



Evaluation of Distance Education Applications in the Kyrgyz Republic Universities

Zhumagul Nurakun Kyzy¹, Chyngyz Begimkulov², Rita Ismailova³ and Hakan Dündar⁴

^{1,2,3} Kyrgyz-Turkish Manas University, Kyrgyz Republic

⁴ Kırıkkale Üniversitesi, Turkey

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ABSTRACT

In the scope of this research, applications used for distance education units in four universities of the Kyrgyz Republic were evaluated. The study uses a descriptive method which is carried out by interview of specialists involved in the development and implementation of the distance education in the country. Additionally, technical overview of the learning management systems used by distance education units was carried out and the content analysis was conducted. The study showed that there is a different perception of the distance education in the Kyrgyz Republic which is still perceived as a correspondence education, called "заочная форма обучения" (zaochnaya forma obucheniya). The results of 5 interviews showed that there is no sufficient support and understanding of the distance education by the university managements as well. Therefore, it is suggested to make clear differentiation of the correspondence and distance education methods in the Kyrgyz Republic and to the university managements to give importance to distance education at the university level.

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distance education, learning management system, higher education, Kyrgyz Republic.

Introduction

With the development of the internet, where participants can work with a text, audio and video materials, it has become a good platform for new learning methods. Thus, nowadays, educational institutions of all levels more and more move toward usage of Web to support conventional education (Mason, 1998). Education with help of Web technologies, which is generally referred to as e-Learning, allows students not to be present at a school physically (Paulsen et al., 2002).

Depending on the time dedicated to face-to-face learning, technology enhanced models can be divided into two categories, which are: web-supplemented (or fully online) systems, hybrid (or blended) learning systems. These models are called synchronous and asynchronous. Synchronous systems are those which require all students to be online at the same time, while in asynchronous models course materials are available and students can access them at any time, since there is need to be gathered together at the same time (Anderson et al., 2003). Skill and Young (2002) proposed a system which would embrace both virtual and real spaces and many universities combine these methods and implement blended (or hybrid) learning systems.

According to the report of the National Center for Education Statistics, in US, almost 20 percent of undergraduate students were involved in distance education during the 2007–08 academic year (Radford, 2011). Most of the progress in e-learning started with the development of learning management system platforms (LMS), also known as learning platforms or virtual learning environment (VLE). Such learning

¹ Corresponding author's address: Department of Computer Engineering, Faculty of Engineering, Kyrgyz-Turkish Manas University, 521, Chingiz Aytmatov Campus, Jal Micro-district, Bishkek, Kyrgyz Republic
Telephone: +996 (312) 492756
e-mail: rita.ismailova@manas.edu.kg
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platforms allow educators to make learning materials available online for students, as well as test and evaluate them within this environment. Usually within such systems it is possible to collect data on students score and show their progress in charts, allowing to create up to date reports for each student and class (Paulsen, 2003). According to Paulsen et al. (2002), many universities in Europe adopted LMSs, which were either purchased or self-developed.

Among the barriers to integration of the LMS into educational process and particularly in the usage of learning management systems many researchers highlighted the problems with the availability and the efficiency of the Information and Communication Technologies (ICT) infrastructure, technical support to instructors and the role of the school (Bingimlas, 2009), (Tondeur et al., 2008), (Vanderlinde and van Braak, 2010) and (Smet et al., 2016). In Lwoga (2014), the learning institutions management, e-learning systems designers and providers and performance of instructors were defined as an e-learning success factors. The review by Andersson and Grönlund (2009) of 60 articles published between 1997 and 2008 showed no difference in distribution of these challenges among developed and developing countries. However, there was a difference in problem type, that is, in developing countries issues were with access to technology and context, while in developed countries the focus was on individuals.

