

Efficiency Evaluating of Project Training Investing as a Method of Private Investors Involvement

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Abstract. At present, practice-oriented training is taking on particular importance. Innovative projects carried out on the basis of the university with the participation of interdisciplinary project teams can be one of the elements of that kind of training. In order to provide the training of specialists that meet the requirements of international standards, it is necessary to develop mechanisms for attracting non-budgetary sources for investment in the field of education. The main direction of development of the education system in a market economy is the implementation of reforms aimed at overcoming the lack of financing of the higher education system. The participation of private investors will allow diversifying sources of financing in the implementation of practice-oriented project training. The possibility of implementing innovative projects with the participation of specialists from different levels of training and different professional competencies contributes to the creative approach development and problem-solving. In the course of work, participants can increase their professional level and expand the range of their competencies. The possibility of bringing a project to the commercialization stage will allow the project team (with the participation of the university) to create new jobs, integrate financial resources from the project implementation to the development of follow-up projects. Practice-oriented project training is the most important factor in social and economic development and the realization of the country's intellectual potential, determining the qualitative characteristics of labor forces and playing an important role in the development of the economy and society.

Keywords: project teaching, interdisciplinary project teams, private investment in higher education.

1 Introduction

The main tasks of state financing of the higher education system are to ensure accessibility of education (the principle of equality of educational opportunities), as well as the distribution of funds between educational institutions in accordance with the interests of the state. The lack of budget funding does not provide the necessary level of training of qualified personnel with competitive positions [1] in the global labor market.

Private investment in the educational system makes [2] it possible to replace part of the state funding with investments from various enterprises. It should be noted that private investment in education has a number of advantages in comparison with the state. Thus, the system of private investment contributes to an increase in the internal efficiency of the educational system due to the fact that learning outcomes are more closely associated with subjects of investment in education. And external efficiency increases due to the orientation of education to the demands of the labor market [3], which contributes to improving the quality of education. In many developed countries there is a tendency to develop co-investing from two sources: the state budget (public investment) and funds of organizations (private investment) [4].

Investing in higher education gives enterprises the right to participate in various research programs in areas that are priorities for production. It also opens up the possibility of presenting requirements for the training of future specialists, which is the most important competitive advantage directly for the enterprise. There are also obvious advantages for universities, in which the attraction of investments by private enterprises can contribute to an increase in the level of technical equipment. Enterprises can act as a customer of research and development, a supplier of specialists for retraining and advanced training, etc. All these factors reflect the importance of establishing cooperation between the educational system and enterprises [5]. Unfortunately, in our country at the moment there is no legal framework confirming the need for financial participation of business companies in the educational process; an independent search for ways of interaction between higher education institutions and enterprises is assumed.

2 Problem Statement

There are several socio-economic problems that exist today in the field of education [6].

First, this is the problem of the distribution of investments in educational institutions with limited financial resources in the age of increasing social demand for education. Practice-oriented project training requires material and technical resources renovation with regard to the innovative component of projects and the involvement of practitioners connected with the specific features of the projects. Since 2011, the Skolkovo Foundation and the Skolkovo Open

Universities have been working with Russian technology projects at an early stage, helping them to go through the valley of death and find their model for successful commercialization of research and engineering activities [7]. In most cases, there is no well-established mechanism for the commercialization of project activities implemented on the basis of the university. Members of the university project teams have low entrepreneurial activity. Project managers are generally not ready to take risks of a project. Private investors are mainly ready to participate in an innovation project only after it has reached the production stage, assessing all the potential risks associated with innovation. All these factors contribute to the fact that the main burden of financial support for projects falls on the university.

Secondly, the problem resides in discrepancy between the goals and the institution model of higher education and the goals of the development of education with its project-based training, which focuses on the priority directions of the country's socio-economic development.

The third problem is the lack of a sufficient number of qualified specialists who have not only theoretical training in this field, but also the practice of implementing innovative projects [8]. Such specialists control the project and its development pathway, act as mentors and tutors who provide coaching support to the team.

3 Research Questions

All listed factors reflect the chances of project-oriented learning, making it a more expensive form of education. In this regard, the key issue is the evaluation of the effectiveness of investment in education. An analysis of research in this area made it possible to identify the problem of the lack of special methods that can put in perspective the effectiveness of investments in the higher education system. It is necessary to create such a system of investment distribution, which would take into account both the peculiarities of the development of the region, which is especially important for basic universities, as well as the priority areas of activity of an educational institution within the framework of its development strategy [9].

Samara State Technical University, within the framework of the Strategy for the Development of the Basic University, has been implementing the practice of project-oriented student teaching since 2016, related to the formation of project interdisciplinary teams. Currently, 20 innovative projects are being implemented at the university. The current results of these projects show that 80% of the project costs are for the account of the university.

In general, 120 undergraduate and specialist's degree students, 18 master degree students, 7 postgraduates, 50 academics are currently participating in the project activities at the university.

In the course of the research connected with the problems and prospects of project training in the field of higher education, the following main issues were highlighted:

- comparing the evaluation of the effectiveness of investment in education and measuring success of the implementation of project training in universities;
- attracting private investors in the early stages of the implementation of innovative projects in the framework of project training in universities.

