

Chapter 4

Project-Based Learning to Develop Creative Abilities in Students



Asylbek Isabekov and Gulzat Sadyrova

4.1 Introduction and State of the Art

The Bologna process principles introduced into the Kyrgyz Republic educational system (Government of Kyrgyz Republic 2011) form an innovative learning sphere to transform the training process. The new system, oriented at interactive learning, has replaced post-Soviet educational system. The system aims at developing student's creativity and proactivity as a "groundbreaker", highly adaptive to changes and competent in search for evaluation and introduction of innovations. Education faces new requirements, creative ability being one of the most important for graduates. We believe that project-based learning may help develop creative abilities in students.

The strategy for education development in the Kyrgyz Republic recognizes education as a priority area to accumulate knowledge and the building of skills (Ministry of Education and Science Kyrgyz Republic), while creating optimal conditions to reveal and develop the creative abilities in every person. Analysis of current educational standards and materials (mostly, primary and secondary education) used in Kyrgyzstan schools revealed that in some study books, only 15% of tasks are relative to creativity (Kaarman 2009). The creative component in many study books and methodological guidelines is at a minimum. School children tend not to evolve their creative abilities.

Students' creativity requires special attention. The educational impact to create independent and creative thinking skills cannot be acquired just because of the learning process. Thus, it needs fostering and cultivation. Project-based learning shall be integrated into the higher education system, in a well-thought-out manner to avoid imposing it to students and instructors; it should become a tool to improve

A. Isabekov (✉) · G. Sadyrova (✉)
Department Applied mechanics, physics and engineering pedagogy, Kyrgyz National Agrarian University named after K. I. Scriabin, Bishkek, Kyrgyzstan
e-mail: sulzat@mail.ru

the educational process; to facilitate better learning, skills, and abilities; and to stimulate educational motivation and general cultural growth.

Many researchers, for example, Adolf (Stepanova and Adolf 2011) and Wolkow (Wolkow et al. 2008), note the significance of creative skills for future teachers, highlighting the importance of identifying students who are the most capable, inclined to independent creative activity, and the need to create conditions and encourage them to manifest themselves maximally. It is also considered that future teachers should enlarge and expand research activities. For example, Krasilnikova and Bondarenko (2005) analyzed employers' requirements for the professional education of future specialists and identified that the first place among the requirements took creative potential, a flexible approach to work, and fast learner.

The survey of the KNAU students with Engineering and Pedagogics majors showed that most of them are not familiar with technologies that stimulate creative ability and did not have enough abilities for creative activities. Instructors working more than 3 years consider themselves competent in the creative approach to arranging the learning process (Raimkulova 2016).

The abovementioned case defines an actuality to study the issues on facilitating the creative abilities in students at the social and pedagogical levels. Creativity plays a great role for the overall growth and personality of each student. In the process of creative activity, developing such abilities as cogitateness, comparison, analysis, and the combination of all these processes shapes the basis of future conscious and the demiurgic creative ability of every student. The process of building a creative attitude toward learning requires undivided attention, pressure on mental abilities, and great will. In our article we underline the belief that creativity can be taught and creative personalities developed. This plays a methodological significance for pedagogics, as every student has the creativity to foster in the training process as the basic factor for the development of an active creative position. Our attitude to creativity to create good results allows us to propose the sculpturing of creative abilities through various innovative technologies.

For innovative technologies to enhance students' creative activities, the following needs to be taken in to account:

- Age specifics;
- Creative ability execution/translation
- Conditions for co-creativity (id., 2016)

The priority approach to enhance creative abilities, in our opinion, is project-based learning. Project-based training activity is a component of the project-based learning related to discovering and meeting students' needs via projects and creation of ideal or material outcome with objective or subjective novelty. It is a creativity-based study activity to solve a practical task, when students decide goals and objectives to be implemented in theoretical research and practical fulfillment under instructor's supervision. Here we find another component of project-based learning – instructor's involvement.

Professional education major students (group PO-1-14 in 2015–2016) used the individual project-based learning method. The “Rhetoric” discipline is introduced for students of vocational training on the fourth course in the spring semester, as a variable course. And this discipline, designed to teach how to effectively influence the audience using speech, how to achieve success, and how to speaking publicly, met the requirements that were set by the project itself.