In the scope of this study, university distance education systems in the Kyrgyz Republic were examined in terms of content, administration and technical infrastructure. According to the Law of the Kyrgyz Republic on Education from 2003, an educational organization can use distance learning technologies for realization of educational program. The state of art on this topic in the country was investigated and general problems in implementation of distance education at the sample of distance education centers of four universities were determined. The choice of universities was due to the Learning Management Systems they utilize for providing distance education courses. Thus, universities with Moodle Open Source Learning Management System, a self-developed system along with Moodle, fully self-developed system and, finally, a self-developed system which has been adopted by other Kyrgyz Universities were selected.

Method

In the scope of this research, current situation and applications used for distance education units in four leading universities of the Kyrgyz Republic were evaluated. Currently, there are fifty-three higher education institutions in the Kyrgyz Republic. For this research, universities were selected based on the availability of modern infrastructure, which is essential to provide distance education. Thus, the focus group of the study consists of the following four universities: Kyrgyz Turkish "Manas" University, American University in Central Asia, Bishkek Humanitarian University and Kyrgyz State Technical University.

The specialists of distance education units of selected universities were invited as a focus group for this study to interview and discuss the problems about implementation and current tendency in the development of LMS in the Kyrgyz Republic. Next, technical overview of the learning management systems used by distance education units was carried out. Finally, the content analysis of these systems was conducted. In addition, developers of the commercial course management systems were interviewed.

Instruments

In this study, the qualitative research method was used to gather information. In order to evaluate the current situation and the level of implementation of distance education methods in the universities of the Kyrgyz Republic, four questions were prepared by researchers, were asked during the interview. Interview questions were:

- a) What kind of practices have been implemented in the distance education area?
- b) What kind of technical infrastructure and software have been used?
- c) What kind of obstacles have you experienced?
- d) What kind of studies have been conducted in order to improve quality of distance education?

Procedure

The study was conducted during the fall and spring semesters of the 2015-2016 academic year in four universities of the Kyrgyz Republic. First, the universities having distance education units and providing

hybrid type of education were listed. Next, the universities with learning managements systems which were presented in a more complete form were selected. During this step, the content analysis of the learning management systems was carried out. At the next stage, interviews with specialists of distance education units were conducted one by one at each of the selected universities. The data gathered by the researchers were interpreted as descriptive analysis. The analysis for each participated university and their practices in the scope of distance education were elaborated in separate sub-sections.

Higher Education in the Kyrgyz Republic

According to the Law of the Kyrgyz Republic on Education from 2003, an educational organization can use distance learning technologies for realization of educational program. Distance education can either cover a part of educational process or be fully dependent on technologies (Law of the Kyrgyz Republic on Education, 2003). The Resolution of Government of Kyrgyz Republic developed normative legal acts regulating the use of distance learning technologies (Resolution of Government of the Kyrgyz Republic, 2014). According to this resolution, the main types of distance learning technologies were defined as case technology, Internet and telecommunication technologies. The case technologies can be implemented as a set of educational resources of teaching materials designed for self-study (cases) using different types of media. Internet technologies make use of any type of computer networks which ensure access of students to educational resources of institutions offering the distance education course. Telecommunication technologies are mainly defined as technology which utilizes satellite data communications and broadcasting.

According to the National Statistics Committee of the Kyrgyz Republic, in 2014-2015 academic year there were 53 universities registered at the territory of the country (National Statistics Committee of the Kyrgyz Republic, 2015). 52 of them have websites. Review of learning management systems, which is used in universities of the Kyrgyz Republic, showed that the LMS usage in the republic follows the world tendency. Thus, universities use free open-source systems such as Moodle. Also, self-developed systems are utilized.

Thus, in Kyrgyz National University named after J.Balasaguni, American University in Central Asia, Kyrgyz Turkish Manas University, the Moodle system was in use. Kyrgyz National Agricultural University named after K.I.Skryabin and Bishkek Humanitarian University named after K.Karasaev use AVN system developed by Kyrgyz State Technical University.

The systems are used both as a part of conventional education system and a part of distance education where students carry out the whole educational process distantly and visit the universities only for the exams. The number of courses presented online at each university differs depending on the system they utilize. Also, it depends on the type of education for which the online system is used. Overall the observed tendency was universities utilizing widely used open-source systems offer more online courses than those who use their own software.