4 Purpose of the Study

As a result of assessing the current state and trends in the development of project-based education in the system of higher education, the main objectives of the research are formulated:

- analyze the existing methods to estimate the efficiency of investment in education in terms of assessing the implementation of project-based learning [10] at the university;
- identify methods that increase the motivation of both state authorities and private investors to participate in the implementation of innovative projects in the framework of project training;
- estimate the possibility of financial involvement of private investors in the implementation of project training without taking into account the potential commercialization of the project.

5 Research Methods

Evaluation of the effectiveness and efficiency of the educational system can be carried out in two aspects. The first one considers how well the results obtained correspond to the tasks that society sets for the educational system. In the second aspect, the effectiveness of the tasks that the education system itself highlights in its activities is assessed. And in the first case they talk about the external effectiveness of the educational system, and in the second about the internal one.

6 Findings

Note that the internal efficiency of investments is inextricably linked with external efficiency. This is because the systems of the objectives of the two largely coincide. When choosing a method of analysis, it is necessary to take into

account two groups of factors that influence the result of education [11]. The first group includes, for example, teachers and students of an educational institution, the level of qualifications of teachers, the provision of teaching materials and equipment. These factors characterize the school itself. The second group includes socio-economic factors affecting the quality of the educational process [12]: students' abilities, level of education in the family, etc. Moreover, the influence of these factors on the result of education may be manifested to a greater or lesser extent. Therefore, the distribution of investment in the school occurs in those items of expenditure that significantly affect the quality of education.

One of the most relevant areas of investment in education is the training of teachers. This is due to the fact that increasing the cost of training teachers can improve the quality of education. Also, investments in the material and technical equipment of the educational process and the provision of its teaching materials are undoubtedly more effective than investments in other areas. However, in order to determine the directions of the most efficient investment, it is advisable to conduct a cost-effectiveness analysis, which allows identifying investments with the lowest level of expenditures [13].

The quantitative measurement of the quality and effectiveness of education, achieved as a result of investing in the educational process, is the main and most difficult task that can be solved by analyzing the internal efficiency of investments in the education system [14].

Effective, from the authors' point of view, in solving the problem of investment choice are methods [15] based on building long-term forecasts of future demand for workers with a certain level of education and skills.

Forecasts are built with the aim of providing enterprises [16] with educated employees and planning the activities of the educational system to train the necessary professional staff. For this purpose, a special system for assessing demand in the labor market, both current and prospective, is being developed.

The main methods used to forecast demand for skilled workers include the following [13]:

1. Predicting future needs based on employer estimates. The disadvantage of this method lies in the unreliability of the prediction when using it.
2. Predicting with the international comparisons of the labor market and education systems. This method involves long-term planning of the need for a skilled workforce in order to achieve national income growth. Widely used in developing countries with low levels of economic development.
3. Demographic projections based on a comparison of the parameters of the population with the norms for the use of the labor of certain workers. However, the low accuracy of such forecasts and the complexity to bear in view a host of factors throw into question the effectiveness of this method.
4. Forecasting the demand for labor based on a comparison of the volume of output, the structure of the labor force and the state of the education system. Planning is done by defining hard relationship factors. The disadvantage of the method is manifested in its insufficient flexibility and unambiguity, as well as the impossibility of taking into account a large number of parameters affecting the professional structure of the labor force.

In the process of project training and the activities of interdisciplinary project teams (IPT) for 2016-2018, key results were obtained, reflecting the effectiveness of this method of implementing educational programs (Table 1).

Table 1. The main indicators of the implementation of the project training program at Samara State Technical University for 2016-2018

Index of project training	Value	Average growth, % per year
Number of IPT	19	
The number of IPT, created on the instructions of the industrial partner	5	
Total number of students in the IPT	145	25
Number of training areas involved	46	34
The number of IPT participants who have undergone a program of retraining in the field of project management	21	62
The number of on-line courses implemented by external organizations	19	37

Source: compiled by the authors.

In assessing the effectiveness of investment in project-based training on the basis of the Samara State Technical University, on the instructions of industrial partners, 5 project teams have been formed. As a result of their activities, projects have been completed in a timely manner with full compliance with the parameters of the business plan.

7 Conclusion

Thus, the assessment of the effectiveness of investment involves the use of a set of methods for both quantitative and qualitative measurement of the effectiveness of investment in education. These methods are the main tools for solving the problem of investment choice.

Today, education is one of the most important subsystems of the social sphere of the state, contributing to the sustainable development of society, the maintenance of socio-economic stability. However, today, the problem of limited resources and the impossibility of attracting them to the extent necessary for the successful functioning of the educational system is becoming increasingly acute. In this regard, investment in education is considered as one of the most profitable investment areas in order to ensure the future well-being of society.

However, the fact that the cycle of return on investment in the field of education is quite long, it causes the problem of lack of interest on the part of potential investors [5]. Partially, the problem can be solved by familiarizing investors with data on the evaluation of investment in project training. Forming a potential personnel reserve for itself, the investor is more likely to finance innovative projects. The role of the state in solving this problem will be to introduce preferential taxation when investing in education.

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