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ПОДХОДА ПРИ ОБУЧЕНИИ СТУДЕНТОВ В УНИВЕРСИТЕТАХ**

*Аннотация:* наблюдаемый на протяжении последних десятилетий разрыв между квалификацией выпускников вузов и реальными потребностями рынка актуализирует задачу внедрения проектных образовательных технологий в высшем образовании. Целью главы является анализ результатов использования проектного подхода в российском вузе. Исследование проводилось в течение 3 лет с участием студентов первого курса. Исследование выявило основные преимущества и возможные препятствия на пути внедрения проектных технологий в российском высшем образовании. По результатам исследования наиболее значимыми положительными результатами внедрения проектных технологий стали полученный студентами опыт работы в команде и развитие коммуникативных навыков. Среди проблем, связанных с реализацией проектных задач, наиболее значимой явилась проблема выстраивания коммуникаций со сторонними организациями. Авторами сделан вывод о том, что сложности, связанные с участием в проектной работе, обусловлены спецификой российского среднего образования. На сегодняшний момент в средней школе доминируют традиционные методы обучения, что препятствует развитию у учеников практических навыков. Исследование показало, что пробелы в школьном образовании во многом можно устранить уже на первом году обучения в вузе. Приведенные выше данные позволяют сделать вывод о необходимости введения в школьные программы различных форм проектно-ориентированной деятельности. Результаты исследования имеют практическую значимость для преподавателей вузов, которые участвуют в руководстве проектной деятельностью студентов-первокурсников.

**Ключевые слова:** высшее образование, проектное обучение, сотрудничество, социальный проект, организация проектной деятельности.

**Abstract:** *the gap between qualification of university graduates and real market demands, which has been observed over the last decades, reveals the challenge of deploying project-based educational technologies in higher education. The chapter is aimed at analyzing findings of applying a project-based approach in higher education in Russia. The study was carried out over the period of 3 years involving interviews of freshmen. The research discloses the major benefits and possible hurdles engaged in the process of introducing project-based technology in Russian higher education. The most significant positive results noted by the respondents, were the acquisition of team work experience and development of communication skills. Among the problems associated with the implementation of project tasks, the greatest challenge is presented by the task of building communications with outside organizations. A conclusion was drawn that the key obstacles for first-year students are linked to secondary school education. This can be explained by the current dominating role of traditional teaching methods at schools discouraging the development of practical skills. The study has shown that gaps in school education can be largely solved already in the first year within the framework of project-based learning. The above given evidence makes it possible to conclude that it is necessary to introduce various forms of project-oriented activities into the school curricula. Findings of the empirical research carried out in the study have major implications for teachers in higher educational establishments who are involved into guiding project-based activities of first year students.*

**Keywords:** *higher education, collaboration, organization of project activity, project-based learning, social project.*

Insufficient preparation for practical work of university graduates is known to be one of key problems of Russian educational system. Russia refers to the number of world leaders in terms of higher professional education population coverage. According to OECD data, 54% of Russians aged 25–64 had attained higher education while the mean value of the similar indicator among OECD countries constitutes 31% [17]. However,

in recent years, there has been observed a significant gap between university graduates' qualification and skills and real-world labor market needs. This issue has grown in importance due to the fact that prevalence of traditional educational technologies in the country impedes the process of students' acquiring knowledge, skills and competences required by the market. Primary attention in Russian universities is paid not to development of cognitive, social and behavioral skills, which are essential for employers, but to attaining rudimentary skills, which to a large extent have already been shaped at school. The task of integrating education and life experience can largely be achieved by implementing project technologies into the educational process at universities. Therefore, relevance of this study is determined by the need to obtain reliable and sufficiently broad-based empirical data that can be used to generate recommendations for further improvement and development of project-based learning in Russian universities.

Project-based learning (PBL)<sup>1</sup> is known to be a dominant educational technology in a number of international universities, called universities of applied sciences. Universities of applied sciences, similarly to conventional educational establishments, aim to deliver higher professional education. However, teaching techniques in such universities differ from the traditional academic model, suggesting a broader application of the project-based approach to learning. Universities of applied sciences are widely spread in Finland, Germany and Austria with their graduates being in high demand in the labor market.

Regarding Russian higher education, PBL approach appears to be used fragmentarily. We believe that a more extensive application of project-based learning technologies could be possible when implementing applied bachelor's degree programs into higher education practice in the Russian Federation. At present one of the most significant current discussions in the professional community is the idea of applied baccalaureate. However, considering complications linked to compliance with Federal State Educational Standards of Higher Professional Education (FSES HPE), it has not got widespread use in practice yet. The study seeks to address the following objectives: (1)

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<sup>1</sup>In this study, the acronym PBL will be used to refer to project-based learning.

to analyze and systemize three-year experience of deploying PBL technologies in a Russian university, assessing students' satisfaction with the new learning mode; (2) to explore and identify problems connected with the transition from traditional learning methodologies of teaching students to using a PBL approach to learning currently occurring in Russian higher education.