Table 1. Comparison of learning management systems used by Kyrgyz universities

	Kyrgyz Turkish Manas University	American University in Central Asia	Bishkek Humanitarian University	Kyrgyz State Technical University
LMS	Self-developed On Ed system	Moodle	AVN	AVN
Used in conventional education	Yes	Yes	No	No
Used as a part of "correspondence" type of education	No	No	Yes	Yes
How much are these systems utilized on a daily/monthly/yearly basis?	Daily	Daily	2 times per year	2 times per year
How many courses are offered on-line in each university, in comparison to the total number of courses?	7 courses (2 courses at each semester for the 1 st and 2 nd year students)	all courses are presented online	not available	not available
Used for students evaluation	No	No	Yes	Yes
Provide certificates or diploma	No	No	Yes	Yes

Distance Education in the Kyrgyz Republic

For further analysis the distance education centers of four universities were evaluated. The choice of universities was due to the Learning Management Systems they utilize in distance education courses. Thus, the distance education center of American University in Central Asia utilizes the Moodle Open Source Learning Management System; in Kyrgyz-Turkish Manas University, a self-developed system along with Moodle is used; the AVN learning management system developed by Kyrgyz State Technical University has been adopted by other Kyrgyz universities as well, particularly, by the Bishkek Humanitarian University.

Kyrgyz Turkish Manas University. Kyrgyz Turkish Manas University is a university in Bishkek city with a special status, established by governments of the Kyrgyz Republic and the Republic of Turkey in 1995. There are 9 faculties, 2 graduate schools and 4 higher schools at the university. The distance education center was established at Kyrgyz Turkish Manas University in 2013. The center aims at providing support for courses where there are a big number of students being enrolled in them. Currently it offers 7 courses for 1st and 2nd year undergraduate students, which were defined by the Ministry of Education of the Kyrgyz Republic as must courses for all undergraduate students in all programs. Thus, the center serves not for students having correspondence type of education, but offers courses for regular students instead.

The Distance Education Center developed the dedicated software, called OnEd, which is available at <https://uzem.manas.edu.kg>. In addition, the center makes use of the Moodle system at <http://eders.manas.edu.kg>. To be enrolled for an online course, students must register the course in a regular way through students' affairs system. After that the center registers them on the OnEd system for one semester. Since the OnEd learning management system is a university educational tool, no direct registration on the system is allowed.

There are 3 types of access in the OnEd system, users can login as a student, a course coordinator or a system administrator. Students have access to text and video materials of courses they are enrolled in. After each section, there is a quiz, which students must pass in order to gain access to the next section of the course. No dead-lines are set for students to pass these quizzes. However, the mid-term and final exams are hold in a conventional way with fixed dates. Teaching materials such as video and .pdf documents are uploaded to the system by course coordinators. In addition, coordinators have access to the list of students enrolled in their particular course, as well as to the quiz results. The access type to the quiz results is "read only" access.

The main problem in distance education which is faced by distance education center is a computer literacy level of users, both instructors and students. In addition, although there are fixed office hours for students, it is difficult for the course coordinators to handle such a big amount of students, especially given the fact that students are tend to visit staff at the last days before exam. Besides, the biggest problem is with user authentication while taking quizzes, since, after login, there are authentication mechanism provided. Currently quizzes are only for self-evaluation, however if their results are included to the final grade of students, authentication technique will be necessary for the learning management system.

American University in Central Asia. American University in Central Asia was founded as the Kyrgyz-American Faculty of the Kyrgyz State National University in 1993. Later in 1997 it was reorganized as an American University in Kyrgyzstan. It was re-named into American University in Central Asia in 2002. Nowadays there are seven divisions and five graduate programs in the university. Moodle learning management system of the university is available at <https://e-course.auca.kg/>, and it is integrated into the educational process. Therefore, the e-courses at AUCA provide courses for regular students as a part of conventional education system, and not for correspondence education.

