Advances in Economics, Business and Management Research, volume 81
1st International Scientific Conference "Modern Management Trends and the Digital Economy: from Regional Development to Global Economic Growth" (MTDE 2019)

The efficient use of project activities in the context of modern digital educational environment

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***Abstract* – The purpose of the paper is to analyze the ways to make the use of project activities more efficient in the context of modern digital educational environment. One of the indicators of high quality of educatory process is a widespread adoption of electronic technologies. Project-based method is considered to be one of the most effective technologies in practice-oriented studying. In this study, advantages of project activities within digitalization are considered. Special attention is paid to the study of students' motivation during the implementation of e-learning projects. Project-based learning provides the opportunity to use different technologies: cooperation, problem-based learning, modular studies. The project method can be used in various fields of scientific and educational activities and make the students possible to obtain self-determination, self-actualization, self-realization, development of individuality, socialization, responsibility formation, ability to work independently. To find out the level of students' motivation while carrying out educational projects within digitalization, a study and a survey were conducted. The principal conclusions drawn by the authors of the paper are the following ones. To make the use of the project method in the context of modern digital educational environment more effective it is important - to overcome the reluctance of teachers in higher educational institutions to adapt their training courses to project based method;**
-to teach students to use computer programs necessary for competent implementation of the project;
- to strengthen student's motivation to implement educational projects using digital technology.

Keywords — digital educational environment, project activities, skills, educatory process, information society, empirical findings, value orientation, skill shaping, pedagogical influence, higher education institution.

I. INTRODUCTION

Currently, employers consider that graduates should meet their requirements. This problem is increasingly discussed. Graduates are to acquire skills of self-education and the ability to put theoretical knowledge into practice. Compliance with these requirements allows to become successful in a professional career. The learning process in higher education institutions should not only meet the requirements of the innovative digital environment, but also be practice-oriented.

As a result, the research of the active use of project activities in the digital educational environment is increasingly relevant. Studies dealing with these scientific problems are often complex and include multidisciplinary issues.

The study of the problem from the standpoint of pedagogy is relevant, because students, implementing a project, not only gain knowledge but also form conceptions of the role of the young generation in society. They also learn about the advantages and disadvantages of studying in the modern digital educational environment. In the field of pedagogic sciences, the issue of using the educational potential of project activities within digitalization is insufficiently studied.

The purpose of the paper is to analyze the ways to make the use of project activities more efficient in the context of the modern digital educational environment.

The paper is structured as follows: Section 2 reviews the project activities and digital educational environment related literature, Section 3 presents the methodology, Section 4 analyses the empirical results obtained, and Section 5 presents the conclusion.

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II. LITERATURE REVIEW

The issues of using project activities and digital educational environment were developed and discussed by many researchers. Various scholars have analyzed how project activities prepare young people for life and professional self-determination (Allen, S., Campbell, P. B., Dierking, L. D., Flagg, B. N., Friedman, A. J., Garibay, C., & Ucko, D. A. [2]). A great number of scholars concentrate on children's education projects considering special categories of children such as talented teenagers or children with disabilities (Beycan [4]; Verden & Murphy [10]). Some other authors investigate adult education projects and explored peculiarities of project activities using in high school (Stein [8]; Rule [7]; Wagner, D. A., Day, B., James, T., Kozma, R. B., Miller, J., & Unwin [9]). Abramova N. S., Gladkov M. N., Gladkov A. V., Kutepov M. M., And V. Trufanova [1] studied the use of projects in e-learning and the role of the teacher in the initiation of project activities. Alhomod & Shafi identified success factors of e-learning projects [3]. However, until now there have been no attempts to study the advantages and features of the use of project activities in the context of digitalization.

M.E. Manshin believes that modern higher education establishments should contribute to the development of skilled professionals who are ready for constant self-education. According to this conception, it is important to develop cognitive independence of students. This process is effective if multimedia technology is successfully used in educational activities [6].

S. Alhomod & M. M. Shafi note in his research that the new technology e-learning, the essence of which is to eliminate obstacles between the teacher and the student with the help of modern means of telecommunications, contributes to the increase of teachers' productivity [3].

O.N. Demushina, Y.G. Semikina, D.V. Semikin, I.G. Tomareva, L.A. Maryanina studying the project activity within digitalization, consider that it is a form of active learning and it is the most important feature of the project method because it corresponds to students' personal interests [5].

Abramova N.S., Gladkov M.N., Gladkov A.V., Kutepov M.M., And V. Trufanova, analyzing the using of projects in e-learning, point out that this method enables a systematic integration of scientific knowledge and practical skills, that is why the project activity plays a special part in while studying in higher education institutions [1].

Discussing different aspects of project activities through the digital media all the researchers agree about the benefits it brings. In this paper, we investigate advantages of projects used in higher education institutions and students' attitude to implementing education projects in a digital environment.