In recent years, there has been an increasing interest and much debate about the concept of project-based learning in the professional community. A new humanistic approach was established in pedagogics at the start of the XX<sup>th</sup> century. Central to it is the idea the learning process should take into consideration the student's individual peculiarities and interests. It was at this time that educators brought into light the role of projects during the learning process. One of the founders of PBL approach Kilpatrick noted in 1918 that students, guided by the teacher, need to obtain social experience in order to develop vital for social life skills [13]. In Kilpatrick's system, the major emphasis is laid on the students' interest and their independent thinking; the learning process is developed while pursuing solutions to the task which aroused the students' interest. G. Dewey points out that PBL will enable students not only to accumulate knowledge for future adult life, but to apply theoretical knowledge to real life instantaneously during the learning process. Pupils' participation in projects implementation is sure to help them develop vital competences such as the ability to build relationships with other people, improve self-regulation and personal development skills, and also find their way in adult life [3]. PBL was officially introduced into United States school curriculum in 1919. Thus the idea that the learning process should be aimed not only at studying and memorizing the material, but, primarily, at preparation for solving real-world professional and life problems, was announced about a hundred years ago. In practice, traditionally, project technologies have been used in the United States of America while teaching medical professions since the 60s of the last century; by the 80s they had become wide spread for teaching other vocational subjects [15].

With respect to Russia, the attempt to implement PBL was made in the early XX<sup>th</sup> century by a prominent humanistic educator S. T. Shatsky. The scholar highlighted the relevance of professional experience organization in the practice of implementing

projects into education [19]. Thus BPL was granted an official status in Russia in the 20s of the XX<sup>th</sup> century. So-called working, industrial schools were being set up; their primary objective was to reflect goals and tasks of the new Soviet state. Unfortunately, such rapid and commonplace project-based learning implementation failed to be grounded on the teachers' solid practice and experience. Quite frequently, projects seemed to be pulled away from the curriculum and would rather slow down the learning process. This inevitably resulted in the overall decline of students' knowledge. In other words, Soviet experience of PBL implementation was targeted at tackling industrial problems which responded to the requests of the current state ideology. By the middle of the XX<sup>th</sup> century, the PBL method had shifted its focus from the educational sphere to engineering. Only since the 80s have educators again turned to the project-based method, however, it did not gain popularity being used by few schools.

Nowadays in light of the educational system reforms Russian scientists and educators are turning back to the idea of reviving PBL in contemporary teaching practice both at schools and universities. Despite this, the method is being used fragmentarily. In addition, so far, there has been no well-operating succession system how to apply project tasks implementation practice at schools and universities.

At present, the leading role in developing new technologies belongs to higher educational establishments. However, there seems to be a serious gap between school and university experience in implementing project-based technologies. A great proportion of leading universities seek to build partnership relations with industrial, research and trade organizations (which allows them to highly approximate the learning process to modern employment market demands, thus, providing the students with an opportunity to get problem-solving experience during the learning process). Schools, by contrast, tend to be more inert and less open to the latest trends in science; they are more likely to be based on the classical educational system where the traditional learning method still remains indispensable. In the modern school system, the teacher's role is regarded basic whereas pupils act as passive listeners and doers. Such a tradition excludes pupils' development of independent research skills and makes it impossible for them to acquire experience of interacting with the external world. This, therefore, appears to be

a serious barrier to successful implementation of project tasks in university courses. As a result, pupils enter universities being not prepared to immediately get involved into project work. They confront difficulties with both team work inside an unfamiliar group and going beyond it.

Hence, in view of all that has been mentioned so far, it seems crucial to gain a deeper understanding of the barriers that freshmen face at universities within the framework of PBL courses.

The term «project-based learning» is defined as «the type of activity during which students learn the subject by being involved in solving real-world problems and tasks with a certain degree of responsibility for the organization of the educational process» [16]. The definition suggested by Morgan includes a wide scope of educational methodologies from applying PBL elements to the project-oriented university policy. In order to systematize educational technologies, three main «ideal» models of employing the PBL approach in the learning process were outlined by Morgan.

1. *Project exercise*. Project exercise is a traditional kind of independent activity, suggesting that the student makes use of knowledge and methodologies found in special literature in order to complete tasks within the frames of the studied subject.

2. *Project component of the learning process*. This model is significantly broader than the previous model, since it does not imply a tight connection with academic subjects; it is based on the interdisciplinary approach and often includes solutions to real-world problems. Students have more freedom and flexibility in choosing the project topic.

3. *Project orientation*. The «project orientation» model implies that the project-based method becomes learning «philosophy». Similarly to the previous model, the interdisciplinary approach and focus on solving real-world problems are paid major attention to. Nevertheless, project aims prevail over educational objectives. In addition, the choice of special literature and materials necessary for the course implementation, is determined not by teaching objectives but by the project topic.

Another study carried out by S. García underlines a multifaceted nature of the notion «project-based». The author draws our attention to a wide range of

methodologies accumulated in PBL including field studies, practice-oriented projects, laboratory research [7]. As noted by García, the following common characteristics are typical of all mentioned methodologies:

- practical task orientation;
- complexity and a relatively high degree of difficulty;
- significance (project-based work is not peripheral in the curriculum);
- fixation on tasks, which require students' independence in pursuing their solutions.