For the course to be included into e-course system, the instructor applies to a department. After the course is added, students can be enrolled in the course. Enrolment of students can be done either by enrolment key or manually. Course materials are prepared and uploaded to the e-course system by instructors. The teaching material which can be uploaded can include files, media content or web links. During the semester the e-course system is usually utilized throughout the courses, for distribution of course materials, submission of written assignments, and scheduling. Students are mostly required to engage in online participation through this e-course system. Aside from downloading and reading online materials,

student login allows users to upload assignments to the system as well. Also, Moodle system allows taking quizzes online.

Kyrgyz State Technical University named after I. Razzakov. Kyrgyz State Technical University named after I. Razzakov is one of the oldest universities of our country. There are four branches of the university in the different regions of the Kyrgyz Republic, five institutions, nine faculties, and a college at the university (Official website of KSTU, 2016). The Faculty of the Evening and Correspondence Education was established in 1960, later in 1999 it was re-organized into the Institute of Distance Education and Professional Development. The Institute offers education for bachelors programs only; the education is held with the assistance of distance education technologies, at the end of education students are given diplomas in accordance with state educational standards and license.

The education is mainly focused on individual work of students, is it co-called “заочная форма обучения”, which can be regarded as a correspondence education. Students study individually, with learning material provided by the institution, and no lectures are provided during semesters. However, specialized laboratories, a library and reading rooms and computer labs with Internet access are provided. Twice a year, students are required to participate in the laboratory and examination sessions, which include laboratory work, defense of the course projects and exams.

The distance education system used by the Technical University is the one developed by the commercial structures – the AVN system, available at <http://avn.kstu.kg/>. The system was developed for and in collaboration with the university. The overview of the AVN system, implemented for the Institute of Distance Education and Professional Development showed that there are about 29 programs offering distance education within 14 departments. However, since no further investigation was possible due to system identification issues, the content analysis of the courses was not possible. Though, the interview with the developers of the AVN system showed that there are 3 types of access in the system: system administrator have the full range of access types to the whole system. Instructors have access to the course content, they are authorized to upload and manage content of the courses assigned to them. In addition, instructors have access to the list of students enrolled in their courses, to the assignments uploaded by students and the results of course examinations held online with the help of the AVN system. Students have access to text and video materials of all courses they are enrolled in, as well as to the examination materials.

Bishkek Humanitarian University. Bishkek Humanitarian University (BHU) named after K.Karasaev is located in Bishkek city and one of the oldest universities in the Kyrgyz Republic. The university has 9 faculties, 4 institutes, 13 international cultural, educational and research centers and a college (Official website of BHU, 2016). The Institute of Continuous and Distance Learning was established in BHU in January, 21, 1999. According to official website of the Institute, there are 5 departments in the Institute: "Economics", "Finance and Accounting", "Management and Socio-information technology", "Humanities", "Theory and practice of teaching languages" (Official website of BHU Institute of Continuous and Distance Learning, 2016). Distance learning with the use of distance learning technologies is held only for bachelor programs, the education type in this institution resembles correspondence education, where students do not participate in any class, but enter exams only. The software used by the Institute was developed by Kyrgyz State Technical University and it is called AVN. The AVN system used by Bishkek Humanitarian University is available at <http://avn.indo.kg/>. Afore to the beginning of online education process, students are invited to the “guiding” face-to-face lectures. Usually these lectures are an eight-hour lessons. During these lectures, students are given instructions on how to use the AVN system, and case-packages with course materials are distributed. All mid-terms are carried out online, and only final exam is hold in a conventional way. There are 3 types of access in the system, in which student, instructor and system administrator login. Students have access to text and video materials of all courses they are enrolled in, as well as to the examination material. To set exam dead-lines, system administrators fix date manually. Teaching material is uploaded to the system by course instructors. Also, they have access to the list of students enrolled in the particular course, as well as to the quiz results on their own course. The access type to the course materials and quiz results are “can modify” access. Thus, in the BHU, the LMS is also used to support correspondence type of education for the students from remote regions.