III. METHODS

The research tool was a survey with 10 questions grouped into two main sections. The first one collected data evaluating students' awareness towards education projects used in universities. The second section was designed to receive information about students' willingness and readiness to participate in such projects.

The study was conducted in the winter of 2019 among the randomly selected students of the following Volgograd universities: the Volgograd Institute of Management, the Volgograd Pedagogical University, and the Volgograd Technical University which are considered to be the biggest and the most important universities in Volgograd. The study sample comprised the full-time students of all the areas of study enrolled in undergraduate and graduate study programs. Each student was given an anonymous self-administered coded questionnaire and was asked to mark the correct option. Several questions were supplemented by the possibility to add own comments. The students were assured that the collected information would remain confidential. The questionnaire did not contain any information that could be used to identify the participants. They were not required to provide their names. The answers sheets were collected immediately after the students had marked their options.

The data was analyzed using the SPSS statistics software package in order to produce descriptive statistics and verify the reliability of the scale.

IV. RESULTS AND DISCUSSION

In this paper, we present the results of the investigation of the efficient use of project activities in the context of the modern digital educational environment. Despite the great potential of the project-based method within digitalization it still did not become a widespread phenomenon in the system of high learning. Exploring the present situation, practitioners conclude that teachers in higher educational institutions do not use all the benefits of project activities. The following are among the reasons for this situation:

1) Reluctance of teachers in higher educational institutions to adapt their training courses to the project-based method.

2) Lack of student's motivation to implement educational projects using digital technology.

3) Student's inability to use computer programs necessary for competent implementation of the project.

Although the potential of the efficient use of project activities in the context of modern digital educational environment has not been fully realized in Russia yet, more and more teachers in higher educational institutions begin to understand its importance and try to use its benefits. The findings of the analysis of the most significant ways to make the use of project activities more efficient in the context of modern digital educational environment are presented below.

The technology of project-based learning meets the requirements of practice-oriented studying, as it involves students in active educational and cognitive activities and helps to gain experience of self-education modelling. Project-based learning provides the opportunity to use different technologies: cooperation, problem-based learning, modular studies. During the implementation of projects, the student will need to carry out a range of required actions to implement the project successfully. The teacher, in turn, should competently structure the students' work. Nowadays, special attention is paid to digital projects. They can be used in

various fields of scientific and educational activities and make it possible to obtain self-determination, self-actualization, self-realization, development of individuality, socialization, responsibility formation, ability to work independently. Project activity helps the teacher to solve a very important task: to integrate each student into an active cognitive activity. The project method helps students to learn how to set goals and find the means and ways to achieve them. It should be noted that project activities have time and resource constraints, which, in turn, enhances its educational potential.

To find out the level of students' motivation while carrying out educational projects within digitalization, we conducted a study.

Students were offered topics for the group project. Students chose the problem of cultural and historical heritage formation during international events.

The purpose of the project: to summarize information about cultural and historical heritage of the 2018 FIFA World Cup in the Volgograd region and create a resource center in the form of an electronic page on the website of the Volgograd Institute of Management, branch of the Russian Academy of National Economy and Public Administration.

Typological characteristics of the project: creative, interdisciplinary, with open coordination of project participants, internal (within one institution), group project, long-term (can be performed during the term).

The project involves the study of mechanisms, means, and methods of formation and preservation of the cultural and historical heritage of the 2018 FIFA World Cup in the minds of the Volgograd region residents. Comprehension of the cultural and historical heritage of the 2018 FIFA World Cup in Russia and in the host cities makes it possible to understand how a mega-sports event can affect the worldview of members of society, their attitude, their motivation, etc.

Students need to collect information on the topic of the project (articles in the media, video reports, photos), make a catalog of links to electronic resources that provide this information, create an electronic page dedicated to the 2018 FIFA World Cup in Volgograd.

Programmes and electronic resources: Moodle, Abby Lingvo, Photoshop, Macromedia Flash Player, Adobe After Effects, Windows Movie Maker.

The eventual result: the creation of a resource center in the form of an electronic page on the website of the Volgograd Institute of Management, branch of the Russian Academy of National Economy and Public Administration.

The results of the students' team working were evaluated and discussed by students and educators-experts.

When the results of the project were discussed we conducted a survey to find out the level of students' motivation after carrying out educational projects within digitalization. In total 325 students were surveyed. Table 1 displays the sociodemographic characteristics of the respondents.

