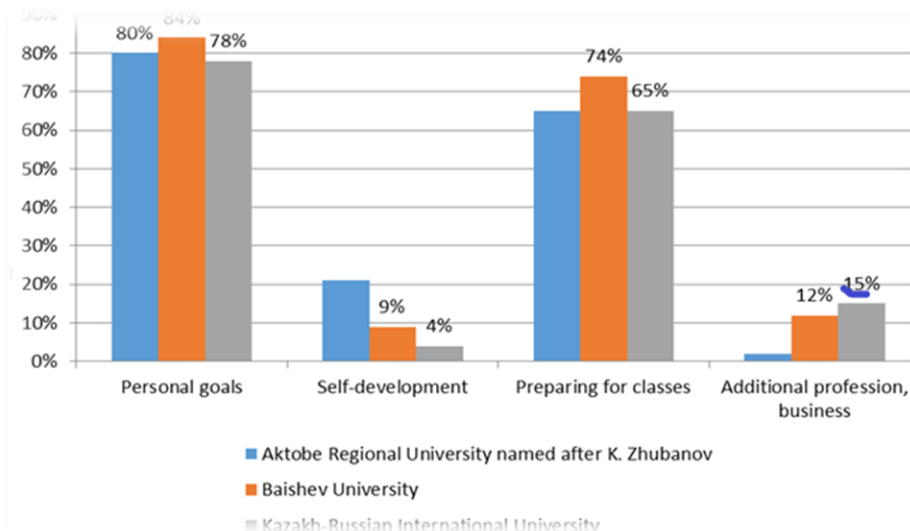


Figure 1. Purpose of using information resources

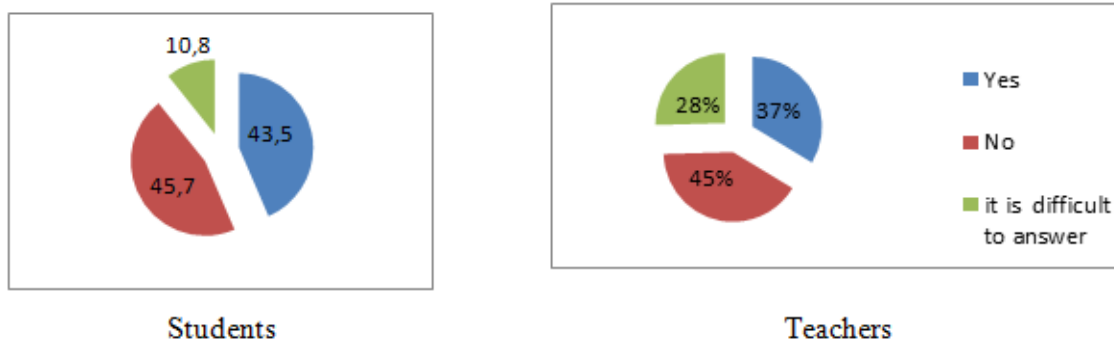


Figure 2. OER awareness

In terms of awareness of OER, students are ahead of teachers (43.5% compared to 37%) by 6.5%. This difference affects the age capabilities of students, their mobility and quick receptivity to novelty. However, 6.5% is a minor difference. This is due to the fact that the educational policy of Kazakhstan puts teachers and students in the position of continuous self-education with the development of ICT competence.

Figure 3 reveals how often and efficiently referents use information resources. In confirming Figure 1, we can observe that the network social communities still dominate over electronic educational platforms. Particular attention should be paid to E-courses, which is currently a problematic link for students.

The analysis of the data obtained in Figure 4 indicates that teachers give preference to official websites – ministerial and university. E-textbooks, E-libraries and social networks were on an equal footing. If the first two resources are aimed at studying and obtaining the necessary information to prepare for lectures and practical exercises, then social networks have now become a reporting platform for their professional activities. Also, little activity can be traced among the teachers of the Aktobe Regional University named after K. Zhubanov in comparison with Baishev University and the Kazakh-Russian International University.

