

**II International Scientific Conference GCPMED 2019**  
**"Global Challenges and Prospects of the Modern Economic Development"**

**EVALUATING EFFECTIVENESS OF PROJECT-ORIENTED  
MODEL IN MANAGEMENT LEARNING**

T. F. Palei (a)\*, P. A. Afonin (b), Z. N. Sirazieva (c)  
\*Corresponding author

(a) Kazan Federal University, Butlerova str., 4, Kazan, Russian Federation, xy555@mail.ru  
(b) Kazan Federal University, Butlerova str., 4, Kazan, Russian Federation, h999mt@gmail.com  
(c) Kazan Federal University, Butlerova str., 4, Kazan, Russian Federation, nygnoe@mail.ru

*Abstract*

Growth of changes facilitates dynamics of consumer demand flexibility of organizational process and structure. Project-oriented management is one of such mechanisms of higher school transformation. Each educational, research, entrepreneurial and administrative project can be considered as the independent market product significantly raising indicators of university activity. Participants of educational process are integrated into project development therefore Groups of design training work on the customers' problems solution that increases interest of business in the University. The article describes scientific and methodological support for the implementation and evaluating the effectiveness of a project-oriented model for management learning and managing the educational process, scientific and commercial activities at the university. It includes methods for development of teaching and learning in business and management in the university in the aspect of project-oriented management model, the mechanism for changes implementation in the structure of business and management education and roles of management educators. The developed methodology for planning and assessing the effectiveness of a project-oriented model of management learning makes it possible to significantly facilitate the process of introducing project management in the university by identifying specific quantitative and qualitative performance indicators. The article includes the report on specific evaluation and planning efforts in the field of changes in the structure of management education.

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**Keywords:** Management education, project management model, learning design, competitive learning, university-industry interaction.



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## 1. Introduction

Nowadays universities are in a fundamental transformation, which consists of the transition from the university model of the post-Napoleon period, subordinated to the interests of science, to the "Third Generation University" model (Vissema, 2016).

If the universities of the first generation fulfilled only educational functions, the second-generation universities added scientific research and the third-generation universities included the entrepreneurship (Cosenz & Noto, 2018). This transformation is caused by changes in the priorities of state policy, the scale of globalization, demographic processes. Besides, the need to enter the world rankings of universities meant improvement of educational and innovation activities, development and implementation of measures to improve the level of competitiveness leading to the transformation of the university into an entrepreneurial organization (Bagautdinova, Gorelova, & Polyakova, 2016). This university is actively engaged in innovation activities, i.e. it differs from traditional motivation, direction of development, readiness to transform scientific knowledge into business ideas, to risk (Paley & Kornilova, 2014). With the growth of changes in the consumer demand, the flexibility of organizational processes and structures must be built. Project-oriented management and its service oriented architecture are mechanisms for such transformation of higher education. In Russia, where the style of authoritarian leadership has been formed for centuries at the macro and micro levels, mental barriers for the transition to the organic management principles are a serious problem. In this sense, universities should be prepared for such transition due to the traditions of academic freedom, collegial management, competitive replacement of vacant positions. However, this relative readiness does not mean that the new approach to management will be easily implemented in all universities. The link between the labour market and educational system is provided by consumers of education, i.e. the population forming the demand for educational services. At the same time, due to the significant time gap between demand creation for a particular type of education and the opportunity to present the diploma in the labor market, there is a significant imbalance between the demand for specialists and the release of their higher education system. The requirements for the educational system on the part of potential specialists and labour market may not coincide both in quality and quantity. Röpke (1994) in his work "Die Lehre von der Wirtschaft (The Problem of Economic Order)" wrote: "It is necessary to open the field for public and social policy in wide sense, though necessarily having such properties that would exclude its contradiction to the essence of the market economy". Government intervention in educational institutions may constrain the orientation of the educational institution to the labour market and changes in order to adapt to the market. This is precisely the freedom of entrepreneurial activity of educational institution management. The advantage of project management technology is that it can be used with available management tools and it does not require significant changes in the structure and processes of the institution. At the same time, each project can be viewed as an independent market product, which significantly improves the efficiency of the organization and qualitative indicators of the university activity.