TABLE I. THE SOCIODEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS (%)

Gender	
Male	46
Female	54
Age	
17-18	30
19-20	30
21-22	20
23-24	20
University	
Volgograd Institute of Management	31
Volgograd Pedagogical University	29
Volgograd Technical University	21
Volgograd Medical Academy	19

TABLE II. MOTIVATION TO IMPLEMENT EDUCATIONAL PROJECTS USING DIGITAL TECHNOLOGIES

	Male	Female
to implement a project by means of digital technologies and justify the choice	92	87
to meet the requirements of employers	40	50
to be competitive in labour markets	42	60
to acquire the skills of self-education	35	42
to learn how to transfer knowledge into skills	35	38
to gain new knowledge	60	78
to learn how to use computer programs	38	52
to learn how to work within groups	25	30
to get awareness within the information field	61	76
to learn how to work according to the plan	48	53
to learn to analyze and interpret information	82	89
to submit a project to an audience and to assess project results (self-assessment)	89	92
to create material and knowledge products using digital technologies	66	72
to gain experience of individual and collective activity	35	77
to implement creative capacity using digital technologies	28	75

According to the analysis of the questionnaires, a significant part of students shows interest in technology of project-based learning and recognizes the motivation to implement educational projects using digital technologies.

92% of the male respondents and 87 female respondents implement a project by means of digital technologies and *justify the choice*. Just 20% of the surveyed students do not have any interest in using digital technologies and in project-based learning. It should be noted that interest in technology of project-based learning and in digital technologies depends on age and gender. According to the study, the male respondents over age 20 are more likely to have an interest in e-learning than women of the same age.

The majority of the respondents have a positive attitude towards project method. They consider that the most valuable feature of this method is that it creates conditions for obtaining theoretical knowledge and for solving particular problems in joint activities. Three thirds of the surveyed students assert that due to the diversity project learning is a means of development and self-development of an individual, a means of personal, cultural and professional formation. They believe that project-based learning will help them to meet the requirements of employers and to become competitive in labour markets. 27% consider that e-learning or digital

technologies will help them to learn how to work within groups.

The analysis of the findings allows to make a conclusion about the high level of the students' motivation to implement educational projects using digital technologies. Only a very small percentage (28% male respondents) fully believe that project-based method provides opportunity to implement creative capacity using digital technologies. On the contrary, the majority of the female respondents (75%) assert that project activity in the field of e-learning allows the students to realize creative potential and enables individual dynamic development since it involves the use of interdisciplinary links and problem-oriented forms of activity. Almost a third (38%) of the surveyed male students and a hail of female students (52%) would like to learn how to use computer programs with the help of project method.

A certain unanimity among the students can be observed towards the ways of information obtaining. 60% (61%) male respondents and 78% (76%) of female respondents suppose that digital learning gives them an opportunity to gain new knowledge, to get awareness within the information field. Most students believe that implementing a project and using computer programs they learn to analyze and interpret information (male 82%, female 89%). A half of respondents consider it is useful to learn how to work according to the plan (male 48%, female 53%). They agree that the planned achievements of the project help to enhance the motivation of participants and involve conscious use of the theoretical knowledge in practice.

Two thirds of respondents (male 66%, female 72%) consider it is interesting to create material and knowledge products using digital technologies because the result is not only a material object created by the project participants but also the experience gained in both collective and individual activities.

Project-based method helps young people to improve their interpersonal communication skills. Respondents (male 89%, female 92%) believe that project-based learning will help them to submit a project to an audience and to assess project results (self-assessment).

Thus, the results of the survey show that there is a real need for method of educational projects using digital technologies because it helps to implement the competence approach in education, as the project activity helps to develop a number of important competencies and implies an integrated approach to the work organization.

Modern digital educational environment gives students the opportunity to master special technologies and creates conditions for the formation of competencies needed in the professional field.

V. CONCLUSION

The study applied the analysis of the efficient use of project activities in the context of modern digital educational environment. We can conclude that modern requirements to the members of the society include the need for lifelong learning, which implies the ability to deal with the information field, to choose motivation, to obtain knowledge and skills etc. The advantages of the project activities are obvious. Students are taught the various types of independent work and they acquire a number of important skills: the ability to work according to prearranged plan, to experimentalize, to perform tasks alone or in group (in a group project), to use various sources to obtain information, to analyze and interpret the information according to the tasks, to implement the project using digital technology, to make decisions, to submit the project to the audience and evaluate the results of the work (introspection). A significant advantage can also be the interactivity of project method (the work includes not only the project participants, but also the perceiving audience). To make the use of the project method in the context of modern digital educational environment more effective it is important -

to overcome the reluctance of teachers in higher educational institutions to adapt their training courses to project based method;

-to teach students to use computer programs necessary for competent implementation of the project;

- to strengthen student's motivation to implement educational projects using digital technology.

The results of the presented study can be used to develop understanding of the efficient use of project activities in the context of modern digital educational environment. Further study can conduct a survey to find out students' opinions and attitudes towards digitalization of the educational process with the aim to strengthen their motivation to acquire the skills of self-education and to gain new knowledge.

Acknowledgment

This work has been supported by the Russian Foundation for Basic Research (project № 18-411-342005*)*

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