In general, the results of Figures 1–4 show that students and teachers use information technology in work and everyday life, however, OER as professionals are not taken more seriously. So, preference is given to social networks and mainly for personal use. The use of the e-library and e-textbooks and

official sites is connected exclusively with the pedagogical process, where the student and the lecturer are involved. The weak link remains online courses and resources for self-education and forms of open education, since neither the teacher nor the student is yet aware of the sufficient seriousness and opportunities that OER provide.

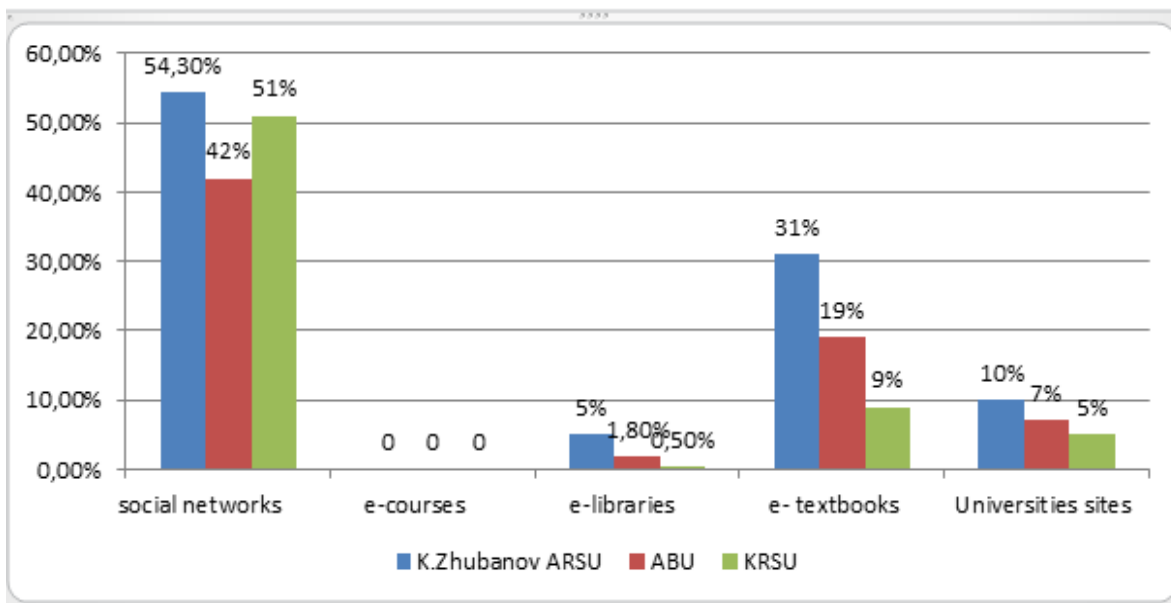


Figure 3. Resources used (students)

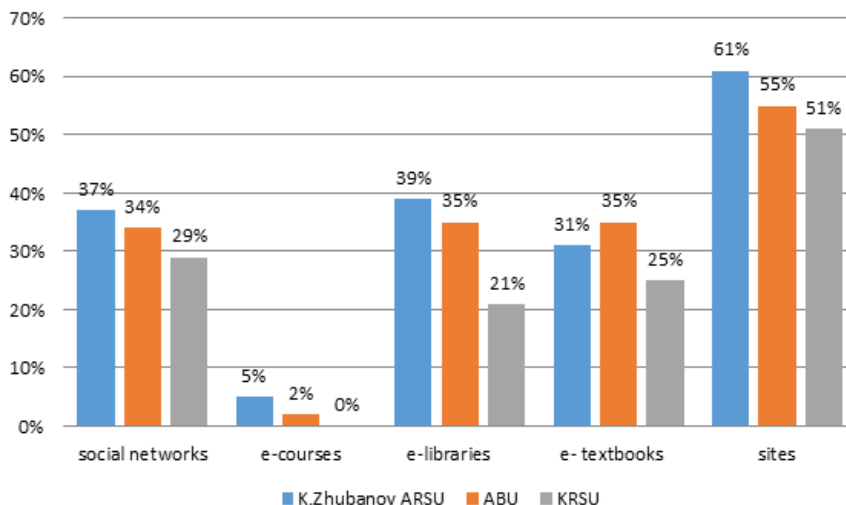


Figure 4. Resources used (teachers)

