



# USING PROJECT-BASED LEARNING TO TEACH PROFESSIONAL-PEDAGOGICAL ENTREPRENEURSHIP TO PRIMARY SCHOOL TEACHERS IN THE SYSTEM OF CONTINUING EDUCATION

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## Abstract.

*Relevance:* continuing teacher education directly affects the development of both pedagogical skills and professional entrepreneurship in primary school teachers. This particular problem has been widely publicized since primary school teachers are seen as the foremost implementers of public policy in the field of the education and formation of future generations. Recently, in Ukraine, there have been established numerous specialist gymnasiums and schools, including private ones, that actively introduce the latest pedagogical technologies and search for new approaches to a quality preparation of the younger generation for further education and adaptation to society. In this regard, today's educators must strive for innovation and entrepreneurship.

*The article aims* to describe how project-based learning can be used to teach professional-pedagogical entrepreneurship to primary school teachers.

*Research methods* include *theoretical* (systemic-axiological, structural-comparative, structural-logical) and *empirical* (theoretical analysis of relevant pedagogical, philosophical and management literature, legal documents, academic papers and conference proceedings; structural and logical analysis, systematization).

*Results:* careful theoretical analysis of the above-mentioned sources has made it possible to describe the most effective ways of using project-based learning to teach professional-pedagogical entrepreneurship to primary school teachers. In particular, they lie in developing future teachers' entrepreneurial knowledge, skills, abilities and initiative, promoting their professional growth, as well as helping them implement business ideas.

*Conclusions:* simulation games, design thinking, Agile methodology and business planning are the main tools of project-based learning used to teach professional-pedagogical entrepreneurship to primary school teachers in the system of continuing education.

**Keywords:** *professional-pedagogical entrepreneurship, primary school teacher, continuing education, project-based learning.*

**Introduction.** Nowadays, continuing education requires new approaches to professional development of teaching staff. Project activity is one of the most promising areas in the education sector since it creates conditions for developing life competencies. Emphasis should be placed on entrepreneurship competence of primary school teachers. It is viewed as one's ability to generate new ideas and

initiatives and implement them to improve one's social status and well-being, as well as to develop society and the state. According to the Order of the Ministry of Education and Science of Ukraine as of January 15, 2018, No 36 "On approval of the Standard educational programme on organization and implementation of advanced teacher training in postgraduate teacher education institutions", this

implies developing entrepreneurship competence within the framework of advanced training. After the introduction of the New Ukrainian School concept, the educational community faced new challenges. In turn, these challenges change the teacher's mission in the context of European professionalism. To renovate the Ukrainian school system, it is crucial to introduce project-based learning to enable future professionals to acquire new skills, develop new competences, including entrepreneurship, become more professionally mobile, think innovatively and strive for continuing professional development. Continuing teacher education directly affects the development of both pedagogical skills and professional entrepreneurship in primary school teachers. This particular problem has been widely publicized since primary school teachers are seen as the foremost implementers of public policy in the field of the education and formation of future generations. Recently, in Ukraine, there have been established numerous specialist gymnasiums and schools, including private ones, that actively introduce the latest pedagogical technologies and search for new approaches to a quality preparation of the younger generation for further education, adaptation to society and self-identification.

In this regard, primary school requires creative professionals who can work in new formats and stay competitive in the labour market. They are not passive transmitters of well-known pedagogical or methodological postulates but charismatic and creative leaders, generators of educational initiatives and innovations and bright individuals who advocate humanism and cooperate with all the actors in the educational process. It means that they strive for continuing personal and professional development and are ready for pedagogical experiments, given that any activity is meaningless unless it creates a new product or leads to new achievements.

**Sources.** Many scholars have studied the problem of project-based learning in the context of the educational process (K. Bakhanov, V. Bolotov, I. Dychkivska, N. Halskova, H. Isaiev, O. Liubarska, N. Morze, O. Piekhota, Ye. Polat, O. Pometun, V. Serykov, S. Shevtsova, H. Vorobiov, A. Uvarova, I. Yermakov et al.). In the international discourse of the 20th century, it was J. Dewey, W. Kilpatrick and E. Collings who were in search of effective ways to implement project-based learning. In turn, T. Matveieva justified the effectiveness of project-based learning in developing entrepreneurship competence. As noted by I. Yermakov, O. Kobernyk, N. Matiash, O. Savchenko, V. Tymenko and A. Tsymbalaru,

project-based learning is one of the innovative teaching methods that enable the development of basic competences. Despite an abundance of research on this topic, there are a few studies on the problem in question, namely, using project-based learning to teach professional-pedagogical entrepreneurship to primary school teachers.