The definition suggested by Bergh, highlights the importance of PBL method's innovative character in education: «pedagogical innovation which integrates theory and practice by means of problem solving of working life issues» [1].

This idea is supported and expanded by Buck Institute for Education, the mission of which is proliferation of the PBL approach in education. It defines project-based learning as a «teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge» [2].

It is possible to single out the following features of the educational process in Buck Institute for Education:

- project tasks are selected considering educational goals, which entail study of the learning material and development of essential skills (for example, critical thinking skills, collaborative work, self-organization, etc.);
- presence of a relevant question or problem which demands a solution;
- involvement of the student into the process of data and resources search;
- practice orientation of the projects;
- the student makes independent decisions when implementing a project;
- constant analysis of the project-based activity and its results, detection and elimination of possible problems;
- teachers' supervisory control of project-based activity;
- presentation and discussion of project-based activity results with practicing specialists beyond the educational institution.

R. Dreher points out a number of characteristics peculiar to project-based learning, namely, selection of projects typical of professional activity, academic guidance of the project-group activity, raising situational questions, priority of knowledge, facilitating thinking development [4].

The results obtained from comparative analysis of traditional and project-based methods are presented in Table 1.

Table 1

## Major differences between Traditional and Project-Based Instruction [15]

	<i>Traditional instruction</i>	<i>Project-based instruction</i>
Curriculum focus	Fixed or standard curriculum	Project/driving question
Learning focus	Acquisition of knowledge	Life skills (problem-solving, teamwork, communication) as well as knowledge
Curriculum materials	Textbook, assigned readings	Developed by students through their own discovery process
Role of student	Passive observer; teacher-directed learner	Active-problem-solver; self-directed learner
Role of instructor	Expert; source of knowledge	Facilitator
Social context of classroom	Individual learners	Community of learners who collaborate with one another
Scope of subject	Narrow, focused (usually)	Broad, interdisciplinary

Project-based learning is known to be widely spread in higher education in many countries. The most important implications for appearance of PBL are «social-economic conditions, which required reevaluation of traditional learning methods» [12]. One benefit of PBL is that students learn by becoming actively involved into the learning process, thus increasing motivation for learning and getting the opportunity to develop a wide range of skills and competences [8]. Unlike traditional classes, PBL and its modifications allow achieving higher levels of creativity [9]. Application of the project-based approach improves the educational climate and produces a positive impact on the teacher-student relationship [11]. Investigation of PBL influence on building social skills provides evidence about its positive impact on developing time-management skills, responsibility, goal-orientation, creativity as well as on students' interest in subjects which go beyond the school curriculum [23]. In addition, scientists also



underline a positive effect of PBL on developing students' research skills and enhancing their achievements in the scientific sphere [5]. Project-based learning can be treated as a tool for creating a positive attitude to representatives of various nationalities as it contributes to establishing professional communication culture in international teams, overcoming barriers and training of specialists who are prepared to live and work in a multicultural community. The results obtained from the analysis of PBL implementation in international teams indicate that this method is effective in order to «master professional communication culture, overcoming communication barriers and becoming specialists with higher tolerance, ready to live and work in multicultural society» [21].

Thus, the project-based approach lets students not only acquire professional competences, but also get skills of functioning in the social environment. These skills are sure to play a crucial role in the students' ability to quickly fit in the global labor market.

It is worth noting that PBL implementation is not always smooth. Introducing PBL in public education presents a challenging task. The majority of state-funded schools and universities are limited to a state-approved curriculum. Standardized testing requires the use of learning approaches that focus primarily on rote learning. The school day is strictly regulated and arranged around subjects [18]. Lack of qualified facilitators may also be an obstacle to implementing PBL, as well as the need for creative processing of the PBL methodology considering the educational goals and the specifics of certain disciplines [10]. There are also some difficulties linked with using PBL in Russian education.

At present, in light of the national educational systems reforms, Russian scientists and teachers turn to the idea of reviving the PBL method both at schools and in universities. However, it is necessary to mention that the project-based approach is used fragmentarily in the contemporary educational system. As many Russian researchers remark, the educational system in Russia was initially founded on the knowledge paradigm: «knowledge – skill – experience», where the main attention was paid to gaining knowledge by the students [6].

To date the key role in developing new technologies is taken by higher educational establishments. However, there is increasing concern over the gap between school and university approaches to implementing project technologies. Many leading universities tend to establish partnership relationships with industrial enterprises, business communities and research organizations. Such relations, therefore, ensure that the learning process should meet the modern employment market needs as well as provide students with experience in solving real-world problems within the learning environment. Schools, being more conservative, appear to be less exposed to new trends in science and tend to draw upon the classical education system, where the major role is still played by the traditional learning method. The modern school system reviews the teacher's role as key whereas pupils act more as listeners and doers. Such an approach raises concerns as it hardly contributes to developing pupils' independent research skills. As a consequence, it appears to be a serious barrier to implementing project tasks at the university. In view of all that has been mentioned so far, there is an urgent need to explore and systemize problems which are confronted by first-year students when being involved into project-based work.

