Adaptation of the Distance Learning System Platform of S. Toraighyrov to Open Online Courses

Akerke AKANOVA¹,a, Nazira OSPANOVA²,b and Gulmira ABILDINOVA³,c,*

¹Pavlodar city, Lomov Street, 64, Kazakhstan
²Pavlodar city, Lomov Street, 64, Kazakhstan
³Astana city, Satpaev, 2, Kazakhstan

aakerkegansaj@mail.ru, bnazira_n@mail.ru, cgulmira_2181@mail.ru
*Corresponding author

Keywords: Massive open online courses, MOOC, Distance learning system, DLS, Model.

Abstract. The main purpose of the study is to consider the issue of adaptation of the platform of the distance learning system of the S. Toraighyrov PSU to open online courses and, accordingly, to develop a model allowing to safely connect the necessary unit for some courses which can be used as open online courses. To achieve the goal, enough scientific articles were studied. The results of this work show that the development of a model for adapting the distance learning platform to online courses includes: considering the conformity of the principles of the platform with open courses, development of unit of openness, forum unit, modernization of unit of the interaction log, to improve the content of the course.

Introduction

With the rapid development of computer and information science, all areas of education have started to intensively introduce information and communication technologies into the educational process. The growth in the number of people seeking an in-service education in one area, or another, without wasting time on trips, resulted in the development of information technologies in educational area all around the world, including Kazakhstan [1]. The improvement and application of information and communication technologies, multimedia tools has outlined a separate area - electronic educational resources, and the improvement of accessibility of education has led to distance learning. This allowed many universities in the world to introduce and use distance learning systems, and subsequently massive open online courses (MOOC).

The world's scientists studied the wide impact of the MOOC on obtaining accessible education massively, also the preparation and experience of teachers and professors in the MOOC [2], a discussion of the quality of MOOC [4,5] and other aspects of the development of MOOC. Researchers are also studying the origin of MOOC and its effects for educational institutions that previously specialized in distance education [6], the impact of training materials including video materials, the distribution of which can increase the interactivity of the video [7]. In addition, a mechanism for assessment was developed, which examines the model of “inverted” assessment [8] and many other studies that describes all elements of the MOOC: content, network and tasks with different compositions and focuses, teaching methods and e-learning approaches.

Against this background, in order to adapt the DLS to open online courses on the portal of S. Toraighyrov Pavlodar State University (hereinafter - PSU), we carried out a small analysis of traditional widely used platforms, as a result we determined the unit of DLS of PSU, which require significant moderation for adaptation, also that additional unit are required for the full implementation of MOOC. Nevertheless, our ultimate goal is to investigate the area of application of the MOOC and develop a model for adapting the distance learning system of the S. Toraighyrov PSU to open online courses in order to prepare the DLS platform for experimental testing of its effectiveness at the next stage of the study.

228
Distance Learning of S. Toraighyrov PSU

Distance learning in S. Toraighyrov PSU has started operating since 2010. One of the solutions of organizational problems, such as technical organization of the educational process, personnel training, financial problems, has been the development of PSU documents for the introduction of distance education technologies (hereinafter - DET) [9,10], based on state normative documents [11].

The PSU retracted the previously used Prometheus platform of DLS, since the introduction of the DET into the training process required the development of new system. The distance learning system (hereinafter - DLS) was developed on the education portal of PSU by the efforts of the programmers of the Center for informatization of education of the University, which successfully operates today. DLS includes the following functions: the administration of the educational process of DET, the methodological support for the implementation of DET (the development of instructional tools of DET), IT support, and has two operation modes: online and offline, but DLS is designed only for students of the PSU [12,13].

DLS provides for the independence of the educational process from the time and spatial location of students and teachers. Offline pattern of the work of student and teacher means the work in the unit DL cases. Online classes are held in real time as scheduled and have an advisory form, and are not limited in the structure of its deliver and presentation of material.

Thus, each student is provided with an academic and methodological complex (lecture material, practical work, materials for control of knowledge) on each discipline of the working curriculum. Academic and methodological complexes are placed in the DLS of PSU in the unit DL_cases and are available for students. They are accompanied by various additional audio, video and other multimedia developments of teachers. While adhering to the flexibility in application of distance educational technologies in the educational process, a handy academic calendar has been developed that provides for an individual schedule for the submission of the current material. The unit "Journal of interaction" allows the exchange of educational materials (for knowledge assessment) between trainees and teachers. This is the main unit, where the student receives full information about the content of the discipline (Figure 1), can read the comment and can write the one himself/herself to the work done. Here the command "downloaded" means that the student has received the information, and is currently studying it, if the "history" is empty then it means that there are no questions for the discussion between the student and the teacher.