**The article aims** to specify how project-based learning can be used to teach professional-pedagogical entrepreneurship to primary school teachers in the system of continuing education.

**Methods:** include theoretical (systemic-axiological, structural-comparative, structural-logical) and empirical (theoretical analysis of relevant pedagogical, philosophical and management literature, legal documents, academic papers and conference proceedings; structural and logical analysis, systematization). Together, they are called to describe professional training of the new generation of teachers.

**Results and discussion.** Education has shifted from transferring knowledge to developing in-demand skills and competences, including teamwork skills, emotional intelligence, critical and creative thinking. By using design thinking to teach professional-pedagogical entrepreneurship to primary school teachers, one can develop their entrepreneurial skills and prepare them to solve problems associated with the implementation of entrepreneurial ideas. There is no uniform interpretation of the "design thinking" concept. Consisting of two terms "design" and "thinking", it defines the main approaches to creating innovative products. Design means the process of planning or fashioning something that, in essence, is much broader than visualization. Project thinking, as mental activity of creating innovative products, is synonymous with design thinking. According to I. Yaloveha, design thinking lies in a non-standard approach to solving problems through understanding and defining people's desires and, consequently, creating an innovative product to meet their needs. It reduces the risk and uncertainty that always accompany innovation (Yaloveha, 2019, p. 151). Design thinking answers the following basic questions: 1) What is it? (to explore the existing reality); 2) What if ... ? (to imagine a new future); 3) What catches attention? (to make a choice); 4) What really works? (to evaluate results) (Liedtka, 2011). At the same time, design thinking relies on empathy, non-standard thinking, as well as one's ability to accumulate ideas and invent schemes to further identify patterns and generate ideas.

In the context of project-based learning, design thinking is a tool which helps teachers test an entrepreneurial idea and, consequently, introduce educational products and services into the market. In other words, design thinking can be used to implement educational entrepreneurial innovations. In particular, it is facilitated through: a) accumulating entrepreneurial ideas and beating stereotypes; b) making risky decisions at the start of the project; c) eliminating the fear of failure; d) understanding the needs of consumers of educational services, their goals, behaviour and inclinations; e) testing business ideas preliminarily; f) modifying ergonomics, applying and perceiving the value of educational products.

Design thinking characterizes one's position that one needs to transform and organize the space around oneself (Izmeteva, 2015). It consists of seven stages, such as 1) identifying the problem; 2) researching; 3) shaping ideas; 4) prototyping; 5) choosing the most effective solution; 6) implementing the decision; 7) evaluating results.

The "identifying the problem" stage is of paramount importance since it determines the required solutions. Next, it is necessary to determine the end-user (whose problem is being solved?) and expected results (what is the successful outcome of the project?). The "researching" stage traditionally begins with a review of the problem's history (has anyone solved this problem before?; how to solve it?; were the decisions effective or not?) to help one avoid the mistakes made. The "shaping ideas" stage includes gathering all available information, understanding the needs and, subsequently, brainstorming solutions. One should not focus on one idea only, even if it seems rather effective. It is essential to consider the problem from different angles which will help one generate the most unexpected and interesting ideas. Cooperative learning is extremely suitable in this context. Besides, emphasis should be placed on teamwork (five individuals who work on solving a problem during one day almost always come up with more different ideas than one individual doing the same during five days). It is also advisable to follow the rules of group work, take the expressed ideas positively and not criticize even the absurd ones. Nothing revolutionary is ever possible if participants hesitate to express ideas that may seem rather eccentric. At the "prototyping" stage, one works with the expressed ideas, namely, by choosing the most effective ones, combining or improving them. It is vital to carefully review all the goals and ideas objectively. Design thinking allows one to evaluate what is

achieved and, if necessary, refine or change the product. Feedback can be obtained from potential users by asking them the following questions: "Are you satisfied with the result?"; "What should be improved?"

