Project Method at the University: Digital Experiment

Zhuravleva O.M.

Saint Petersburg Electrotechnical University,
Saint Petersburg, Russia,
omzhuravleva@etu.ru

Abstract—**Project management has a long-standing reputation as a successful mechanism in production and business that ensures the competitiveness of an organization and its financial success. Properly organized management allows one to competently organize the process of project implementation and achieve its successful introduction. The needs of a modern university as a provider of educational services force the administration of an educational institution to be involved in the processes inherent in commercial organizations: competition in the education market and the struggle for a place in the rankings complicate the tasks of the university. Providing quality education alone turns out to be insufficient. In this regard, it seems promising to use project management mechanisms in the activities of the university. Project activities can be used both as an educational tool to increase the motivation of students, and as educational tasks that are set for the university. The application of projects is impossible without the use of mechanisms for managing the process of their implementation. The achieved result largely depends on successful management, which implies the search for both resources a popular idea for implementation. Forced digitalization, implemented as part of a global experiment related to the need to organize distance learning during the coronavirus pandemic in the spring of 2020, is considered as one of the modern educational projects. To assess the effectiveness of measures taken to introduce distance learning, a survey was conducted among students who studied online during the pandemic.The materials of the article are of practical value for the introduction of digital technologies both at the level of individual educational structures and in the educational sphere as a whole.**

Keywords—Higher education; distance learning, organization of the educational process, project method; digitalization of education, COVID-19

I. INTRODUCTION

Interest in project management and its implementation in various fields is associated, first of all, with the need to stimulate economic attractiveness, quality and efficiency in achieving the set goals. The project method is used in industries, in public administration and in a wide variety of business areas. The use of this method bears fruit, new ideas, local and large-scale tasks are implemented, interest on the part of performers and clients increases.

The project emerges on the basis of an idea that is gradually being implemented. In light of a broad outlook on the project, it can be applied in almost any field of activity in modern society. Taking into account the success of this advanced technology, its widespread use in various organizations and its compatibility with the field of higher education is considered.

II. PROBLEM STATEMENT

By definition, a project is limited in time, is created as a response to a need (of a client, society or organization) and closes after implementation. Various approaches to understanding the project and views on it are summarized by V.A. Zarenkov, who stresses that goal setting, finitude, consumption of a certain type of resources and the presence of financial constraints define a project. (Zarenkov, 2010). Foreign researchers completely agree with him. The article by J. Gomes and M. Romão emphasizes that in order to implement a planned project, it is necessary to competently manage the process of its implementation, which is the main task of project management. The main criteria for the success of a project are cost, quality and time (Gomes & Romão, 2016).

The formation of project activities and mechanisms for managing them in Russia began in the 1990s. (Pilipchuk, Shikhovtsov and Volkonsky, 2018).The use of advanced project management methods allows to withstand competition, strengthen market position and increase profits, as well as improve the efficiency of the economy as a whole. Competent project management contributes not only to the selection of the most expedient project, but also to the assessment of its effectiveness and the allocation of resources.

The emergence of project activities is associated with an immediate need that comes from the recipients of educational services (the first level of educational hierarchy), and can also be a response to external conditions, for example, as a result of changes in the Federal State Educational Standard (Standrovskaya, 2016). The implementation of this type of activity can be carried out in two planes. First of all, as a method of mastering the material in the framework of the development of an interactive approach and the formation of

the corresponding competencies in students (Barak, Usher, 2019; Coursey, Paulus, Williams, and Kenworthy, 2018). This approach is associated with practice-oriented teaching, which implies the introduction of innovative models and cases that are relevant for the production sector into the educational process. (Baumann, Mantay, Swanger, Saganski and Stepke, 2016; Jackson, 2019). The main difficulties for students working on a project are unpreparedness for risk assessment, problems with reasoning when setting goals and subjective selection of performers (Likhacheva and Ognev, 2015).

The second plane of application of project activity in the university is the organization of the educational process. Teachers are given various tasks that need to be implemented in a short time, for example, developing an online course, holding an international student forum, organizing student practice, etc. Thorough and thoughtful management is a guarantee of effective project implementation. S.B. Lekhanov, analyzing the variety of approaches to the concept of "project management" and "educational project management", generalizes the idea of management as an integrated approach to the actions taken to achieve the goals in the field of education (Lekhanov, 2016).

Today, universities have already accumulated some knowledge base in the field of project activity (Barak, Watted, 2017). As noted by N.C. Jackson, an innovative approach to the use of educational technology is required to allow students to master existing courses and programs in accordance with their own needs rather than in a rigid curriculum sequence. (Jackson, 2019).The online resources accompanying the course can be united into a network of distance courses, which may even lead to deinstitutionalization.

The need to provide access to various information resources and educational materials due to lockdown in the spring of 2020 for the first time allowed students to use online courses from various educational institutions. The resource exchange has prepared an information base for possible future interaction, which can facilitate the transition from the limited use of such resources to the unlimited use of a variety of online programs. Undoubtedly, the very idea of certain degree of interchangeability has already influenced the educational process. This idea is one of the results of the experiment.

