

# IMPLEMENTATION PERSPECTIVE OF MASSIVE OPEN ONLINE COURSES FOR ORGANIZING THE SELF-EDUCATION COURSES ON TECHNICAL HIGHER EDUCATION

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## ABSTRACT

This article analysis of the independent education organization process problems in technical higher educational institutions based on massive open online courses is devoted. The prospects of introducing massive open online courses into the self-education process at technical universities of the Republic of Uzbekistan and abroad are considered. Based on the analysis, a self-education model based on modern web technologies was developed, and the results were also analyzed.

**Keywords:** Self-education, mass open online course, LMS, MOOC, credit education system, case tachology, web-technology.

## INTRODUCTION

The Decree of the President of the Republic of Uzbekistan “On the Strategy of Action for the Further Development of the Republic of Uzbekistan” outlines priorities for the development of education and science as one of the priorities of the social sphere. The Decree of the President of the Republic of Uzbekistan dated June 5, 2018 № 3775 "On additional measures to improve the quality of education in the higher education institutions and their active participation in the wide-scale reforms in the country" A number of objectives have been identified to ensure their active participation in the reforms. The quality of education is determined by the procedures for organizing, monitoring and evaluating the students' independent work, and the results of the student's self-study.

## Materials and methods

As a result of the analysis of foreign scholars' work, the following definition of independent education can be summarized. Independent education is a form of education provided by many universities, secondary schools, colleges and other educational institutions. [3] Occasionally, it is also referred to as 'referral education' and is an educational activity under human supervision. Typically, students and professors or students will agree with the teacher's supervisor on the subject of the agreed loan amount for research. Independent research allows students to explore the topic of interest in additional information, in line with the traditional curriculum. This is a way for students to study specialty material or gain experience in research. [4] “Independent education gives students the opportunity to deepen their interests and make important decisions about where and how to channel their talents in the future,” said David M. [5]

According to Uzbek scholars' research, independent education is directly linked to independent thinking, it is also desirable to give it a definition: "Independent thinking is a different way, based on one's own knowledge and life experience, setting goals and objectives for the

problems facing a person; the method is the intellectual activity of the individual, with the help of the means, independently of his intellectual abilities.”[6]

Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated July 24, 2018 No. 569 "Measures on cardinal improvement and improvement of the effectiveness of training at the Tashkent University of Information Technologies named after Muhammad al-Khwareezmi" at the Tashkent University of Information Technologies named after Muhammad al-Khwareezmi 2018/2019 Starting from the academic year, the transition to the credit system of training in the field of information technology and communications training was adopted. In the credit system of study, 3000 hours out of a total of 6,000 hours in the curriculum are allocated for independent education, or 50%.

In reducing classroom hours, the focus of pedagogical activity is on independent work done under the guidance and supervision of the student teacher. This includes preparation for classroom activities, preparation of assignments on specific topics, writing exercises, preparation for current, intermediate and final control.

As we all know, the independent work of students is 50% of the total time spent in the curriculum. Currently, independent work of students can be organized in a variety of disciplines, depending on specific areas of science.

The model of organization of independent students' education on the basis of modern web technologies (Picture 1) is proposed.

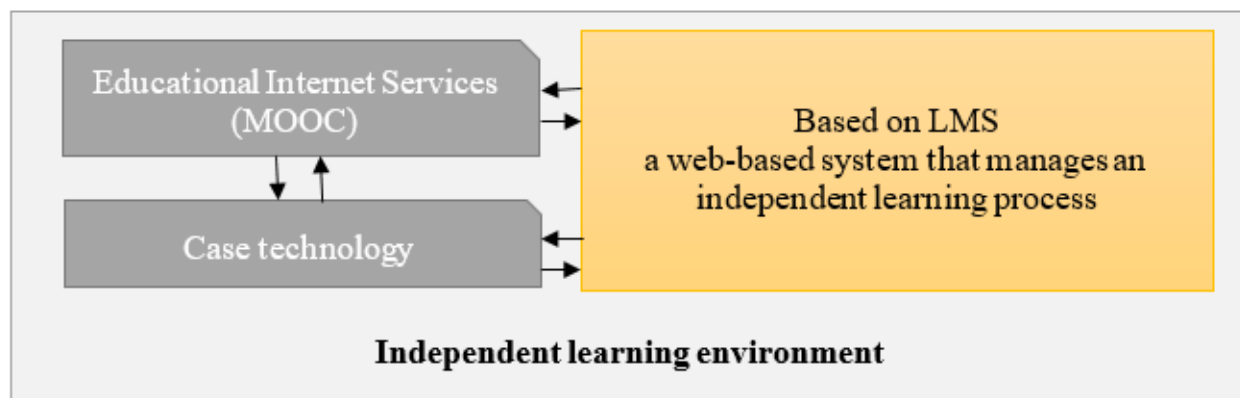


Figure 1. Organization of independent educational process on the basis of web technologies