The main task of implementing various projects by a higher educational institution is to create conditions for:

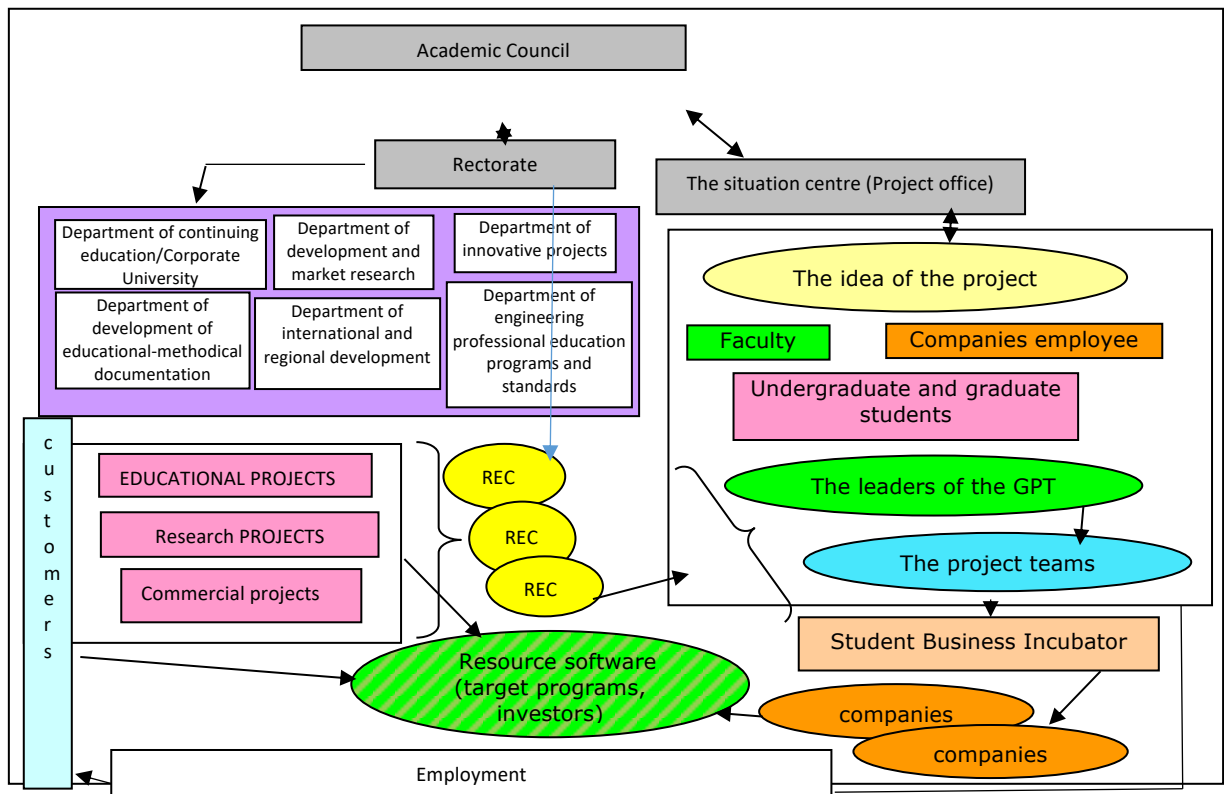
- staff training for the real sector of national economy, able to find job in the labor market in any country in the world and to increase their qualification. To do it, a multi-level system with flexible

internal capabilities that allows horizontal and vertical movements and that ensure the continuity of higher education programs is needed (Barron et al., 1998).

- increasing content knowledge and achievement of the world level of the scientific research and development through the university development as a scientific and educational center that effectively integrates professional education and research;

- development, introduction and expansion of effective technologies, formation of innovative entrepreneurial culture, support of innovation entrepreneurship (Lima, Lopes, Nassif, & da Silva, 2015).

Accordingly, the projects implemented at the university are divided into educational, research and business ones. The model of the project-oriented control in KFU is shown in Figure 01. The Academic Council forms a strategy. The Rectorate implements the developed strategy aimed at increasing the competitiveness of the University through project-oriented management. Projects initiated in response to customers' requests are realized within the framework of Research and Educational Centers (RECs) on the basis of the inter-departmental principle of interaction. The participants of educational process are integrated into the development of projects, like tutors, consultants and executors, as a result of which the Design Study Groups work on solving specific customer problems during their studies. Based on the results of project training they defend course, bachelor's and master's theses.