In 2020, the course on design thinking at school was added to Prometheus (follow the link: [https://courses.prometheus.org.ua/courses/course-v1:MIT+DTLL101+2018\\_T3/about](https://courses.prometheus.org.ua/courses/course-v1:MIT+DTLL101+2018_T3/about)). This course was funded by Microsoft as part of the Microsoft K-12 Education Leadership programme, founded to provide educators with professional development opportunities worldwide. The course combines the theory of design thinking and the examples of its use. Also, it acts as a platform for advanced training of teachers in effective planning of the educational process and introduction of new learning technologies.

Special attention should be paid to simulation games. Business simulation is a large-scale interactive simulation system specifically designed to develop economic and managerial competencies and skills. Simulators create opportunities for acquiring practical skills to manage the economic processes of the entire technological chain of production, marketing and competition in a market environment. Today, there are hundreds of professional simulators with varying degrees of immersion and process development. After registration in the system, the participant becomes responsible for a company in an environment close to reality and can make economic and managerial decisions necessary for the start of its work and further development. Also, the participant is allowed to use existing financial instruments in Ukraine, determine the range of products planned for production, expand and modernize production and technology base, hire staff and organize their work. Using appropriate marketing tools, the participant can start promoting and selling products. It must be noted, however, that the company is in a market environment, and when making decisions the participant should consider the presence of other market participants. Thus, competition in the virtual market space forces the participant not only to look for effective tools and ways to promote the product but also to modify production to change the consumer quality of products and optimize its cost. Importantly, business simulation consists of the following stages: 1) adapting to the simulation environment; 2) shaping a comprehensive vision of the company as a system that includes interconnected functional units; 3) understanding causal relations within business pro-

cess management in the competitive market environment; 4) implementing and adjusting the previously approved action plan, as well as analyzing the obtained results professionally; 5) consolidating the acquired competencies and entrepreneurial skills. Upon completing advanced training courses in the system of postgraduate teacher education, primary school teachers acknowledged their expediency and necessity. In this regard, it is essential to specify the necessary prerequisites for using business simulation in teacher retraining: prioritizing tasks; exceeding traditional learning and existing patterns; familiarizing with economic terminology and logic of managerial decision-making in market conditions; updating digital skills; providing assistance in decision-making, explaining the consequences of decisions and fostering attention to detail; clarifying the links between education and business in the light of the launched education reform (Pazdrii, 2019).

Agile methodology manifests itself through the following values: people and collaboration are more important than processes and tools. At the same time, a working product is more important than comprehensive documentation, and readiness for change is more important than following a plan (Highsmith, 2001). Agile methodology is widely used within the framework of advanced training for primary school teachers during which they learn practical techniques of planning individual sprints, creating roadmaps for business projects, developing delegation maps, engaging in mutual learning (from the back of the room), participating in motivational games, applying permanent reporting and receiving feedback. Besides, this methodology has many advantages, including making and coordinating decisions promptly, setting the individual pace for each stage of activity and promoting adaptability to today's requirements (Sutherland, 2014, p. 50). Agile methodology is especially effective in the context of creative approaches, creativity, as well as uncertain situations requiring quick and non-standard solutions. P. Salza prepared a list of methodologies derived from Agile methodology (Salza, 2019). The author of this article has adapted the list to the practice of teaching professional-pedagogical entrepreneurship within advanced training courses for primary school teachers at the Volyn Institute for Postgraduate Teacher Education.

1. Adaptive software development that encourages iterative development, with constant prototyping, and coordinates the activities of participants, simultaneously retaining their creativity.

2. Crystal methods. Depending on project complexity, tasks can be divided between teams with different numbers and capabilities of participants. Teams perform partial tasks of varying importance. The location of teams is marked by different colours (white, yellow, orange, red, blue) that correspond to the complexity of a partial task. Most often, communication takes place in small groups that work on the most less strategic part of the project. Such groups are marked in white.

3. Dynamic software development method that consists of three stages (pre-project, pro-project life-cycle, post project). This allows expanding the capabilities of the project team, meeting existing needs and making modifications.

4. eXtreme programming. It widely uses teacher cooperation and obligatory feedback on the following plans in the course of solving problems, completing tasks, managing processes and applying tools.

5. Feature-driven development. Work is divided under the initial object model, with a two-phase iteration (design and development).

6. Kanban. Its main tool is a physical or electronic board to visualize team management. Each task on this board consists of the following stages: "do", "in progress", "done".