4. Discussion

Nevertheless, the results obtained indicate that users are still unconsciously approaching the use of OER; work is carried out only at the user level very weakly – as a designer, participant in e-courses and the author of a scientific network corporation. It should also note the technological, economic, social and legal factors of electronic resources. Russian scientists Komleva and Telnov (2008) noted these factors as driving forces for the development of OER. So, in their opinion, ‘... technological and economic factors are an improved, cheaper and more user-friendly infrastructure, namely the

network, hardware and software. Learning content becomes cheaper to produce and use. New economic models and legal agreements for the distribution and reuse of content are emerging. An increasing willingness to provide resources for their dissemination in open access is noted as social factors' (Komleva & Tel'nov, 2008).

Currently, the study of OER is a demanded research on the part of world scientists. They formulated the following research questions:

- opportunities and reasons for increasing the range of use of electronic resources in education and society;
- types and forms of motivation for individuals and institutions in the free distribution of content and related issues of copyright protection;
- identification and grouping of OER consumers;
- startups and business models for the development of projects of OER;
- technical improvement of the quality of the educational resources themselves provided for use on the network.

5. Conclusion

The results obtained also indicate that in Kazakhstan the issue of this innovative reform in education is not considered deeply enough from the consumer side, despite the fact that the state programme for informatisation, electronic government, has been introduced. Those educational opportunities that are provided free of charge by the world scientific communities are inaccessible from the informational illiteracy of society.

As part of the work carried out, we came to the conclusion that the informatisation of education often leads to the formation of new forms of organisation of education, one of which is open education.

OER are one such form. The main characteristics of this type of resource are availability, scientific orientation and availability of open licenses. The main goal of OER is to provide free access to higher education for the majority of students. OER, as a complex concept, consists of several parts, important components of which are the use of massive open online courses and open licenses of Creative Commons (Sigalov & Skuratov, 2012).

Analysis of foreign and domestic scientific and methodological literature in the field of using OER within the educational system also made it possible to highlight their main advantages and disadvantages.

6. Recommendations

March 2019 shocked the entire world community with a pandemic. This forced all participants in the pedagogical process to come close to OER. Even informationally 'inactive' teachers and students have become active users of Internet technologies. Our sociological survey was timely, and its results allowed us to 'see' the general picture of information literacy of the pedagogical and student community. It also helped us develop a number of recommendations that are most important at this time.

1. Strengthening the scientific world towards attempts to develop its own, domestic OER on the example of existing foreign ones. However, in this regard, it is necessary to find effective methods for adapting existing open educational projects to the requirements of the Kazakhstani labour market.
2. The language barrier faced by both students and teachers. ABBYY Language Services has developed a platform 'We translate Coursera into Russian', which currently unites 457 volunteer participants.

3. Creation of a portrait of target users of OER, descriptions of the key needs of target groups. This is facilitated by conducting various kinds of sociological surveys of real and potential users, as well as collecting and analysing their socio-demographic data, and in the future the development of large-scale studies based on online statistics of users of these products (they are currently actively developing abroad).
4. One of the most pressing issues for the education system is the willingness and motivation of teachers to use new educational practices in their daily work. The authors highlight the need to develop and train teachers in new educational technologies, new pedagogical approaches associated with the integration of these resources into traditional educational practices. In this regard, it is interesting to study the socio-cultural barriers of teachers to the introduction of OER.

According to the authors, these recommendations are included in the list of important in the development of Kazakhstani OER as a requirement of today.

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