

Export of medical education in the university ecosystem of the Kyrgyz Republic

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Abstract. The article defines the role of export of educational services in the system of national education of the Kyrgyz Republic. The main problem in the realization of such services is the integration of foreign students into the national environment. The purpose of the study is to create a means to support such students in mastering educational programs. For this purpose, a structural analysis of the educational process was carried out to establish the key objects and related processes. A functional model is created, reflecting all aspects that influence the change of process states and transforming objects (e.g., controlling influences and mechanisms). The resulting model is the basis for the design phase in the software life cycle model.

Keywords: functional model, education quality, education management, business process modeling, international students, digital transformation.

1 Introduction

One of the significant factors in stimulating economic growth in all developed countries is the export of educational services [1]. Prerequisites for the implementation of academic mobility are high level of information and communication technology development, transportation accessibility, increasing tolerance and interpenetration of cultures [2-4]. Many countries invest significant funds in promoting national systems of professional education in the global market of educational services, and educational organizations actively promote their educational services to attract foreign students [1, 3].

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The modern process of modernization of the education system in Kyrgyzstan is carried out taking the export of educational services into account, implementing many projects that form a common educational space [5]. The purpose of such projects, for example, is to

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increase the rating of educational organizations in international rankings, to increase the share of funds received from the export of educational services in the structure of educational organizations' income.

The purpose of the ongoing research is to analyze the digital transformation of processes related to the export of educational services. The objectives of the study include the determination of objects in the ecosystem of an educational organization involved in the export of education; setting up key relationships and processes that affect the change in the state of such objects; the creation of formal models of the established processes; the development of process management techniques to increase the quality and quantity of export of educational services.

The object of the study is the ecosystem of an educational organization, the subject of the study is the process of integrating foreign students into the educational process.

The theoretical significance of the study lies in determining the factors affecting the quality and accessibility of education for international students. The analysis and systematization of the obtained results allows creating a unified model of management of an educational organization taking the dynamic change of different factors into account. Such a model can be used in studies related to the management of the quality of education.

The practical significance of the study lies in the possibility of using the obtained results in the development of national educational projects aimed at popularizing different specialties or types of education.

2 Materials and methods

The method of statistical analysis was used to assess the demand for the export of educational services. It was used to collect data on the demand for educational services in Kyrgyzstan from students from other countries and to identify patterns. To identify the factors that determine the nature of the educational process for foreign students, the method of structural analysis with the application of the decomposition method for each identified characteristic was used. In studies related to the study of processes for their digital transformation, this approach is used to identify the relationship between external events and the nature of process realization or changes in the states of ecosystem objects in the relevant subject area [6, 7].

The obtained results of structural analysis were used to create formal models, which are functional models. Functional models allow representing any business process as a set of simple tasks, means necessary for their fulfillment, control elements, a set of input and output data [8].

3 Results

Popularization of export of educational services of Kyrgyzstan is usually associated with relatively low cost of education and accommodation, as well as a high level of quality of education (compared to the national education systems in the perception of foreign students) [5]. In addition, there is an opportunity to study in different languages and receive national scholarships.

Educational organizations of Kyrgyzstan successfully cooperate with many international organizations and foreign universities, implementing, for example, the following projects:

- Tempus UNIVIA “Development and improvement of international activities of universities”,
- Erasmus+ EUCA-INVEST “Investing in entrepreneurial universities in the Caucasus and Central Asia”,

- “Sustainable development of rural entrepreneurship and cultural heritage tourism between Norway, Georgia and Kyrgyzstan” project,
- Erasmus+ HECAFS “Higher Education for Food Production Systems and Standards” in Tajikistan and Kyrgyzstan,
- Erasmus+ LMPT “Curriculum for Bachelor’s and Master’s degree program for tourism development in China, Vietnam and Kyrgyzstan”,
- educational projects with China.

According to the National Statistics Committee of Kyrgyzstan more than 35% of all students of higher education institutions were foreign citizens, with about 28% being representatives of CIS countries [Analysis of existing prejudices and behavioral practices in relation to foreign students in Kyrgyzstan: https://kyrgyzstan.iom.int/sites/g/files/tmzbd11321/files/documents/2023-09/iom-report-rus_2nd-round_30.08.2023_fin.pdf]. Figure 1 shows the distribution of the number of foreign students (in %) by country.