Platforms of Massive Open Online Courses

Currently, in connection with globalization in higher education and the development of distance learning in the world educational space, massive open online courses are being launched. As we know, the purpose of the MOOC is publicity, accessibility and scale of education. Since the existence of MOOC, many platforms have been developed: Coursera, MIT Open CourseWare, EdX, Khan Academy, Udacity, Umass Boston Open Courseware, Codecademy Academic Earth Open Learn, Intuit and etc. Platforms for MOOC provide for functions with various upgrades which were used for DLS. Each of the systems of MOOC has a relatively similar interface and e-learning.
tools. In some universities, previously used distance learning systems are adapted to massive open online systems. Every MOOC system has unit such as registration of listeners, monitoring users, managing data on courses (the existence of groups, the cost of education, duration, training schedule, etc.), monitoring the curriculum, various means of communication: chat, forum, e-mail, internet conferences, etc., tools for testing the knowledge of students and other e-learning tools.

To draw an analogy between the platforms, a comparison was made between the unit of the MOOC platforms and the DSL of PSU used for interaction with the trainees. As a result of the comparison, it was discovered that the above-mentioned unit are also contained in the DLS of PSU, with the difference that the DLS of PSU was designed only for students enrolled in the university and other users did not have access to the courses that were studied at the university.

The following question arises: "Are massive open online courses needed in the PSU?". Indeed, knowing that most of the world's universities (Massachusetts Institute of Technology, Stanford University, Harvard University, etc.) use the experience of open online courses. They have millions of listeners due to their accessibility, publicity, which has provided the development of continuous learning for millions of people at a high professional level, as well as the opportunity to obtain a certificate for a low fee. The certificate of MOOC enables the student, upon admission to the given university, to transfer credits of the course and include the assessment and the number of credits in the transcript of the student, which reduces the budget and time of the student.

Thus, a university that has massive open online courses does not need to advertise itself to invite applicants. The massive involvement of the listeners will allow a wide range of applicants to learn more about the university and teachers. Publicity and the possibility of obtaining a certificate will allow listeners to study one or another course, with subsequent credit transfer in applying for the S. Toraighyrov PSU, at the same time expanding the scale and wide geographical space of applicants to the university.

From here we can say that the main concepts of the MOOC are:
- massive involvement, which consists in the unlimited number of course listeners;
- publicity, which gives an opportunity to anyone willing to get knowledge for free, remotely, at appropriate time and at convenient place for the listener;
- the integrity of the courses, which include not just fragments of educational material, but also practical tasks, a communicative component, test materials;
- the opportunity to obtain a certificate if the course is successfully completed [14].

In a study, various MOOC systems (Coursera, EdX, Udacity, Iversity, Crypt4you and others), their unit of interaction with trainees were examined, and its main difference from the DSL of PSU is openness, discussion forums, the mandatory use of video lectures on topics and the final control. As a result, we proposed a model for adapting the current DET system to the MOOC that considers the conformity of the principles of the DLS platform with open courses, the development of unit that provides free access - openness of the course, unit of forum, the modernization of the unit of interaction log, to improve the content of the course in which each course will contain an educational and methodological complex of discipline, equipped with audio and video lecture materials for each lecture, teaching aids and other necessary materials for teaching and control works.

To consider the MOOC systems, we have chosen systems of Coursera, EdX, Udacity, Iversity, Crypt4you. Then we logged in as free user, which allowed us to examine the content of the mentioned systems of the MOOC. The next step was to draw an analogy between the systems of the MOOC and DLS of PSU, based on the obtained data (content of the MOOC systems and content of the DLS of PSU). The result of the analogy led to the need to develop an additional unit for open online courses in the DLS of PSU on the basis of the adaptation model of the DLS platform of PSU. The scheme of the model is presented in Figure 2.
Conclusion

The relevance of the study is determined by the need to conduct open online courses on the basis of adapting the distance learning system platform to open online courses. To date, open online courses are becoming massive due to their merits and are comprehensive educational process, and basing on the studied platforms of the MOOC, the following principles can be singled out: openness, accessibility, flexibility, modularity, feedback and control. The distance learning system of the PSU also adheres to the above-mentioned principles, except for the principle of openness due to the fact that the DLS of PSU is an instrument only accessible to students of the PSU and as a result is inaccessible to unauthorized persons.

Thus, the problem of ensuring the openness of distance learning was brought to the forefront, and the decision of ensuring openness and adaptation of the DLS platform was to draw an analogy between above-mentioned systems and the DLS of PSU. As a result of the analogy of system content, a model for adapting the distance learning system to mass open online courses was developed.

On the scheme of the model (Fig. 2) we see which unit need to be added and which ones to modernize.

The next step of our work is to concretize the issues of adapting the DLS platform of PSU to each unit separately, which includes consideration of:
- technical side of model implementation;
- educational and methodological support (loading and submission of the course material in the DLS of PSU)

The technical side is the joint work of our team, the department of DL and IT-promotion with programmers and provides for the development of the Open Online Courses unit that will include the user interface and design, connection with existing units of the DLS of PSU, modernization of the unit of interaction log, i.e. downloading, uploading audio, video materials on each topic, placement of interactive materials for practical and individual works, development of units of Forum and Chat, sending messages to e-mail to discuss the materials.

The content of educational and methodological support is developed by the course teachers in cooperation with the department of DL and IT-promotion that helps to record high-quality video lecture, as well as audio materials.

So, our research has shown that having a DLS platform it is possible to adapt it to open online courses without much effort.

Reference
[10] Program of transition from classical extramural learning to distance learning for 2012-2013 academic year.