Drawing attention to the educational paradigm shift associated with lockdown and other measures introduced in 2020, a team of authors from the University of Oulu (Finland) notes that the forced use of digital resources in education has caused a sudden transformation in the field of digital technologies (Iivari, Sharma and Ventä-Olkkonen, 2020).The accessibility of resources, the availability of relevant skills and competencies are also part of the digitalization process, which, using the unique experience of the year 2020, can be organized more thoughtfully in the future.

The digitalization process, stimulated by the specific circumstances of quarantine, has long been making adjustments to the educational process. Thus, it is noted that mobile devices have forever changed the process of communication between students and teachers: communication takes place at any time of the day, regardless of whether it is a working day or a day off, which gradually reduces personal space (Santos, Batistaa and Marques, 2019). The current situation, as a result of which the entire educational process was transferred to a remote mode,

intensified the emerging transformation. Not only private, personal issues were discussed outside the time frames of educational process, but also educational ones. The remote interaction between students and teachers became continuous.

However, despite the seeming convenience of continuous interaction with teachers, a study conducted at the Polytechnic University of Bucharest (Romania) showed that the overwhelming majority of students prefer classroom work, less than 30% are ready for a mixed form, and an even smaller number of students – less than 20% – are ready for distance learning (Fleaca and Stanciu, 2019).The face-to-face classes with teachers were also rated more engaging than the video courses.

Despite the fact that the mechanisms for introducing distance learning are not fully developed, in March 2020, due to the pandemic, total digitalization became a priority project in the field of education. Before that, the entire educational process had never had to be shifted to distance learning only.

III. RESEARCH QUESTIONS

3.1 How is the project method used in higher education and what features does it have?

3.2 How and in what direction should digitalization develop? How should the management of this project be organized to achieve the set goals?

3.3 What is the prospect of digitalization for the educational process? What goals should the university set in order to get the most out of the project?

3.4 What difficulties stand in the way of digitalization? What can negatively affect project implementation and management?

IV. PURPOSE OF THE STUDY

The purpose of the research is to study the impact of the convergence of digital infrastructure and education on social and economic processes and develop recommendations for the design of the educational ecosystem.

V. RESEARCH METHODS

In the course of the study, quantitative methods were used, the analytical processing of the survey results and their comparative analysis were carried out. The use of survey methods made it possible to study and evaluate the advantages and disadvantages of introducing digitalization into the educational environment, obtain first-hand information and analyze the experience gained by the participants in the process.

VI. FINDINGS

The exclusive use of digital educational resources and means of communication, distance learning and online courses for several months allowed both teachers and students to gain invaluable experience. All of them were able to assess the advantages and disadvantages of the distance learning. An important factor of the "experiment" being carried out was its inevitability in the current situation. As shown by the survey of undergraduate students of the Saint-Petersburg Electrotechnical University ETU "LETI" (Russia) (38 people agreed to answer the questions in total), the students, in general, coped with rapid total transition to digitalization.

They evaluate the past period mainly as a valuable experience, but are not ready to continue the experiment.

More than half of the respondents (22 people) answered that they were "very tired", another 14 students defined their condition as "depressive", and only 13 noted that "it is easier to work from home". When assessing the level of motivation, half of the respondents admitted that motivation decreased, and only 4 students noticed an increase in motivation.

Evaluating the educational process, the majority (21 people) admitted that it was much more difficult to study remotely, and only a quarter considered it easier (Fig. 1.).
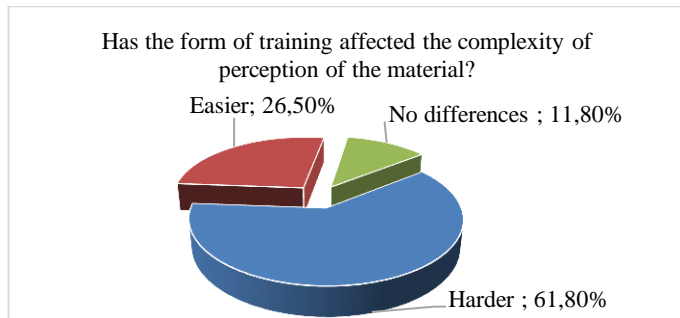

Fig. 1. Students' perception of the learning process in remote form

Recalling the distribution of time during the period of distance learning, students claimed that much more time was spent on mastering the material (80% of respondents), and only 10% of respondents admitted that they spent less or as much time as in the usual mode (Fig. 2)
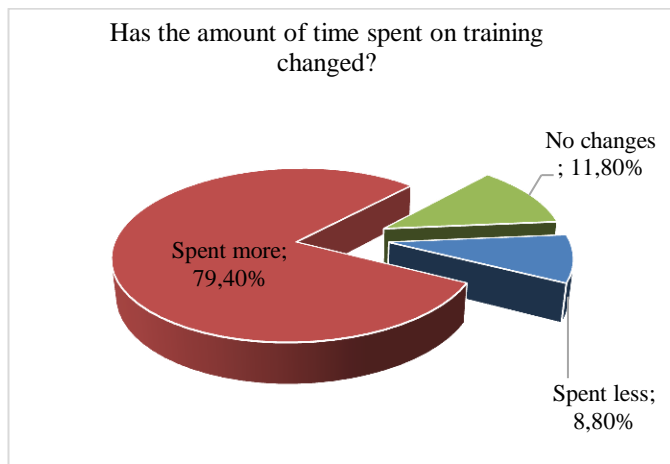

