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THE INTEGRATION OF PROJECT METHOD IN UNIVERSITY EDUCATIONAL TECHNOLOGIES

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Abstract

The article shows the theoretical and practical aspects of the project method integration in the process of professional training of higher education students. The experience of using the project method in teaching students of the Novosibirsk State Technical University is analyzed. In order to reach the aims of the study, such methods as survey, included observations and in-depth interviews were used. There are results of a two-stage study of the project method influence on the formation of students' key competencies and on their motivation for continuing academic education and building a postgraduate career. At the first stage from 2007 to 2017 the experience of using the project method in the framework of academic disciplines was studied, as well as its influence on determining the topics of thesis and the formation of professional competencies of graduates. At the second stage from 2017 to 2019, there was a study that allowed us to draw a conclusion about the advantages of introducing the discipline "Project Activities" into bachelor programs. The article presents the results of the project method integration into the educational process. The connection between research and project activities, as well as the phased involvement of students in project activities through various forms of training and their effects are shown.

Keywords: Integration, motivation, professional competencies, project activities, project method, research activities

1. Introduction

1.1. Global Tendencies in the Development of Higher Education System

The modern system of higher education should be aimed at training professionals who are able to make effective administrative decisions in various spheres of life. Project-oriented education in the system of university training is a response to the challenges of the socio-economic and cultural environment, which is undergoing dynamic transformation processes and demands from graduates to possess not only general cultural and professional competencies, but also the qualities of creative, project thinking. This tendency in higher education is a global pattern. This is why in recent years the attention of scientists from different countries has been geared to the integration of education and the actual tasks of practice in different market segments (Ayensa et al., 2019; Fernandes et al., 2018; Rios et al., 2010; Tan & Vicente, 2019; Wu & Wu, 2020).

In the works of Russian and foreign scientists, the modern society is presented as permanently learning one, and in the conditions of a paradigm shift in target markets, there is an urgent need to modernize educational technologies and choose the most effective ones that work to improve the quality of training (Dušek, 2019; Odarich, 2017; Vylegzhanina, 2019; Ye et al., 2017). The actual requirements of the labor market today are based not only on theoretical or expert knowledge, they also include, first of all, practical skills, such as the ability to solve problems, to communicate effectively, to collect and analyze information and also to be able to work alone and in team, to develop motivation for lifelong learning (Dušek, 2019).

The modern educational process is undergoing systemic changes, in both educational technologies and the methods of training specialists. According to foreign experience, this fact will turn the educational process into "learning focused on current social challenges" (Kłeczek et al., 2020; Martin et al., 2007). Nowadays the European Higher Education Area (EHEA) encourages the usage of active learning methodologies through practice and the development of curricula focused on the acquisition of key competencies based on the project method (Ayensa et al., 2019). These changes in the educational area show the relevance of conducting new scientific research, which allows determining the degree of effectiveness of the project method as the main instrument and its impact on the motivation of students to research and collaborate with employers (Crowe & Boe, 2019, Fernandes et al., 2018; Kobarg et al., 2018).

1.2. Advantages of Project Method as Innovative Educational Technology

The project method in education is not very innovative for the Russian educational area, but its practical significance is still of a great value. According to the works of Russian researchers, currently there is the fourth stage of organizing project activities in the Russian Federation, and its main work is aimed at improving the quality of the project method implementation in education and youth policy. At this stage, different tasks are solved, ranging from the choice of topical frames of project to issues of organizing events that support project activities at university (Ivanova & Pastukhova, 2018). The analysis of using the foreign universities experience, when introducing the project method into the educational process showed its high efficiency as a method that contributes to the formation of creative, innovative thinking, which is so

necessary today in the context of a dynamically developing economics and social institutions (Ayensa et al., 2019; Kazun & Pastukhova, 2018; Rios et al., 2010; Wu & Wu, 2020).

Considering the foreign experience in using the project method in universities, we can conclude that it is especially relevant for bachelor students in humanitarian and socio-economic specialties, where graduates have to deal with complex multi-factor processes in practice. Various problems that sometimes "pop up" in the socio-economic and cultural spheres require a timely search for their solutions. The most effective way is project learning, which allows students to form the ability to respond quickly and creatively to the "challenges" of the environment.