**Figure 01.** The model of project-oriented university management. Source: authors.

The most successful projects get into the Student Business Incubator. The team of specialists and masters in the project working process after graduating the University represents a problem-oriented

"personnel division" for profile firms or a ready business team for the organization of its own science-intensive enterprise.

The standard curriculum does not provide for a separate unit of project training. Therefore, to work on the project in the variable part of the curriculum, in the list of coursework and master's theses, correctives are introduced, taking into account the wishes of customers and heads of firms.

The proposed model for a project-oriented educational institution's team formation consists of the following elements:

1. Organizational structure analysis of the educational services field establishment, which allows identifying the directions of change in the communication and interaction nature between the educational institution units for the horizontal links development, assess the effectiveness of the powers and responsibilities distribution between levels of management, in the creation of new organizational structures.

2. Development of the professional-environmental competency structural scheme and psychological characteristics of employees (Matzembacher, Gonzales, & do Nascimento, 2019).

3. Development of the educational organization personnel policy and organizational culture.

4. Development of standards and legal regulation of the project team activity.

5. Creation of mechanisms for financing projects to optimize the educational organization economic policy.

6. Development of an information support system for project implementation.

## **2. Problem Statement**

In order to obtain social and professional recognition by the university educational programs, it is necessary to improve various ways and methods of interaction with employers, including questionnaires, involving employers' representatives in the expert evaluation of graduates' competencies. Scientific and methodological support for the implementation and evaluating the effectiveness of a project-oriented model for management learning and managing the educational process, scientific and commercial activities at the university is needed.

## **3. Research Questions**

The research questions for this paper were: How does the quality of organizational support of project training and methodological support of project preparation at the University assessed? How useful are knowledge gained in the project training course in future professional activity? To what extent will the project-based learning system allow more effective acquisition of competencies (knowledge, skills) compared to the traditional (process) approach to learning? How does the professionalism of the teaching staff evaluated?

## **4. Purpose of the Study**

Authors of the project developed a methodology for evaluating the effectiveness of a project-oriented management model (Salakhatdinova & Palei, 2015) in higher professional education, which

includes methods for determining the organizational, economic, social effectiveness of the project-oriented management model in the university, the mechanism for selecting evaluation criteria and the evaluation procedure, the methodology for conducting a survey of different groups of respondents: students, business leaders, pre-applicants, university management. The developed method for evaluating the effectiveness of a project-oriented management model in the field of higher professional education makes it possible to significantly facilitate the process of introducing project management in the university by identifying specific quantitative and qualitative performance indicators (Pelucha, Kveton, & Potluka, 2019).

## **5. Research Methods**

### **5.1. Design**

Evaluating the effectiveness of a project-oriented management model is based on the method of applied sociological research. The investigation aims to study the phenomenon of project-oriented education among teachers, students and executives, which allows monitoring empirically the current social processes, and drawing conclusions about the prospects and the need to promote problem oriented teaching methods in each of these three groups. The researchers did not interfere with the situation, condition and variables and did not control or distort them; they simply studied, described and examined the results.

### **5.2. Sample**

The statistical sample of this study is 20 teachers, 70 students and 99 executives and managers of Kazan (Russia) who were selected by using a cluster method. The cluster method of sampling is a technique, which divides individuals based on their in-group characteristics into various groups. In this study, the participants were rated on the basis of their geographical location and activity.

### **5.3. Instruments**

In order to estimate the statistical sample size, Chertsey and Morgan table was used. The following questionnaire has been employed to collect the data required for the purpose of study.

The correspondents were asked to evaluate project activities from 1 to 5 points.

Questions for students: How do you assess the quality of organizational support of project training at the University? How do you assess the quality of methodological support of project preparation of the University? How much knowledge gained in the project training course will be useful in your future professional activity? To what extent will the project-based learning system allow more effective acquisition of competencies (knowledge, skills) compared to the traditional (process) approach to learning? How do you evaluate the professionalism of the teaching staff in terms of the quality of teaching in the project preparation system.

Questions for the executives: To what extent are the projects implemented within the University in demand in practice? How students, trained on project approach, are popular as future professionals? Is it effective at present to involve heads of enterprises in the assessment of knowledge of students studying by the project method? Should the University implement business projects (that is, aimed at improving

the practical activities of enterprises)? Does the qualification of teachers meet the modern project approach to management?