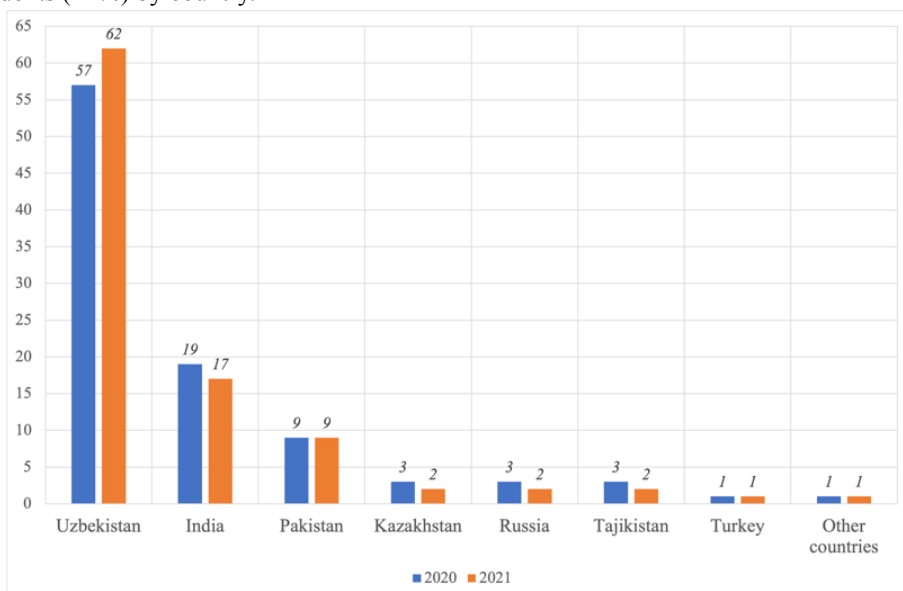


Fig. 1. Distribution of foreign students by country in universities of Kyrgyzstan

One of the popular areas of training of foreign students in Kyrgyzstan is medicine. This field is specific and requires the constant use of many simulators and practice-oriented resources in the educational process. Successful mastering of educational material requires knowledge of the language of teaching and the use of communication tools that allow for real-time valid translation.

The experience of teaching international students shows that for more successful completion of academic disciplines, constant communication support is required. Modern digital technologies make it possible to transform information presented in different forms (e.g., recognizing text in an image, voice commands) for subsequent translation. But this does not ensure understanding of the received information. Based on this, a functional model of the educational process has been created that provides support for international students during the mastering of academic disciplines. Fig. 2 shows a fragment of such a model.

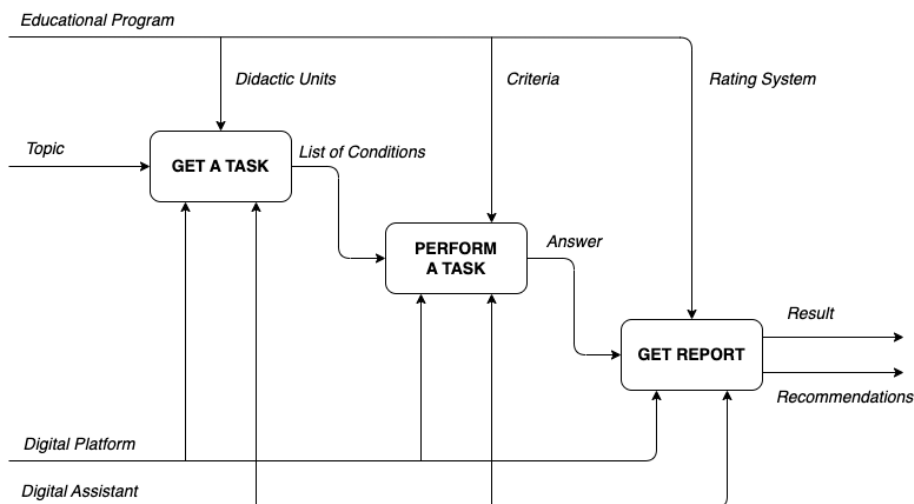


Fig. 2. Fragment of the functional model of teaching a foreign student

The developed learning model is valid not only for face-to-face learning, but also for learning with the use of distance technologies (e.g., distance learning, professional development or retraining courses). The basis of such a model is the use of a digital platform that provides the functions of providing reference information, digital simulators, a means of communication between the teacher and students (receiving works for review, comments and recommendations for mastering didactic units) or between the student and the teacher (questions on the class materials in remote mode), objective control (performance of test tasks), etc.

4 Discussion

The results correspond to the typical results that are obtained when using the stated methods. The application of the process approach in the study ensured compliance with the basic principles of functional modeling: structural decomposition, complexity and context constraining. In the studies, in which such modeling is carried out, it is noted that in this way it is ensured that all components for the implementation of business functions of organizations are isolated [6, 9, 10]. This makes it possible to assess the “bottlenecks” of the processes: the amount of resources spent on the work performed, the load on employees, etc.

The analysis of studies related to the digital transformation of the educational process shows that the obtained results are the basis for the design stage of software products [11-13]. Such software products provide organization and support of the educational process.

5 Conclusion

Obtaining medical education is the most popular export service among foreign students in Kyrgyzstan. According to statistics, 28.2 thousand out of 71.7 thousand foreign students studied at medical faculties in 2022-2023. In this regard, an adaptation program for such students is being developed, ensuring adequate interaction with the socio-cultural and intellectual environment of the university.

The development of functional models of the educational process allows ensuring the integration of tasks related to the adaptation of international students with the current processes of the university. They are used to develop instructions for employees when organizing specific educational trajectories or accompanying such educational sessions.

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