7. Scrum. It aims to achieve learning outcomes gradually and iteratively, using such soft skills as organization, planning, collaboration and teamwork. The process itself takes place in stages and consists of a series of iterations called "sprints", which are essentially boundaries for evaluation and feedback. The "Scrum" methodology allows solving many educational problems of different levels and professional orientations through Lego-based games, as well as games with limited conditions (such as SCRUMIA, in which artefacts are developed only with the help of pencil and paper).

Teaching practice shows that motivated teachers, using even only some elements of Agile methodology, have grown professionally. By participating in real projects, or when valued for their skills and creativity at the workplace, teachers can reveal their potential much more effectively and build motivation for continuing professional development. Careful analysis of educational practice proves that there are a sufficient number of teachers who intuitively use elements of Agile methodology. Positive results encourage them to implement entrepreneurial ideas, achieve entrepreneurial success and expand their experience.

Business planning is also one of the tools of project

-based learning in the context of continuing teacher education. In particular, it differs in the level of detailing and the list of indicators used to justify the economic benefits of implementing business ideas. A business plan is an economically sound analytical document that shows the reality of planning one's business. It offers an objective vision of development opportunities, ways to promote goods on the market, prices, possible profits, the main financial and economic results of activities, as well as identifies areas of risk and suggests ways to limit them. Such a plan is used regardless of the field of activity, scale, type of ownership, organizational and legal form. Furthermore, it allows solving internal tasks related to running one's business, and external ones, determined by the relationships with other companies and organizations. The components of a business plan also depend on the size of the expected market, the presence of competitors and the prospects for growth of the educational product (Khyzrych, 1993). Many teachers somehow avoid planning since it requires them to conceptually comprehend and present ideas, goals, methods and ways of running a business. They lack the necessary knowledge and experience to position themselves as start-up entrepreneurs. Business plans make it possible to determine the viability or

expediency of a planned business project. There is a saying that a business plan can tell what one is capable of (Yurhutis, 1998).

**Conclusions.** Thus, simulation games, design thinking, Agile methodology and business planning are the main tools of project-based learning used to teach professional-pedagogical entrepreneurship to primary school teachers in the system of continuing education. Design thinking is a tool with helps teachers test an entrepreneurial idea and, consequently, introduce educational products and services into the market. Agile methodology is widely used within the framework of advanced training for primary school teachers during which they learn practical techniques of planning individual sprints, creating roadmaps for business projects, developing delegation maps, engaging in mutual learning (from the back of the room), applying permanent reporting and receiving feedback. Business planning involves the following: prioritizing tasks; exceeding traditional learning and existing patterns; preparing for entrepreneurial thinking and managerial decision-making in market conditions; updating digital skills; defining the links between education and business. After learning how to develop business plans, teachers can analyze the prospects or expediency of a planned business project.

### List of references

- Изместьева, Е., 2015. *Что такое дизайн-мышление?* Доступно: <https://te-st.ru/2015/01/28/what-is-design-thinking/>
- Паздрій, В., 2019. Використання бізнес-симуляторів при формуванні компетентності підприємливості. *Розбудова єдиного відкритого інформаційного простору освіти впродовж життя*: збірник матеріалів Першого Міжнародного науково-практичного WEB-форуму. Київ-Харків.
- Хизрич, Р., 1993. *Предпринимательство или как завести собственное дело и добиться успеха*. М.: Прогресс-Универс.
- Юргутіс, І. А., 1998. *Основи менеджменту*: навч. посібник. Київ: Освіта.
- Яловега, І., 2019. Витоки дизайн-мислення: евристика в перший та другий етапи розвитку філософії та науки. *Фізико-математична освіта*, 4 (22), с. 150-156.
- Liedtka, J., Ogilvie, T., 2011. *Designing for Growth: A Design Thinking. Tool Kit for Managers*.
- Salza, P., Musmarra, P., Ferrucci, F., 2019. Agile Methodologies in Education. Review: *Bringing Methodologies from Industry to the Classroom year,1*, pp. 25-45
- Sutherland, J. 2014. *Scrum: The art of doing twice the work in half time*. New York: Random House.
- Highsmith, J., 2001. *Manifesto for Agile Software Development*. Доступно: <http://agilemanifesto.org/iso/uk/principles.html>.