This research intends to analyze and arrange three-year experience of applying PBL technologies in a Russian university. In addition, the paper aims to assess the extent to which students from the department of Public Administration are satisfied with the new preparation mode and to single out problems associated with transition from traditional educational methodologies to the project-based approach.

The research data in this study is drawn from analyzing the experience of applying PBL when teaching first year students in academic years 2017–2018, 2018–2019 and 2019–2020. Due to the fact that freshmen lack systemic knowledge in the professional field, the study objective therefore was determined as to carry out social orientation projects, aimed at addressing socially relevant challenges.

The overall structure of project work included three stages: pre-project preparation, project implementation stage, project acceptance and project results evaluation.

The pre-project preparation stage aimed to deal with the following tasks.

1. *Building project groups.* The process of forming project groups did not imply preliminary selection and was based on the random principle. Such an approach, undoubtedly, required extra efforts associated with team work organization. However, we assume, it was completely justified considering the fact first-year students have not fully built social relations yet.

2. *Problem search and setting project tasks.* Tackling a real-world problem is considered to be one of key features of PBL, along with its targeting at the final result. The task of searching a socially significant problem was assigned to student teams, whereas the teacher's functions were limited to specifying problem statement. In fact, the teacher acted as an expert or a coach, exerting no excessive pressure on students.

3. *Working out a project implementation plan and schedule; distributing functions among group members.* The students were offered to make up the work schedule. It was also specified that the plan could be corrected while working on the project; changes of functions distributions within a group were also allowed.

The project realization stage included the following components.

1. *Reviewing professional literature and educational materials.* Students were involved into independent data investigation and, if necessary, discussed it with the teacher.

2. *Collecting and analyzing data, interviewing.* The data format as well as data sheets were agreed upon with the teacher.

3. *Identifying and systemizing risks.* Possible risks and ways of eliminating them were collectively discussed by teams and the teacher in project seminars. At the same time, the project task and aims could be modified considering detected risks.

4. *Searching and evaluating resources (material, technical, informational).* Together with the teacher- project supervisor students were engaged into analysis of existing resources and potential opportunities.

5. *Conducting negotiations.* This stage implied students' developing working relationship, in particular, arranging meetings, preparing letters and enquiries to public authorities and business structures.

6. *Implementing the project.* The project was regarded completed in case the set aim was achieved.

7. *Preparing the presentation.* The presentation structure and its timing were determined by the guiding teacher.

At the last stage – the stage of project results acceptance and assessment- the project work findings were publicly discussed, reviewed from the point of view of their significance. They were also critically evaluated by specialists and course mates.

Availability of the final product (research, report, methodology or model, event, etc.) is the key feature of the PBL concept which distinguishes it from other educational technologies, for instance, from problem-oriented learning. The authors hold the view that it makes sense to attract interested parties (stakeholders) to evaluate the project work results. Thus, in case the project has clearly defined target audience (for example, orphanages, senior homes, student organizations), stakeholders may be invited to attend the project defense procedure or they might be requested to provide feedback (for instance, oral and written reviews, grateful letters) Unfortunately, it seems impossible in most cases due to the fact that there is no particular customer in a number of situations with the role of a beneficiary party being performed not by social groups but society in general. An example of this is a social project on collection and further utilization of used batteries. In such cases it seems reasonable to carry out evaluation of the project success by attracting the coaching teacher and department representatives.

According to the study objectives it was decided to employ the questionnaire method as the data collection technique. First year students studying management were interviewed for this study. The interviewing process covered three years: it was conducted at the end of academic years 2018–2019, 2019–2020 and 2020–2021. By the end of the survey period, data had been collected from 189 individuals; of the overall cohort 46 question sheets were received from first year students in the academic year 2018–2019, 69 – from freshmen in the academic year 2019–2020 and 74 – from first year students in the academic year 2020–2021.

Data on the topics of social projects suggested by the students were collected at the end of each reviewed period to be later grouped into the following categories:

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- sport, leisure;
  - culture, art, education;
  - social services, charity;
  - information environment, mass media;
  - urban space development, ecology;
  - improvement of university work;
  - international links.

In addition, a section of the questionnaire required respondents to point out challenges they faced in their research work by answering the question «Indicate key problems linked with implementation of your project». Students were asked to choose one or more options from the following:

- idea search;
- practical execution of the project idea;
- cooperation in the project team;
- interaction with teachers, supervising the project;
- communication with outside organizations;
- other.

Another question to the students was framed the following way: «What positive findings connected with your project implementation can you mention?» The following responses were offered (one or more answers could be chosen):

- team work experience;
- experience in completing a practice-oriented task;
- developing communication skills;
- research work expertise;
- experience in interacting with outside organizations;
- experience of cooperating with teachers in an extracurricular mode;
- other.

In order to evaluate the students' satisfaction with the project work outcomes, they were asked to rate their satisfaction with the project activity results according to a ten – score scale.