Fig. 2. Evaluation by students of time spent on distance learning

Assessing the number of materials that had to be studied, half of the respondents noted that there were much more of them, approximately equal number of students (25% of respondents) answered that there were less or as much materials as always.

With regard to interaction with teachers, the majority – 60% – said that they lacked interaction, since they interacted much less than usual. Only 4 students admitted that they communicated with teachers much more often.

A third of the respondents believed that in the traditional classroom mode they could have learned more, and it would

have been more interesting to study the material. The rest are convinced that the volume of learned and mastered material has not changed regardless of the type of class (online/offline)

Evaluating the presentation of the material and interest, half of the students (19 people) noted the creative approach of the teachers and interesting tasks, while the same number of respondents admitted that it was much more difficult to complete even interesting tasks.

Self-study of a large volume of educational material made some students think about the role of the teacher.6 students decided that they can easily study the material without the help of a teacher. However, the overwhelming majority admitted that it is both easier and more interesting to work with a teacher in the classroom.

From the positive observations made by students, the following considerations deserve attention: It is convenient to keep all materials at hand, there is no need to write something down, it is possible to store all materials in electronic form.

Among the greatest disadvantages of such activity, students noted the inability to concentrate, structure time and organize themselves.

The overall assessment of the educational process turned out to be quite high, two-thirds of the students were satisfied with the result, they were interested, they liked the conditions, and the impressions were positive. However, even they would mostly refuse to repeat the experiment (Fig. 3).
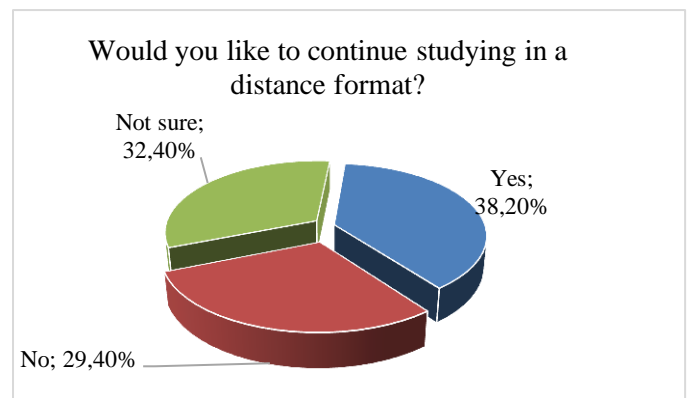

Fig. 3. Attitude of students to the prospect of continuing their education in a distance form

The majority of students (70%), summing up the experience of distance learning, admitted that it will be useful in the future.

As comments, students noted the lack of unification of the process, an excessive variety of resources and platforms for work, some inconsistency and a large volume of tasks.

As follows from the results of the study, in order to achieve effective digitalization of education, it is necessary to combine teaching methods and supplement classroom activities with distance technologies, then it will be possible to avoid unnecessary fatigue while maintaining motivation at the proper level. As a recommendation for the further use of the developed methods and distance programs, the development of the individual trajectory of each discipline, on the one hand,

and the interchangeability of resources, on the other, should be noted.

Thoughtful management of the educational digitalization project made it possible to develop not only individual elements for distance learning, but also complex platforms for the implementation of the entire educational process. Innovative solutions in this area will find application in the process of further development of digitalization of education.

VII. CONCLUSION

Summing up the results of the implementation of the project, which was developed in response to the changed external conditions and aimed at mastering the educational program in a distance mode, we note that the gradual establishment of control over the process led to the achievement of a positive result. Therefore, the application of project management methods in the educational model, which are used in business and economics, can help to achieve the goal and increase work efficiency.

A survey of students showed that the experiment on global digitalization was successful as a one-time project.The suddenness of its implementation had a negative impact on management, but a positive effect was achieved.The most difficult was the process of organizing activities, which indicates insufficiently effective management of the process.Going back to the theoretical thesis that states that the criteria of time, funding and quality determine the success of the project, it should be noted that, given the limited amount of time, the project was implemented on time, the quality of the results corresponded with the quality of the results of traditional forms of learning, and there was no need to leverage additional financial resources to create online resources to establish educational process, which does not allow us to recognize the management of this project as fully successful.

The data obtained in the course of the survey indicate the ambiguity of the large-scale implementation of digital technologies in the educational process, show the readiness to use online resources only as an addition to the main educational classroom programs, and also indicate the need to refine the digital educational process and principles of its management.

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