

Chapter 9

Application of Modern Educational Technologies for Managing Project Activities of Master of Education



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9.1 Introduction

The timeliness of the article's subject is determined by the global changes in socio-economic and cultural conditions of human life activities related to the development of postindustrial society where exactly education and science can fully enhance the human capital.

In this respect, a project activity opens the great opportunities aimed at spiritual and professional development of a Master's personality based on application of the modern educational and learning technologies considering the integration of the activity, student-centered, creative, competent, and methodological approaches.

The main challenge is to search and to select modern technologies for managing project activities of degree seekers in Masters of Education in the context of university education.

The purpose of the article is to justify the effectiveness of modern technologies for managing project activities of a Master of Education in the education process of a university.

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9.2 The Essence of the “Project Activities” Concept

The education modernization requires active application of innovations that admit further changes of approaches for construction of educational process, as well as construction of individual trajectories in vocational training of a Master. The teaching efficiency in the future will depend on his/her creative work and competence in innovative scientific activities. In view of this, an important prerequisite is a Master’s willingness to implement project activities.

The analysis of the “Standard rules for higher and postgraduate educational organizations activities” determines the quality of vocational training of Masters in the higher educational institutions of the country, and hence, its result is determined by many factors, including the high level of formation of key competencies, which play a leading role (Government of the Republic of Kazakhstan 2012):

- Subject-specific competences – possession of knowledge and its practical application in a changing environment
- Social competence – sociability, the ability to plan, cooperation skills, language proficiency
- Methodical competence – willingness to learn, ability to learn
- Personal competence – self-determination and decision-making ability

The following important professional competencies are to be formed:

- The ability to forecast, model, and define promising trends in the development of professional activities
- The willingness to design and modernize scientific and methodological activities
- The willingness to design innovative projects

Masyrova defines the concept of “project activities of a master” both the educational-informative and research-creative activity, which assumes uniqueness of the output or service created, and is a complex of motivational, cognitive, behavioral, and evaluative components (Masyrova et al. 2016, pp. 121–127).

In the context of the problem study, we will consider the structure and content of project activities.

The analysis of theoretical literature reveals the existence of many approaches for defining the structure of project activities. One of them is described in the concept of the enriched school education and reflected in the works of the number of modern researchers Drujynin (2007), Kolesnikova (2005), Pahomova (2005), etc. The authors consider the project structure as a triad consisting of:

1. Motivation (focus on project activities)
2. Productive (creative) thinking
3. A set of skills (cognitive, practical training)

We have identified the real state of awareness about the competence of Masters in project activities based on the survey with participation of 100 people. They were requested to answer questions relating to training in Master's degree programs and awareness of project activities. The question "Is a project activity an important part of a Masters' program?" was answered by 88% of Masters as important, but not enough to deal with it constantly. Twelve percent of Masters believe it is a very important and necessary in education. According to the response for the question "What type of project activities have you ever participated?" 22% of Masters have participated in writing of scientific projects in various scientific fields. Eighteen percent of Masters have publications about the project findings in the collections of scientific-practical conferences of various levels. Sixty percent of the respondents accepted the lack of experience in project activities. Then, we have offered Masters to evaluate their individual level of knowledge in the field of project activities. As a result, it was found out that 67% of Masters attribute themselves to the average level, 33% – to the lowest level. The question "Do you plan to do research in the field of project activity?" was answered by 48% of Masters of not excluding the possibility of radically changing the field of activity; 52% planned to deal with project activities.

These data indicate a lack of competence of the majority respondents in project activities. This enables to pin down a problem that needs to be considered while organizing a universal model of step-by-step and sequential formation of professional competences related to the project activities.

Any process is being developed according to certain stages and levels. We have drawn up and characterized a scale of levels and relevant indicators to differentiate Masters according to their degrees of competence in project activities. In the study, we defined three levels for formation of Masters' competence in project activities: sufficient, moderate, and initial.

The sufficient level of Masters' competence in project activities is determined by his/her sustainable interest in scientific-research activities and the presence of a constant positive motivation. Master's degree students show activity and initiative in implementation of project activities. They have the deep understanding of the nature, structure, and process of scientific-research activities.

The sufficient level is characterized by the ability of Master's degree students to analyze their activities and to identify ways and means of self-development. They conduct activities independently regardless of types of conditions. A Master of the sufficient level is a future scientist, focused on democratic style of work, able to work in a team and to take executive decisions. His/her general management skills are highly developed.

The moderate level of competence of Masters in project activities is defined by an indicator as a positive attitude toward this kind of activity, semi-independent implementation of the substantive work in a short period. Masters of the moderate level understand the necessity and importance of research skills in their work and

Table 9.1 The levels of Masters' competence formation in project activities

Level	Experimental group		Control group	
	Number	%	Number	%
High	4	8	3	6
Middle	10	20	11	22
Low	36	72	36	72

carry out these activities consciously, purposefully, but not regularly. At this level, they have weakly expressed motivation for independent research activities, nonsystemic possession of research skills, local knowledge, and superficial knowledge about the nature, structure, and process of the scientific-research activities. Masters understand the existence of link between knowledge and skills but face difficulties in application of knowledge in practice.

The initial level of Masters' competence in project activities is characterized by unstable interest and lack of motivation for scientific-research activities. Students do not realize the necessity and importance of applying research methods. They possess only certain types of project abilities. These skills are superficial, unsystematic, and insufficiently stable and are applied by students in the level of replication. Masters of this level prefer a strict guidance as compared with independence and initiative. As a result, Masters are dissatisfied with this type of activity and do not want to do academic work in their professional activities.

The next stage of the study was testing of the competence of Masters. A total of 100 Masters took part in the experimental-research work.

This stage of the study allowed making quantitative and qualitative characteristics of each level. The results of diagnostics of the Masters' levels of formation and competence in project activities are presented in Table 9.1. According to the knowledge levels, Masters were divided into two equal groups. Each group consisted of 50 Masters.

Based on the ascertaining stage of experiment, it was estimated the average value of the level of competence formation for control and experimental groups of Masters. The results showed the prevalence of the low level, 72% in the experimental group and 72% in the control group; middle level, 20% and 22%, respectively; and high level, 8% and 6%, respectively (Table 9.1).

Overall, the analysis of experimental data revealed the presence of contradictions between orientation of Masters for implementation of project activities and their weak theoretical and practical competence. The analysis of the findings resulted in the need for more focused training of Masters in project activities based on application of modern educational technologies.

Based on the findings of the ascertaining experiment and generalization of the foreign practical experience, we offer the following stages for project activities of Masters:

- Find project ideas
- Form the project team

- Form the project theme
- Define the project environment
- Plan the project
- Analyze the project
- Search for resources.
- Control execution of the project.
- Evaluate the project.
- Implement the project (create an output).

In organizing project activities of Masters, the implementation of the identified steps requires application of a set of modern educational technologies:

- Student-centered learning
- Self-developing learning technology
- Humane and personal technology
- Learning through play
- “Pedagogical workshops” technology
- Modular technology.

9.3 Conclusion

The analysis of the questionnaire data revealed the growing needs of Masters in project knowledge and skills.

A project activity of a Master’s degree student is an innovative method, uniting motivational, cognitive, behavioral, and evaluative components.

A project activity allows forming research, communicative, presentation, and managerial skills required for a Master in his/her independent life activity.

In the longer term, the materials of this study can serve as a basis for development of a special course for Master’s degree students “Arrangement of project activities of graduate students”.

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