Overall, the results indicate that the most demanded spheres of project work among first year students over two years of observation were «Culture, art, education» and «Improvement of university work» (see Fig. 1). Projects, entering the group «Culture, art, education» mainly implied building communities among university students who shared common interests. As far as the category «Improvement of university work» is concerned, it included projects aimed at building connections with prospective university students, establishing relations among students from different departments and courses, as well as enhancing transparency of various structural divisions of the university. Interestingly, the trend tended to remain stable during the third year of observation; however, there is a noticeable increase in students' interest in the area of social services, charity and culture, art, education in 2021–2022.

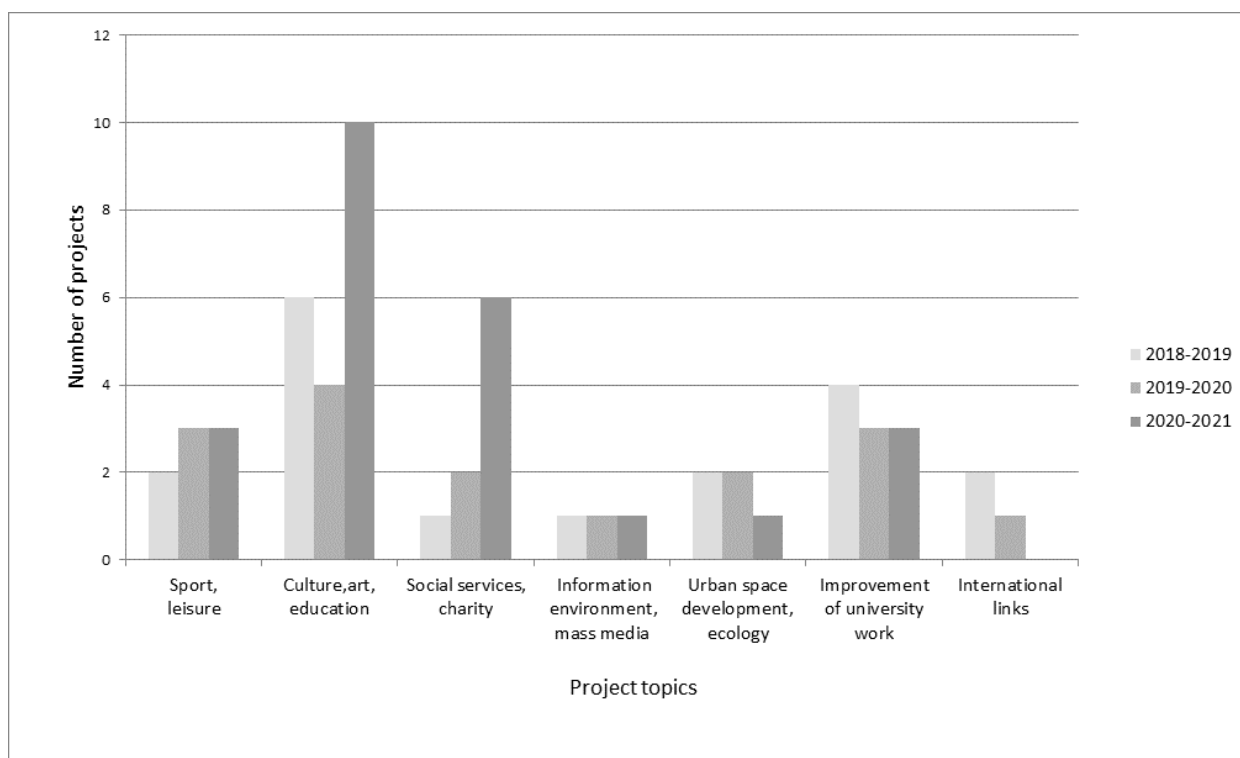


Fig. 1. Distribution of projects by topics

It is worth noting that the greatest proportion of projects was targeted at work inside the university. Even projects, connected with organization of sports events and tackling ecological issues, tended to be restricted by the intramural environment.

We assume that the implication of this finding is that the majority of students feel not prepared for work outside the university. Apparently, school graduates lack

experience in building relationships with the outside world. In the authors' view, this fact may be attributed to a rather discouraging trend and is likely to result in certain problems in future professional activity.

Distribution of responses to the question «Indicate key problems connected with your project implementation» is presented in Figure 2. The bar graph reveals that the main students' concerns over the review period were «Practical implementation of the project idea» and «Communication with outside organizations». First year students carrying out their projects in 2019–2020 also mentioned difficulties arising at the idea search stage.