Most researchers rightly point out the following advantages of using the project method in education: the formation of key competencies for quick response to changing labor market requirements; easier acquisition of technical, personal and contextual competencies; the ability to solve actual problems in the professional sphere; integration of educational and research activities; increasing the level of personal motivation and the development of personal qualities of students involved in project activities (Dušek, 2019; Odarich, 2017; Wu & Wu, 2020). The accumulated experience of integrating the project method in the area of higher education has allowed researchers to identify problems in the organization of project education: poor project method development if implementing it in practice, the difficulties of collaboration between universities and companies (Fernandes et al., 2018; Ruoslahti, 2020). One of the difficulties is due to the fact that the connection between the student's research work and project activities is not always established. Other scientists think that the reason lies in the weak motivation of students to project activities in the educational process (Vylegzhanina, 2019; Zainulina, 2016).

Therefore, the formation of personal motivation to develop projects that have social significance and targeted nature is very important in the organization of students' project work. An interested student can develop a project solution to problems, for example, for small target groups having trouble in adapting to social life. The technology and methodology of socio-cultural project activities, representing the synergy of research and creative activity, are aimed at this.

2. Problem Statement

2.1. Research Problems

The problem of this study is the connection between research and project activities of students of higher educational institutions and it includes the analysis of theoretical and practical aspects of integrating the project method into the process of professional training of managers and the further construction and development of a postgraduate career.

The basis of the project approach and project learning at university is the project method, which provides continuous project learning, while a student studies academic disciplines, which are the part of educational program.

The article presents the experience of using the project method in the educational process as an experiment based on Novosibirsk State Technical University (hereinafter NSTU) for training bachelors in specialties: "Tourism", "Service", "Management" (profiles: Marketing, Management in the Tourism Industry, Management in Social and Cultural Sphere); and masters in "Management" (profile: Marketing).

2.2. Research Hypothesis

The working hypothesis of this study is based on the assumption that the usage of the project method in the educational area of university is an important part of the realization of research and project activities in the bachelor training system. It motivates students to continue their education in master program, activates creative thinking skills when making research or thesis and determines the choice of organization in which a student can realize one's project ideas after graduation.

From our point of view, the project method is useful for those spheres, which involve human factor, as far as the method can become this instrument in higher education, with the help of which you can more quickly respond to requests from employers.

The integration of the project method into educational technologies is quite capable of forming the necessary competencies for students aimed at the practical realization of the goals and tasks of modern society; and the problematic approach, which is a part of socio-cultural project activity, allows students to develop skills in diagnosing and identifying actual problems. In the learning process, students are involved in project activities through various educational forms: from creating term projects and participating in research activities at university to taking part in collective projects and preparing the project part of thesis. All this determines the formation of a steady scientific interest in the topic of research during four years of study in bachelor programs and motivates a student to continue further work on the topic of the project. Thus, a motivation is formed to continue education in master program and to build a post-graduate career based on acquired skills of research and project activities.

3. Research Questions

3.1. Which effects are possible to get because of integrating project method in university?

3.2. Can participating in research and project activities by bachelor students be considered as a driver for entering master program?

3.3. How does the participation of students in research activity affect their choice of thesis topic and its further realization in practice**?**

4. Purpose of the Study

The purpose of the research is to study the influence of the project method in teaching students of higher educational institutions on the formation of key competencies of a professional personality and motivation for lifelong learning in order to build a post-graduate career.

5. Research Methods

5.1. In order to meet the research goals, a written survey was conducted with students, masters and bachelor-graduates in "Management" (the profiles of Management in the Tourism Industry, Management in the Social and Cultural Sphere, Marketing); masters in "Marketing", profile "Management", from 2 September, 2019 to 25 December, 2019 using the questionnaire developed by the authors.

The questionnaire included ten closed-ended questions and two questions in which a respondent noted the university and the specialty (profile) where one studies and/or studied.

The questions were divided into three groups, each of which allowed us to make the connection between research and project activities, as well as to identify forms of using the results of respondents' scientific, technical and project activities.

5.2. There was an in-depth interview in order to study the motives for entering a master program and choosing the topic of a master's thesis with master-students in the first and second courses in the specialties "Management", profile in Marketing.

5.3. Remote observing took place from 2007 to 2019. The authors of the article monitored the students' project activities while their study of some academic disciplines and supervised the research and development of student projects, contacted organizations where students tested their projects.

As a result of remote observing during these years, the authors managed to collect a lot of empiric material for further research.

6. Findings

The organization of the study to identify the advantages of integrating the project method into educational technologies can be divided into two stages: preparatory and main ones.

