

DOI: 10.32703/2415-7422-2024-14-1-64-84

UDC[378:93]:37.013-057.87

Liudmyla Holubnycha

Yaroslav Mudryi National Law University
77, Hryhoriya Skovorody Street, Kharkiv, 61024, Ukraine
E-mail: golubnichaya11@gmail.com
<http://orcid.org/0000-0002-8252-9893>

Olena Kuznetsova

Yaroslav Mudryi National Law University
77, Hryhoriya Skovorody Street, Kharkiv, 61024, Ukraine
E-mail: o.yu.kuznetsova@nlu.edu.ua
<https://orcid.org/0000-0003-1156-1842>

Dina Demchenko

Yaroslav Mudryi National Law University
77, Hryhoriya Skovorody Street, Kharkiv, 61024, Ukraine
E-mail: dena.demchenko@gmail.com
<http://orcid.org/0000-0003-0532-1199>

History of problem-solving teaching and learning evolution

Abstract. *The article focuses on the development of the problem-solving method in the history of Pedagogy both in theory and practice. The manuscript purpose is to characterize the history of problem-solving teaching and learning ideas development and instigate and inform their progress and implementation in higher education teaching practice in the second half of the 20th century. The methods used during the research were 1) methods of the theoretical level (analysis, synthesis, generalization) for clarifying the definition of the notion, singling out the shifts in the underlying ideas of the problem-solving method throughout human history, specifying the application of the problem-solving teaching method at universities in the second half of the previous century; 2) methods of historical research (historiographical, chronological, logical-historical, historical-typological) for characterizing the development of problem-solving teaching ideas in historical aspect, and determining their essential manifestations. The research results have revealed that problem-solving teaching and learning is perceived as the process of solving cognitive and practical problems by students stimulating their creative and mental activity and promoting their active participation in learning. The problem-solving teaching method that originated in*



ancient Greece was based on the ideas of famous historical figures and pedagogical practice of progressive educators and has made a long way in its advancement. The paper novelty lies in presenting the generalization of the problem-solving teaching and learning ideas historic evolution in education, in determining the problem-solving method ideas development stages based on the key elements of the given method, covering the structure of thought processes, stages of cognitive development, the significance of the problem situation in thinking and learning, the impact of problem-solving on one's intellectual potential, in tracing the problem-solving method use in higher education in the second part of the last century. The great potential of problem-solving teaching method was extensively exploited in higher education training practice. Problem-solving teaching and learning ideas and accumulated pedagogically valuable experience of their implementation in higher education provide a valuable theoretical framework and teaching means for future specialists' intellectual and professional competence ensuring and raising higher education quality.

Keywords: *history of pedagogy; problem-solving; teaching method; higher education; students*

Introduction.

The history of education worldwide reflects the desire to improve methods of teaching, raise quality of education, promote learners' interest, search for and introduce the most successful pedagogical methodologies and teaching tools. In fact, the history of Pedagogy is the history of striving for better and effective teaching theories and practice and teaching methods in particular. One of the greatest results of this search and developments in the sphere of education is represented by the implementation of problem-solving (the term has a number of synonyms such as: problem-based, inquiry-based, problem-oriented) teaching method.

A *problem* in education is viewed as a case that demands exertion and the application of existing knowledge and experience on the part of the learner to be solved (Felmer Perdomo-Díaz, Giaconi, & Espinoza, 2015). Accordingly, *problem-solving* deals with an individual's capacity to manage a challenge and means navigating the process of bridging the gap between the desired outcome and the present circumstances in a context influenced by variables encountered, whether previously experienced or not (Huitt, 1992; Min, Kim, & Yoo, 2021). Problem-solving requires learners to construct knowledge and use specific strategies to cope with difficulties (Ince, 2018; Karpushyna & Bloshchynsky, 2022).