Interviews with web service development and technical support teams showed that problem with building a distance learning system is mostly in legislation; lack of qualified specialists and technical limitations are another vital problem. However the biggest problem is with online examination, since system does not provide user authentication after login. The problem is due to the fact that all mid-term exams are hold online, no instructors and observers can witness who is taking an examination after the login process was performed.

Commercial systems. Distance education systems are being developed not only by universities, but by commercial structures as well. This tendency is valid for the information technology sector in the Kyrgyz Republic as well. There are two main products on distance education available in the Kyrgyz Republic. One of the systems developed by private sector is the MIR EiT system, another is an AVN system. Both commercial learning management products are built as a complete system containing course content with online library, students' evaluation records and instructor rooms, dean's offices and accounting services, with almost all document flow for managing educational process in one platform. They also claim to support conducting webinars. In many aspects the commercial system resembles the systems built by universities. Mostly, they are built in close collaboration with and relying on consulting of educational institutions. Thus, similar to the university online learning management systems, the learning management system part of the commercial systems allow three types of access: administrator, instructor and students access. However unlike university systems, in these systems the widest range of access rights are given to the administrator due to commercial use of the system. Content of an online course can be either uploaded by administrator (that is by the technical support team) by default, or this access right can be given to the course instructor. The same thing can be said about the exam materials. According to the developers, the possibility of reports on the course achievements and students score can be prepared on demand. As for the students access, they can be added to the system by administrators; however the system allows registration as well. Enrollment of students also depends on who the system is built for. Students have access to content of the courses they are enrolled in; in addition, the system allows uploading written assignments by students. Additionally, unlike university systems, in one of commercial LMS, MIR EiT, there are students' profiles available in open access.

As opposed to university systems, in a commercial system the problem of the legislation is not that vital, since the system is flexible enough and can be adapted to demands of many universities. According to developers, since the course content can be uploaded to the course management system by the technical support team, there is no problem with non-technician users as well. However in commercial systems the identification problem during online examination still remains. In addition, systems work over HTTP protocol, with no security mechanisms involved in the transmission of data. For the university learning management systems, however, this can become a big issue, since students' grades are involved.

As a future plan, the developers of one of the software consider building forums for courses and homepages with feeds from every user. Thus, the system will become more like a social network with learning features. In addition, the user profiles are planned to be turned into curriculum vitae of a particular user, with the list of all courses completed by the user within the course management system. Although developers claim that there are no problems with the usage of the systems since all the process of course content upload is held by technical support team, the development of hints is also carried out. On the other hand, developers of the second course management system reported that the system development will follow the requirements of universities.

Discussion and Conclusions

The current research showed that for the implementation of learning management systems in the Kyrgyz Republic, the level of information and communication technologies plays a vital role. The problem is mostly due to the fact that in the Kyrgyz Republic the term "distance education" is used mostly for the correspondence learning, especially in the universities founded in the Soviet period of time. According to the National Statistics Committee, there are 53 universities in the Kyrgyz Republic (National Statistics Committee of the Kyrgyz Republic, 2015). 34 of them are located in the Bishkek city, the capital of the country. There were 40.7 thousands of graduates in 2014, of which 26.8 thousands are graduates of universities located in Bishkek city (National Statistics Committee of the Kyrgyz Republic, 2015b). Therefore, students taking the "correspondence type" of education are mostly from remote regions with lower level of

ICT infrastructure. In this type of education, students are enrolled at the universities, however, they do not attend any courses, but work individually with the course material, provided by the universities. In many cases, these materials are hard copies of the book, which are also not available at rural parts of the country. That is, for the target audience of the online courses – students from the remote regions, the problem of the ICT infrastructure becomes vital. Thus, it is evident that the further development of the distance education in the country primarily depends on the development of ICT in the rural territories.