6.1. The Results of Preparatory Research Stage

The first, preparatory stage included the period from 2007 to 2017. The main purpose of this stage was to study the involvement in research activities of students, who studied in the specialty "Social and Cultural Service and Tourism", in profiles "Service" and "Tourism". It is important to note, that during this period there was no special discipline "Project Activities" in the curriculum of the university. However, the development and further implementation of the socio-cultural project was carried out by students in other disciplines, such as: "Socio-cultural Project Activity", "Excursion Activity", "Innovations in the Service Industry", etc.

The monograph on the use of alternative technologies in students' projects presents the results of socio-cultural project activities from 2007 to 2017 (Zagorskaya & Nazarkina, 2017). The projects have strong socio-cultural nature and they are focused on the use of cultural, leisure and recreational technologies in working with different target groups.

As a result of monitoring the market of socio-cultural services in Novosibirsk and diagnosing the current problems of cultural and leisure institutions of the city, students developed 75 social projects over this period. A study of project topics showed that they were focused mainly on social and cultural rehabilitation of such target groups as marginalized people, children with disabilities and people of the "third age". The phased work on a project over several years in 90% of cases ended with writing final thesis, which included the already developed and in some cases the completed project or part of it, which was the logical conclusion of all student's research and project activities during the study in high school (Zagorskaya & Nazarkina, 2017).

At the first stage of integrating the project method into educational process, students developed practical skills in socio-cultural project activities. There was a steady tendency for students to participate actively in project activities, most of which presented their projects in thesis and got experience after their implementation in practice.

6.2. 6.2. The Main Research Stage and Its Results

The second stage of the study was conducted in 2017-2019. The need to continue this study was caused by the introduction of project learning as a system in the educational process of NSTU in 2017 and the discipline "Project Activities" was added to the curriculum of bachelor program. Therefore, the authors have increased interest in studying the connection between student participation in research and project activities, as well as their further implementation of the results when determining the topics of thesis and the emergence of motivation for further scientific research in the framework of master program.

To solve the problem of the second stage, the authors compiled secondary and primary information:

- reports of student research activity;
- information from the section "Project Activities" of the NSTU site;
- the survey of students, masters and graduates;
- in-depth interview of students.

The survey of students, masters and graduates took place from 2 September, 2019 to 25 December, 2019. There was 204 respondents, they are:

- third and fourth year students in specialty of "Management", profiles "Marketing", "Management in Tourism Industry", "Management in Social and Cultural Sphere" – 106 people;
- first and second year masters in specialty "Management", profile "Marketing" – 20 people;
- graduates of 2017-2019 in specialty "Management", profiles "Marketing", "Management in Tourism Sphere", "Management in Social and Cultural Sphere" – 78 people.

First of all, the question of the connection between research and project activities in educational process of the above students was studied. Among the surveyed third and fourth year students in bachelor program (106 people), 78 people took part in research, practical and project activities (74% of the students surveyed). Among this group, 37 students took an active part in research and practical events and 25 of them began to participate in conferences and competitions from the first year.

For 2017-2019 students took part in ten conferences of various levels: five international conferences, three All-Russian and two university ones, for example, the XXIII International Scientific-practical Conference "Science for Service"; IX Eurasian Economic Youth Forum "Asia – Russia – Africa: the Economy of the Future; International Scientific-practical Conference "Tourism and the Present: State,

Problems and Development Forecasts"; IV All-Russian Student Scientific-practical Conference "Society and Culture: Problems, Trends, Prospects", etc.

As a result of the conferences, more than 70 articles were published on marketing and service profiles, including those indexed in the Scopus scientometric system. A significant part of the published articles is devoted to socially significant issues. For example, "A Study of the Potential of Cultural and Recreational Institutions in Working with Children with Autism Spectrum Disorders", "Features of the Organization of Cultural Events for the Students", "Possibilities of Socio-cultural Adaptation for People with Visual Impairment", "The Influence of the "Snob" Effect on the Formation of the Art Market of Siberian Cities", "Technology of Event in the Promotion of Cultural and Leisure Services for Students", etc.

The number of students surveyed, who participated in project activities was 41 people (52%) and 15 of them simultaneously took part in projects and scientific-practical events. The participation in the V International Student Conference "Service and Tourism" with a report on "Features of the Implementation of the Territories Marketing in Russia" determined for the student the further field of research and involvement in the project "Development of Tourism in the Novosibirsk Region and the Formation of Its Image" within the discipline "Project activities".