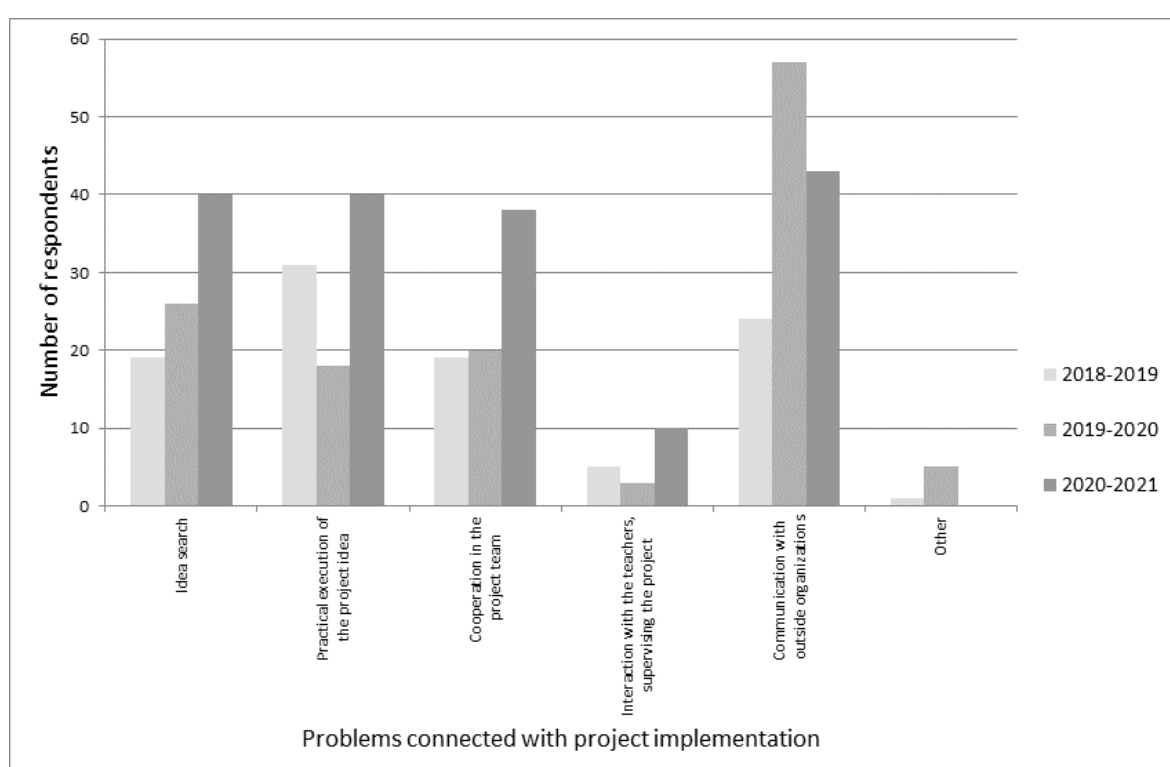


Fig. 2. Distribution of responses to the question: «Indicate key problems connected with your project implementation»

The finding linked with often reference to project realization issues can be explained by the fact that first year students generally do not possess organizational competences to a necessary extent. Over half of those surveyed are not familiar with project-based activity and therefore lack relevant experience in problem search and statement. Tackling a problem collectively also presents a cause of concern for most first year students.

Another issue emerging from the students' responses relates to difficulties in establishing relations with outside organizations. Such interaction might have been inevitable even in case of implementing projects targeted at developing internal university community and space. This is due to the fact that they involved, for instance, inviting a voluntary organization representative to a meeting or doing some sponsorship printing work. These findings provide further support for the hypothesis that activity beyond the university walls presents greatest challenges for students.

It is necessary to mention another significant issue to emerge from this study. Although not determined as key by most students, the majority of teachers marked it as exceptionally relevant while discussing project work. In particular, it is concerned with difficulties in building relationships within a project group. There were a number of situations when a student received high grades and benefits for his or her participation in the project without actually making any essential contribution into it. Analysis of PBL experience reported by international researcher demonstrates that this problem causes concern not only for teachers in Russian universities. The authors of the research point out that «some students tend to shift the responsibility for the quality of studying to the group of project implementation, to avoid assuming responsibility for the outcome of activities of the whole project group, to insufficiently communicate with the study colleagues» [14].

Distribution of responses to the question «What positive findings linked with your project implementation can you point out?» testifies to the fact that the opportunity of getting practical work experience together with improvement of communication skills is considered by students to be the most significant result of project work. (See Fig. 3). In a personal interview the majority of those surveyed indicated that these competences, from their point of view, are largely demanded and appreciated by employers. Along with this response, first year students in academic year 2020–2021 expressed an opinion that experience gained from interacting with outside organizations was highly beneficial and rewarding for them.

It is specifically crucial to highlight relevance of communication skills developed by students during project work. Undoubtedly, IT development opens new horizons to



the younger generation; however, it may often produce a negative impact on communication and presentation skills. It is not an uncommon situation for modern students to face challenges with building social ties, to suffer from misunderstanding and loneliness. Some students report difficulties with encouraging and interesting other people in their ideas. In this case involvement in PBL work can contribute to making up for the communication deficit by involving students into completing socially significant tasks.