Newly founded universities, however, use distance education as a part of the conventional education process. That is, universities offer course materials and quizzes for courses online, as support material. The systems developed by or with the help of university distance education units mostly provide good basis for the online education; this result bears a resemblance to the development of LMS in the developed countries. For example, in the research of 113 university learning managements systems in 17 European countries by Paulsen (2003), it was shown that, although most of learning management systems provide good basis for online education, however, systems cannot provide all functions needed by institutions. The result of the current study showed that in the Kyrgyz Republic systems are mostly being developed either by the universities themselves or by commercial structures in cooperation with universities. Open source LMS such as Moodle are mostly considered as complicated and inexplicit.

This fact, in turn, is associated with a low level of computer literacy, since the general level of computer literacy was also recognized as one of the main issues with implementation of LMS in the Kyrgyz Republic. Particularly, this is due to resistance of elderly faculty staff to change their attitude towards new information technology. Technical issues are also of big concern among developers in the Kyrgyz Republic. Although the development process (i.e. coding) of Learning Management Systems was not among problems stated by developers, many of them face user identification difficulties. Nevertheless, systems are being developed and updated with respect to the demands of universities; many developers do not account the students' identification as an issue to consider.

During the interviews with the distance education units' specialists and technical support teams, the history and development stages of these units were revealed; in addition, it was noticed that although all these units are presented as a distance education units, these units perform different duties in different universities. Each interview, conducted by researchers, took about one hour. The gathered data were interpreted as descriptive, and presented in the descriptive data results section of this study. In addition, the content analysis of the online platforms used by distance education units was performed. In the scope of this analysis the number of courses presented online by each university was examined, together with the type of course materials available for students.

In the scope of this research, current situations and applications used for distance education units in four leading universities of the Kyrgyz Republic were evaluated. The state of art of the distance education and problems the distance education units of the Kyrgyz universities were analyzed. In the scope of this research several differences between approaches and attitude toward distance education methods were observed.

Firstly, there is a different perception of the distance education in the Kyrgyz Republic. The distance education is still perceived as a correspondence education, called “заочная форма обучения”, where students are expected to study independently, by their own, and visit universities only for examination. This is due to the Soviet education system; a form of study for the students who were unable to attend classes regularly which combines the features of a full-time and self-study (Староверова, 2012). In this form of education an in-line principle was used, with the same educational plan for all students. This method is still in use at many universities in the Kyrgyz Republic. With the growth of the information and communication technologies, this form of education is constantly being upgraded, becoming more like distance education. In the Resolution of Government of the Kyrgyz Republic № 354 on June 26, 2014, education provided with the help of technologies were defined as a correspondence education, that is “заочная форма обучения”. In Keegan (1980), six definitions of the distance education, including definitions by Holmberg (1977) and Peters (1973), were considered, however, this type of education does not fully fall in any of definitions given to the term “distance education”. Therefore, it is suggested to make clear differentiation of the correspondence and distance education methods in the Kyrgyz Republic.

Next, the results of interview showed that there is no sufficient support and understanding of the distance education by the university management as well. The learning management systems are developed and used to decrease the instructor's course load; however, in the Kyrgyz Republic, mostly the systems are self-developed or an open source systems such as Moodle LMS, and their use is restricted by the making course content available online. No management features of LM systems are in demand. Also, review of the commercial systems and interview with developers showed that universities are reluctant to such systems, preferring conventional type of education. Thus, it is suggested for the university managements to give importance to distance education at the university level. Another problem is that there is a lack of specialists on distance education, which becomes an issue giving the fact that there is a different approach to the internet technologies in the Kyrgyz Republic (Ismailova and Kimsanova, 2016); the same is true for the technical staff, especially in the field of access control and security (Ismailova, 2017). In addition, the general computer literacy rate should be increased.

In the scope of this research, the distance education units of four universities located at the Kyrgyz Republic were examined. However, the research shed light on the topic only from these units' point of view. As a next research, it is planned to consider the bigger number of universities, as well as analyses of the students' perception and attitude toward education with the use of online technologies and distance education.

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