Questions for the teachers: To what extent is the project approach to education and University activities in demand in the market of educational and scientific services? How do you assess the quality of methodological support of the University project training? Is it effective at present to involve heads of enterprises in the assessment of knowledge of students studying by the project method? Should the University implement business projects (that is, aimed at improving the practical activities of enterprises)? To what extent will the system of project-based training allow students to acquire more effectively competences (knowledge, skills, abilities) in comparison with the traditional (process) approach to learning?

#### **5.4. Administration method**

The survey was carried out after defending of master's theses by master students within the project groups of 5 people. In total 70 master students were prepared within the framework of project-based learning (PBL). Carrying out the survey took 15 - 20 minutes (per person), and it took 25 days to analyze and interpret the results. 189 questionnaires were filled in and returned.

## **6. Findings**

The survey showed that the majority of students (70%) consider PBL as a significant factor in improving the quality of vocational training. The willingness of teachers to the formation of project-oriented education 95% of undergraduates estimated as high. 100% of undergraduates were satisfied with efficiency of interaction of students with the labor market in the process of preparation of project learning.

To the question: "How will the system of PBL help to acquire the competencies (knowledge, skills, abilities) in comparison with the traditional (process) approach to education?" 59% of students gave an excellent rating. However, 20% of students (who gave an average rating of project approach to learning) and 11% of the students (which gave a satisfactory rating to the project approach to learning) noted the insufficient development and usage of project approach tools in pedagogical practice.

We would like especially to draw attention to the students' assessment of knowledge suitability gained in the project learning in their future professional activities. 68% of respondents gave an excellent rating of knowledge gained. However, the respondents noted the lack of quality of methodological support (only 29% of students are completely satisfied with its level) and organizational PBL support in high school (only 25% of students are completely satisfied with its level).

According to the results of executive survey of 99 companies involved in the implementation of the University project activities we have made the following conclusions. Heads of companies are skeptical about the relevance of the projects implemented in the framework of the University (46% of the respondents only gave a satisfactory response and only 13% gave a high rating).

In the opinion of the managers this assessment is linked to insufficient qualification of teaching staff of the University. Excellent assessment of staff qualification from the point of view of modern project approach to learning gave only 27% of respondents. From our point of view, it is more the lack of

experience of teaching in the framework of this approach. It should be noted that for a long time, teachers taught according to the traditional scheme (we have been using the process approach). And every transition from one learning system to another requires a long period of time.

In addition, the leaders noted a very high demand for students as future professionals who have received education within the framework of PBL. This high rating was given by 40% of managers. 33% of managers also note a fairly good level of this demand. However, their opinion about the demand for students as professionals affected the level of qualification of teaching staff and lack of effective involvement of business leaders (53% of the respondents gave a satisfactory rating) in teaching students and evaluating their knowledge.

## **7. Conclusion**

### **7.1. The key findings of the evaluation**

- a new management approach should not be implemented in the organization and "grown" in it from existing sprouts;
- organizational effectiveness of a project-oriented model is expressed in developing an interdisciplinary system of research units;
- executives are skeptical about the relevance of projects implemented in the University because of insufficient qualification of teaching staff of the University;
- there is very high demand for students as future professionals who have received education within the framework of PBL;
- it is necessary to find scientific and methodological support for the implementation and evaluating the effectiveness of a project-oriented model for managing the educational process, scientific and commercial activities at the university.

### **7.2. Limitations**

Our survey did not include much correspondents because of practical limitations restricted the collection only to 189 people. However, sufficient data were obtained for estimation of the effectiveness of project-based learning, confirmed by the verification of the evaluation of responses in different groups.

### **7.3. Future research**

Future studies might be pursued in an effort to identify targeted training opportunities by industries or life circle stage of the company. Additionally, the ability to complement standardized interviews with in-depth questions may help to identify underlying issues and ways to improve quality of planning the educational programmes.

### **7.4. Lessons learned**

The results of this study highlight the opportunities for advanced program evaluation at the organizational level when employers' opinion on the quality of students' training is leveraged beyond programmatic necessity for reportable counts. Additionally, surveys results may be used to quantify the return on investment for compliance training and education (Mehtcheriakova, Gurianov, & Gurianova,

2014). Thus, the effectiveness of university projects can be expressed in improving the education system as a whole, in the emergence of a variety of direct or indirect interpersonal, organizational, managerial and social effects.

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