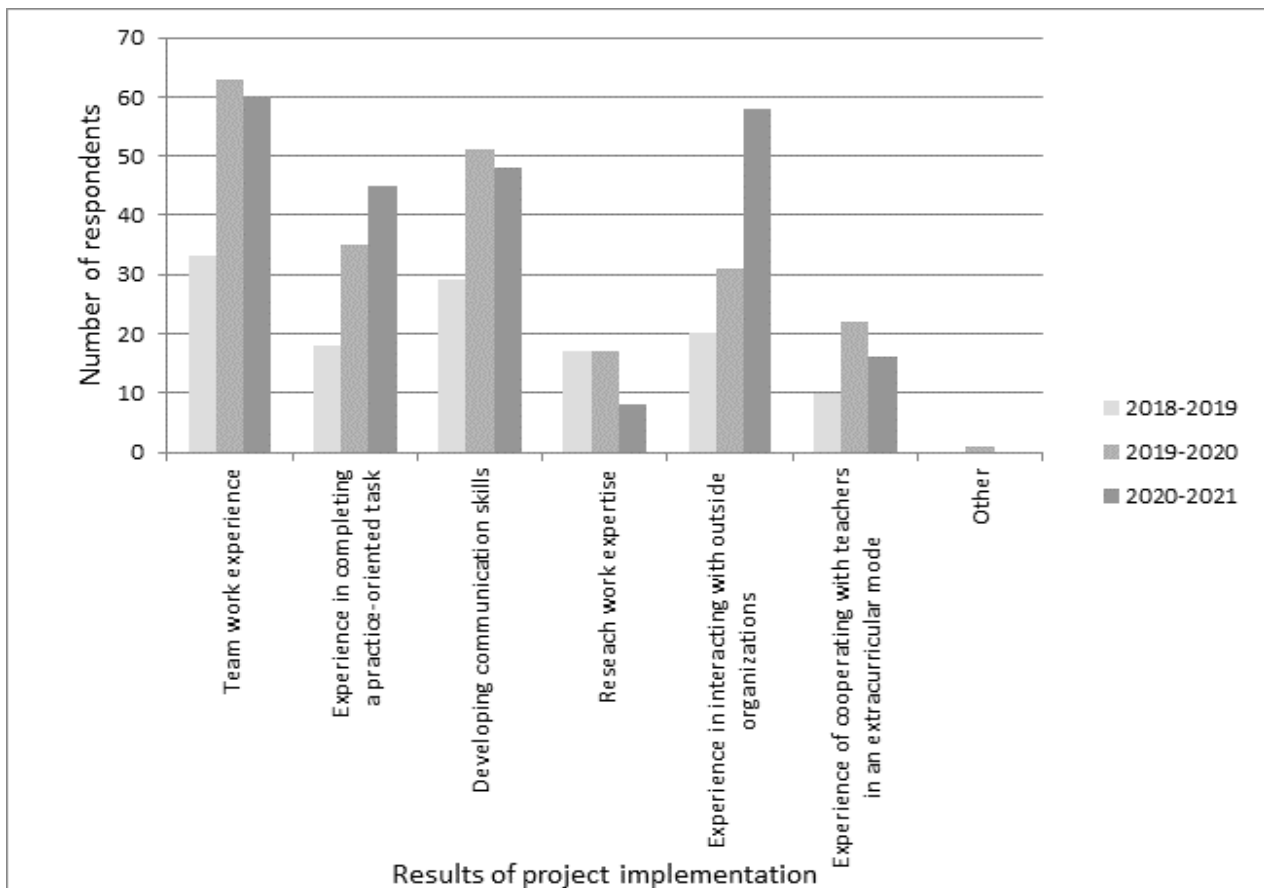


Fig. 3. Distribution of responses to the question: «What positive findings linked with your project implementation can you point out?»

The results obtained from evaluation of students' satisfaction with project work are shown in Table 2 and Figure 4. In order to identify the degree of satisfaction, students were asked to assess value of PBL activity for their future work according to a ten-grade scale. Thus, evaluation ranging from one to two points indicated a high degree of dissatisfaction with project work results, assessment from three to five corresponded to a satisfactory mark, evaluation varying from six to eight points meant

«good» and nine-ten points demonstrated the highest level of satisfaction with the results.

Table 2

Distribution of responses to the question:  
«How do you evaluate results of project-based learning?»

Year of observation	Score										Mean score	Standard deviation
	1	2	3	4	5	6	7	8	9	10		
2018–2019	1	0	3	3	7	6	14	8	2	2	6,37	1,87
2019–2020	0	1	0	2	6	10	13	21	11	5	7,36	1,61
2020–2021	0	0	0	4	4	13	20	18	5	10	7,34	1,58