The stages of individual student projects were as follows:

1. *Organizational and preparatory stage:*

During this stage, there was collaborative work of a teacher with each individual student. The student, under the guidance of the teacher, was engaged in problem-solving, chose and substantiated the project theme, planned his forthcoming activities, and identified the main goal and tasks arising from the project theme. At this stage of the project activity, the main task of the teacher was to promote interest, first of all, to the technology of design training as innovative. It should be explained that students were not familiar with the project technology. After consideration and analysis of the “project concepts”, “project technology”, “project training”, etc., students, as mentioned above, decided to engage the individual projects on the discipline “Rhetoric”.

Every student had to conduct one lesson (120 min) on “Rhetoric” applying innovative methods and creative approaches. The instructor suggested topics from the discipline training materials. Students had to design a lesson with creative elements and prepare all necessary teaching aids (select reference materials, determine lesson format, design presentation slide sand posters, prepare handouts, write questions to enhance interest, etc.).

Thus, at this stage, the students together with the teacher actively participated in the problematization of their projects.

2. *Planning of the future project activities:*

This stage was practical and responded to such questions as “What to do?”, “Reason to do it?”, “How to do?”, “What are the expenses?” and “What are the terms?”. Each student under the guidance of the teacher began to determine the character of the upcoming works, which included definition the lesson type, methodology, handouts, and organizational/time division of the lesson; terms and schedule of works; development of the stages contents; and selection the materials on the project topic.

3. *Project development:*

This stage was characterized by the independent conducting of an individual task in accordance with plan and a schedule of lessons. Such work was carried out as preparing materials for presentation, preparation of illustrative material, preparation of video presentation, preparation of handouts, development of didactic games targeted to the project theme, etc.

4. *Final stage (defense presentation of the project) and evaluation of the results:*

This important stage of the project activity of students was held publicly in the form of each individual student’s practical lesson. A listening public who acted

as students was organized. Only 10 of 16 students were able to implement their projects. The project defense presentation included a video demonstration, public defense, games with students, guessing a crossword puzzle, staging the historical events, reporting new information, etc.

4.2 Project Presentation

Project presentation was organized as a practical lesson. In the educational system of a higher educational institution in Kyrgyzstan, all classroom activities are divided into lecture, practical, and laboratory. In our case, too, when we say a practical lesson, we mean a theoretical lesson that is held within the walls of the university. The details of this practical lesson are described below:

At the end of every lesson, participants had extended discussion to analyze results together with Project team.

Example: Practical Lesson Extract

PRACTICAL EXERCISE No.6

Topic: Components of Communication: Speaker

Duration – 2 academic hours (2 × 60 min)

Goal: assess speaker's posture, image, and its elements

- Educational – to explain to students the goals of the speaker, to show his types and forms, and to form an idea about the communication of people and his role in life. Explain the essence of the following concepts: communication, verbal and nonverbal communication, and official, everyday, persuasive, ritual, and intercultural communication.
- Developing – to include students in the work at all stages of the lesson and to promote the development of their professional, operational, social, and communicative competences.
- Educational – to cultivate a respectful attitude toward the speaker, Observance of the culture of speaking and listening and its constituent elements, such as the ability to listen and understand and politely and correctly behave when expressing one's point of view.

Plan:

I. *Learn about “First Teacher” story by Dshingis Aitmatov (1975)*

II. *Brainstorming*

Questions:

Why has the story protagonist appeared in an embarrassing situation?

Why is knowledge an action in a relevant area?

What did he have to do to avoid a scandal?

(continued)

Evaluate a story's mood.

Why was the protagonist no longer afraid of public speaking?

What are the ways to struggle with stress?

III. *Practical task:*

Watch a short clip from the “First Teacher” movie (teacher’s speech) and prepare a 5 min speech on “Image of ideal teacher.”

Game “Instructor – Group of Students”: Simulate communication scenarios, while the instructor speaks and students listen/do not listen/are disturbed/show interest, etc.

Difficulties at speaking: carry out exercise and discuss results.

Students themselves, sharing their impressions, noted positive points. Basically, they learned to explain their thoughts more reasonably and noted the improvement of thinking activity, such as analysis and evaluation of their learning activity. If before the project activity the students noted the absence of their “soft skills”, then in the process of defense presentation, they started talking about increasing their self-evaluation and self-assertion and developing public self-presentation and reflection.