### Translated & Transliterated

- Izmesteva, E., 2015. *Chto takoe dizayn-myishlenie?* [What is Design Thinking?]. Dostupno: <https://te-st.ru/2015/01/28/what-is-design-thinking/> [in Russian].
- Pazdrii, V., 2019. *Vykorystannia biznes-symulatoriv pry formuvanni komeptentnosti pidpriemlyvosti* [The use of business simulators in the formation of entrepreneurship competence]. *Rozbudova yedynoho vidkrytoho informatsiinoho prostoru osvity vprodovzh zhyttia*. [Building a single open information space for

*lifelong learning*]: збірник матеріалів Першого Міжнародного науково-практичного WEB-форуму. Київ-Харків, [in Ukrainian].

Khyzrych, R., 1993. *Predprynymatelstvo yly kak zavesty sobstvennoe delo y dobytsia uspekha* [Entrepreneurship or how to start your own business and succeed.]. M.: Prohress-Unyvers, [in Russian].

Yurhutis, I. A., 1998. *Osnovy menedzhmentu: navch. posibnyk*. [Basics of management]. Kyiv: Osvita, [in Ukrainian].

Yaloveha, I., 2019. *Vytoky dyzain-myslennia: evrystyka v pershyi ta druhyi etapy rozvytku filosofii ta nauky* [The origins of design thinking: heuristics in the first and second stages of development of philosophy and science.]. *Fizyko-matematychna osvita, [Physical and mathematical education]*, 4 (22), s. 150-156, [in Ukrainian].

Liedtka, J., Ogilvie, T., 2011. *Designing for Growth: A Design Thinking. Tool Kit for Managers*, [in English].

Salza, P., Musmarra, P, Ferrucci, F., 2019. *Agile Methodologies in Education. Review: Bringing Methodologies from Industry to the Classroom year,1*, pp. 25-45, [in English].

Sutherland, J. 2014. *Scrum: The art of doing twice the work in half time*. New York: Random House, [in English].

Highsmith, J., 2001. *Manifesto for Agile Software Development*. Доступно: <http://agilemanifesto.org/iso/uk/principles.html>, [in English].

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## ПРОЄКТНІ ТЕХНОЛОГІЇ НАВЧАННЯ ПРОФЕСІЙНО-ПЕДАГОГІЧНОМУ ПІДПРИЄМНИЦТВУ ВЧИТЕЛЯ ПОЧАТКОВОЇ ШКОЛИ В СИСТЕМІ НЕПЕРЕРВНОЇ ОСВІТИ

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### Реферат.

*Актуальність*: неперервність педагогічної освіти педагогів безпосередньо впливає на формування та розвиток їхньої педагогічної майстерності загалом, і професійної підприємливості зокрема; в останні роки означена проблема особливо потребує своєчасного та неперервного коригування, викликаного ще й тим, що саме вчителів початкової школи вважають первинним реалізатором державної політики у площині розвитку і формування майбутнього покоління; значущість формування інноваційних та підприємницьких якостей сучасного педагога підкреслюється тим, що в Україні, за останні роки, з'явилась велика кількість спеціалізованих гімназій та шкіл, зокрема приватної форми власності, спрямованих на активне і неперервне впровадження новітніх педагогічних технологій, пошук нових підходів до якісної підготовки молодого покоління до подальшого навчання, адаптації у суспільстві.

*Мета*: охарактеризувати проєктні технології навчання, впровадження яких забезпечить формування професійно-педагогічного підприємництва вчителя початкової школи.

*Методи*: *теоретичні*: системно-аксіологічний, структурно-порівняльний, структурно-логічний, *емпіричні*: теоретичний аналіз педагогічної, фундаментально-філософської, управлінської літератури, нормативних документів, матеріали періодичних фахових і науково-метричних видань із теми дослідження; структурно-логічний аналіз та систематизація.

*Результати:* на основі теоретичного аналізу опрацьованих джерел охарактеризовано найбільш ефективні проєктні технології навчання професійно-педагогічному підприємництву вчителів початкової школи, що передбачають формування в них комплексу підприємницьких знань, умінь і навичок, сприяють професійному зростанню, реалізації власних підприємницьких ідей та розвитку підприємницької ініціативності.

*Висновки:* основними проєктними технологіями навчання професійно-педагогічному підприємництву вчителя початкової школи в системі неперервної освіти є: технологія симуляційних ігор, технологія дизайн-мислення, Agile – технології та бізнес-планування.

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**Ключові слова:** *професійно-педагогічне підприємництво, вчитель початкової школи, неперервна освіта, проєктні технології навчання.*

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