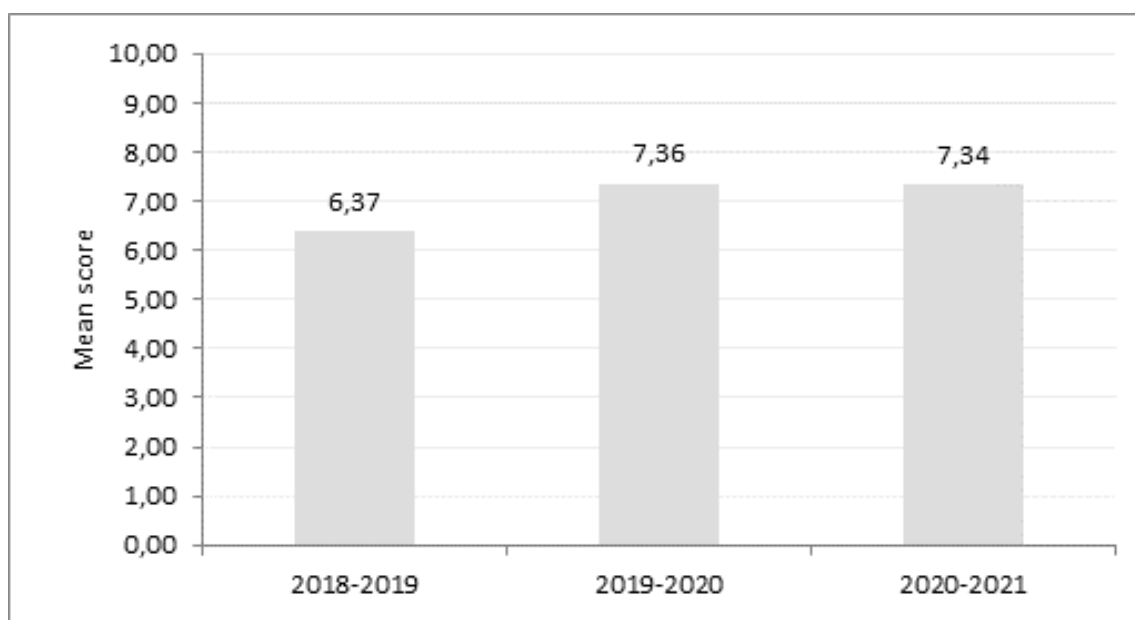


Fig. 4. Mean score value when assessing quality of project-based learning

From the data in Figure 4, it is apparent that BPL results were estimated highly by the students. However, presence of negative evaluations reveals some limitations of the method. Obviously, the cohort of respondents included freshmen not possessing basic socialization skills or those aimed at individual work. It can therefore be assumed that lack of independent operating skills and sufficient motivation might have influenced the fact that some assessments were negative. One issue that emerges from this finding is that mechanism of students' involvement into project work must be corrected

for this group of respondents, namely, closer connections with the supervisor should be established.

It is interesting to note that first year students receiving training in the second and third years of observation tended to give higher ratings to project activity results than those from the first year of guidance. Thus, while use of project activity scored on average 6,37 points in academic years 2018–2019, in 2019–2020 this indicator increased and constituted 7,36 with a slight decline in 2020–2021 reaching 7,34 points. We believe that such positive dynamics might be related to more professional supervision of the project tutors. Academic year 2018–2019 was the first year of guiding PBL activity for the majority of teachers. Tutors managed to consider mistakes and thereby improved the supervisory process in the following years.

Thus, taken together, the results of three-year investigation of PBL activity in a university indicate that the absolute majority of first year students are not prepared for carrying out projects which include interaction with the state, businesses and public institutions. The evidence from this study shows that freshmen almost do not possess experience in establishing relations with outside organizations, which is a vital competence especially for future specialists in the field of management. It is certain, that this problem is relevant for Russian education at large: in contrast to students in OECD countries, Russian students on average pay more attention to learning the material and tend to draw less upon collective classes [2]. A major challenge for universities should therefore be to engage students into PBL activity, which will require introducing courses with project-based approach into the curriculum of first year students as well during subsequent years. Social projects, carried out by freshmen, should lay the groundwork for further work on projects in professional sphere.

The results obtained from the questionnaire indicated that the greatest benefit from implementing the PBL approach, in the students' view, is gained experience in solving practice-oriented problems and improving communication skills. On the other hand, issues with implementing the project idea and necessity to interact with outside organizations presented the biggest challenge for freshmen. The authors assume that this trend might be regarded as an implicit problem of Russian school education where

at present the dominating role is played by traditional teaching methods which do not encourage development of practical skills. In addition, certain closed nature of schools together with their academic results orientation does not allow pupils to develop competences essential for successful work in a project-based format. As noted in the study carried out by the National University Higher School of Economics: «School overloads children with knowledge, the relevance of which is doubtful. At the same time school does not teach necessary skills, including social competences...» [20].

The research has found that gaps in school education can be filled in, to a large extent, during the first year at the university within the framework of project-based learning. Project implementation will contribute to students' getting vital for their future career skills of team work and developing independent problem-solving abilities. Benefits of project-based approach in education are particularly valuable for the Russian educational system, where traditionally much attention has been paid to establishing a solid academic platform which often failed to meet the employment market demands. To date, a number of professional directions, for instance management, place an increased value on critical thinking skills, team work experience and self-education capabilities. This is proved by practice of other countries where the PBL method is highly demanded and developing rapidly. Thus, as far as Chinese experience is concerned (its educational system was to a large extent formed under the influence of Soviet educational trends), higher education in this country is actively employing project-oriented technologies, aimed at enhancing creativity, building collaborative work skills, developing self-management in students [22]. Taken together, these conclusions, therefore, define a need for further development of various forms of project-based learning activities in Russian education, which will help university graduates secure a competitive advantage in the modern labor market.

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