In a self-contained learning environment that is at the core of the learning process, a web-based learning management system (LMS-Learning Management System) is used to manage and organize independent learning. On the basis of this system it is possible to monitor and control the independent learning of students. The model we propose is based on the LMS system, which controls all the student's learning activities and tasks. [7]

### Result and discussion

Nowadays reputable universities in the world are posting online courses created by their professors in an open space. One of the educational Internet services listed in Figure 1 is MOOC (Massive open online courses). [8]

MOOC is a publicly available online course that refers to a training course designed using interactive methods and posted publicly on the Internet. [9]

The following pedagogical problems can be solved on the basis of MOOC:

1. Training of students on the basis of materials of the highest ranking foreign higher education institution;
2. Training of highly competitive personnel;
3. Introduction of teaching disciplines of the highest ranking foreign universities in the local higher educational institutions;
4. Formation of training complexes on newly introduced subjects;
5. Teaching of special subjects in foreign languages;
6. Organization of independent work of students.

In the proposed model, we will consider the mechanism of organizing students' independent work using open online courses based on web technologies:

1. MOOC suitable for the curriculum topics can be found on the Internet.
2. The MOOC is studied by the faculty of the university.
3. Depending on the direction of the department, the training modules will be selected. The level of complexity of the individual training modules, the time required for mastering the module, and the minimum knowledge requirements required by the student to master the course are studied.
4. Examination control questions are formed by the department on the chosen module of study discipline.
5. Selected training modules are discussed at the department meeting and approved on the basis of special protocols and submitted to the scientific and methodological council of the university for approval.
6. As a standalone work, students are given a list of academic disciplines that are offered by MOOC.
7. The student will review the course material (module or course) provided by MOOC as an independent work.
8. Performs and evaluates creative work in the LMS MOODLE system within the selected topic based on the knowledge gained.

The third component of the above model is case technology, based on which case (case-by-case) is a technology aimed at learning and analyzing specific situations. During the implementation of this technology in the learning process, students are given a specific problem situation and students are able to solve the problem by analyzing the problem and selecting the best available solution. The use of case technology and the use of MOOCs will improve the effectiveness of the learning process. [10]

The above model was used to organize independent training for the 3rd year students of the Information Security Department of the Tashkent University of Information Technologies named after Muhammad al-Khwarezmi for Computer Science courses taught for 6 semesters.

The 710-16 and 715-16 groups participated in the experiment, using two types of approaches (traditional independent form of education and MOOC-based self-education). MOOC-based self-education is based on the CLASS CENTRAL MOOC's open free computer courses on Computer Networking. Positive and negative indicators were analyzed.

Table 1. Comparative analysis of forms of independent learning themes.

| Traditional (710-16 group)   |   | MOOC (Group 715-16)   |  |
|--|---|---|--|
| Positive   | Negative  | Positive  | Negative   |
| <ul style="list-style-type: none"> <li>The students independently mastered a narrow range of topics</li> </ul> | <ul style="list-style-type: none"> <li>Recommended literature is not renewed fast throughout the year</li> <li>It is formed by the professors and teachers of the literature compiling their knowledge</li> <li>The individuality and creativity of students are limited</li> </ul> | <ul style="list-style-type: none"> <li>independently studied the experience of universities with high ratings</li> <li>Experience of highly qualified professors and teachers from around the world</li> <li>Easily master the topic under study based on new approaches</li> <li>Students have the opportunity to be creative in their independent work tasks</li> <li>The materials presented in the video courses were interesting</li> <li>Provided additional facilities for students with disabilities</li> </ul> | <ul style="list-style-type: none"> <li>Disadvantaged students with disabilities</li> </ul> |

As a result, students' level of self-study topics in the following categories was as follows:

- Average score of students of 710-16 group in the form of traditional independent education - 63.5 points;
- 715-16 students' average score in the form of self-education based on MOOC is 72.5 points.

The results of the above analyzes show that the introduction of MOOCs in the learning process has a positive impact. The introduction of modern information and communication technologies in the education process, especially in the field of independent learning, provides an icon of comprehensive development of students' potential.

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