In evaluation of the completed projects, the following criteria were used: actuality and practical focus of the topic, the volume and completeness of the development, individuality, independence, completeness, preparation for the lesson defense presentation, creativity level, originality, speech culture, using of demonstrative features, appropriateness/inappropriateness of the material applicable for the lesson, the audience’s activism/immersiveness, the innovativeness of the methodology, capacity amount, and depth of students’ knowledge on the project topic.

4.3 Conclusion

Analytical work to develop students’ creative abilities included several stages: research, technology, final, and result. All these stages helped to improve logical thinking, widely enhance creative abilities, and encourage students to undertake scientific research work. Project-based learning may be applied as pedagogical technique implying not only knowledge integration but also the application of up-to-date knowledge and further growth.

Through dialog-based learning, students learn to cogitate, address complex problems based on situation analysis and relevant data, compare opinions, take balanced decisions, take part in discussions, and communicate with people. Working in groups and in pairs, micro-research projects, role-playing games, discussions, etc. help a student stimulate and enhance creative activity as his/her own experience becomes a source of learning.

In this real experiment with professional education major students, the advanced were able to perform in-depth study, offer more different ideas, and develop a more complex solution. Less capable students were actively supported and assisted by teacher educators.

Thus, the article is directed to the application of the education project method in order to trigger the development of the creative abilities of teachers of professional education majors. Based on the studies of Krasilnikova and Bondarenko (2005), Raimkulova (2016), Kaarman (2009), authors considered the issues on activation and formation the creative capacity of secondary schools' future teachers.

Summing up, we came to the conclusion that project training should be considered as a didactic system in the preparation of future teachers of vocational training. It should be noted that it is not advisable to translate the whole educational process completely into project teaching.

It should be noted that the success of the students' project work depends on the following factors:

1. Acquaintance/non-acquaintance with the project activity methodology
2. Students' motivation for the project activities
3. Knowledge level of students on the topic of project activities
4. The teacher's qualification level – the organizer of the student's project activity
5. Psychological and social status of the training group
6. Material-technical, educational-methodological, and informational support of the project activities
7. Communicative and verbal competence of students

References

- Aitmatov, C. (1975). *Povesti i rasskazy*. Bishkek. Retrieved from <http://wysotsky.com/0009/005.htm>
- Government of Kyrgyz Republic. (2011). *Postanovlenie KR ot 23.08.2011., o veedenii dvuhurovnevoi sistemy obrazovaniya – bakalavriat i magistratura*. Kyrgyzstan.
- Kaarman, G. (2009). *Vestnik KNU im. J.Balasagyna: Bolonskiyi process i problemy formirovaniya tvorcheskoi lichnosti budushego uchitelia*. Krasilnikova, M.D. i Bondarenko, N.V. (2005). *Ocenka rabotodateliami kachestva professionalnoi podgotovki rabotnikov. Voprosy obrazovaniya #1*, pp. 264–275. *Vyshaia shkola ekonomiki*.
- Krasilnikova, M. D., & Bondarenko, N.V. (2005). *Ocenka rabotodateliami kachestva professionalnoi podgotovki rabotnikov. Voprosy obrazovaniya #1*, s.264–275. *Vyshaia shkola ekonomiki*.
- Ministry of Education and Science Kyrgyz Republic. *Strategiya razvitiya obrazovaniya v Kyrgyzskoi Respublike na 2012–2020 gody*.
- Raimkulova, A. S. (2016). *Metodika aktivizatsii budushim uchitelem poznavatelnoi deiatelno-sti shkolnikov*. PEDAGOGICAL SCIENCES. Retrieved from <https://expeducation.ru/pdf/2016/2-1/9436.pdf>

- Stepanova, I. U., & Adolf, V. A. (2011). Razvitie professionalnogo potentsiala pedagoga v usloviakh obnovenia obrazovatelnoi praktiki. *Innovacii v obrazovanii* (10), 14–24. Retrieved from <http://elibrary.ru/item.asp?id=17282948>
- Wolkow, A., Kuzminov, I. A., Remorenko, I., Rudnik, B., Frumin, I., & Iakobson, L. (2008). Model obrazovania dlia innovacionnoi ekonomiki: Voprosy obrazovania. *Rossyiskoe obrazovanie*, 2020(3), 32–64. Retrieved from <https://publications.hse.ru/articles/63504722>

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the book's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