The survey results of 20 masters (first and second year) showed that 17 students under the master program "Marketing", profile "Management" took part in research and project activities during their bachelor program. The obtained results of scientific research and completed projects were used when choosing and writing thesis by 10 of 17 masters, this fact confirms the assumption about the connection between research and project activities as the basis for writing a thesis.

In the course of studying the motivation of bachelors for entering master program, as one of the objectives of this study, we used the in-depth interview method. All 100% of the respondents participating in the interview noted that they needed to continue their studies in master program for career growth and self-development as a specialist in a certain field of knowledge. Ten masters said that "there was also some incompleteness in the scientific research carried out during the period of study in bachelor program", and therefore they decided to continue work on the master's thesis on the topics of previous studies.

The results of scientific and practical activities of nine students were continued in projects implemented within the framework of the discipline "Project Activities". For example, the student's research work on the topic "Technology of Event in the Promotion of Cultural and Leisure Services for Students" was furthered in the project "Socio-cultural Support of the International Design Festival "Krasny Prospekt" in the framework of the discipline "Project Activities". It was further implemented in the project part of the master's thesis on the topic "Evaluation of the Effectiveness of Events to Promote Services in the Regional Market".

Four respondents noted that they would continue their research in the field of socio-cultural project activity for writing a master's thesis. The masters noticed that in the development of any project, including a socio-cultural project, knowledge and skills in the field of marketing research are necessary. Therefore, they explained one of the reasons for choosing the master program "Marketing" by the need to obtain professional competencies in the field of marketing.

During the second stage of the study, feedback was established with graduates of 2017-2019. The number of respondents was 78 people. Among them, there are 63 bachelors and 15 master.

There are the answers about their participation in research and project activities:

- bachelors: 25 people participated only in conferences, competitions, contests; 18 people – only in project activities; 10 people participated both in research and project activities during the whole program; 25 – did not participate;
- masters: 6 people participated only in research activity; 3 – in project activity (during bachelor program); 6 – both in research and project activities.

Of the 53 graduates who participated in scientific conferences, competitions, projects, 38 chose the theme of the bachelor and (or) master thesis on topics previously studied by them.

Thus, summarizing the results of the second stage, we can say that the introduction of the discipline "Project Activities" in the curriculum of educational programs showed the following results:

- involvement of students into project activities, which help future specialists to form competencies for creation and realization of commercial and social projects;
- creation of projects, which have significant research base that students acquire through research activity during first and second year of study;

The choice of bachelor/master thesis topic in accordance with accumulated knowledge and skills, acquired through project activities.

7. Conclusion

7.1. Main Effects from Integration to Project Method into Educational Technologies of NSTU

As a result of the study, we can conclude that the integration of the project method into the educational process of the Novosibirsk State Technical University in the above specialties contributed to the following effects:

- students involved in the project activities acquire skills for defining problems, identifying object and subject of research, goal-setting, creating the concept of research;
- students gain practical experience in developing a research program and organizing the research process in accordance with its goals and objectives;
- students use modern scientific methods of collecting and analyzing information and present the results of research at scientific and practical events of various levels;
- research activity motivates students to develop working hypotheses, project ideas and helps them to diversify ideas in terms of economic and social efficiency;
- participation in project activities increases students' interest in choosing the relevant topic of the project and stimulates many students to test their ideas in various organizations;

consistent "immersion" of students in the topic of research throughout the entire period of study is manifested through participation in various forms of project activity and contributes to the formation of motivation to continue research and project activities during master program.

7.2. The Results of Effectiveness Research of Project Method in Professional Training of Students in NSTU

A comparative analysis of the project learning organization at NSTU at two stages showed the advantages of integrating the project method into educational technologies at the second stage, since the introduction of the discipline "Project Activities" in the educational programs of the university allowed achieving greater results than at the first stage, when the project method was used by teachers only in academic disciplines involving the development of projects. The following results have been achieved:

1. It was possible to attract more students to the development of projects than at the preparatory stage.

2. The students' interest in research activity, starting from the second year, and motivation to participate in various kinds of scientific and practical events, both at the university and beyond, increased.

3. The project method allowed students to develop project thinking, project teamwork skills as a basis for building a successful post-graduate career.

4. The quality of the bachelor and master theses of those students who purposefully participated in project activities at the university increased.

5. During the project activities at the second stage, students learned to make decisions more quickly in response to the "challenges" of the environment and appreciated the advantages of the collaboration of the university and organizations in practice.

In general, according to the results, it can be argued that the participation of students of bachelor program in research and project activities is the leading motive for continuing education and for choosing the direction of further professional activity.

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