In the era of modern challenges, the solution of educational problem situations is also introduced in modern computer learning (including interactive), which develops the creative ability, critical thinking and independence of the student (Abuzagha & Tabieh, 2021; Holubnycha, Besarab, Pavlishcheva, Kadaner, & Khodakovska, 2022; Iyagba, 2020; Mykytiuk, Sv., Lysytska, Chastnyk, & Mykytiuk, S., 2023). Therefore, this type of learning does not only gain audiences, but also is actively used by students for independent work (both interactive and receptive) facilitating both quality of education and soft skills of students.

The priorities of *problem-solving teaching and learning* (PSTL) make up the theories, concepts and practices suggested by some of the outstanding thinkers of the past, whose ideas have proved their relevance and effectiveness and are the attributes of this form of training. The study of the problem-solving teaching method development in historical aspect is topical as it helps to understand advantages and avoid mistakes when using it, sets the stage for further pedagogically significant findings.

Thanks to the research of historians of pedagogy, modern didactic practice has already been enriched by a number of pedagogically important provisions for the activation of students' educational and cognitive activities, organization of students' independent work, development of students' creativity; these all are facilitated by the use of PSTL method.

Recent literature review has confirmed that a lot of data have been accumulated on the theoretical aspects and practical cases of applying PSTL. However, rather few studies deal with the retrospective scrutiny of the given pedagogical phenomenon. Such studies tend to focus on specific areas of problem-based teaching implementation like the history of development of problem-solving competence (Posamentier, Kose, Virgadamo, & Keefe-Cooperman, 2019; Servant-Miklos, 2019b), problem-based teaching in medical universities (Servant-Miklos, 2019a, 2020; Servant-Miklos, Norman, & Schmidt, 2019), history of problem-solving use in teaching specific disciplines (Li, Song, Hwang, & Cai, 2020; Csachová, 2021), on presenting the developments in PSTL within brief historical periods (Alimova, 2022; Hudha et al., 2023; Zakaria, Maat, & Khalid, 2019) and practising it in different countries (Xiong, 2021).

Meanwhile, further analysis of the history of theoretical foundation and teaching techniques of PSTL development worked out by the pedagogical thought in different countries and presented in the paper, sheds the light on the PSTL history lacunas, brings forth and complements the data on the factors that influenced its evolution and priorities, deepens the level of historical analysis of the given approach and opens new perspectives on creative use of the problem-solving method in teaching, facilitating working out more effective strategies of problem-solving skills development as its principles have proved their effectiveness at all levels of education. Such findings are of both theoretical and practical value and allow for learners' intellectual development which has become the priority in the 21st century.

The **purpose** of the paper is to characterize the history of PSTL ideas development and instigate and inform their evolution and use in higher education teaching and learning practice (in the second half of the last century) in order to single out the most significant of them for modern teaching practice.

The **tasks** are 1) to specify the concept of PSTL; 2) to trace the history of PSTL ideas worked out by advocates of inductive reasoning and teaching practices; 3) to highlight the peculiarities of PSTL application at the tertiary level in the second half of the 20th century.

Methodology.

The stated purpose demanded the following set of methods to be used:

1) general methods of theoretical study such as analysis, synthesis, generalization of special literature in pedagogical history, pedagogical periodicals, and didactic sources. They were applied in order to clarify definition of the concept under research, to single out valuable PSTL ideas in the history of education, and to characterize the real application of PSTL at the tertiary level in the second half of the 20th century when it became an inseparable training process component at the tertiary level;

2) methods of historical research, namely: historiographical, chronological, logical-historical, and historical-typological. These methods allowed us to characterize the development of PSTL ideas in historical aspect and generalize them, to determine the essential components and features of the pedagogical phenomenon under study.

Results and Discussion.

1. Concept of PSTL.

Since in the early history of education PSTL did not exist in its present form, in order to find out pre-PSTL ideas, we need to single out specific components of the concept under study. For this purpose, we analysed modern definitions of PSTL. The most general of them define it as:

1) an established student-centred pedagogical approach wherein intricate real-life challenges serve as the conduit to foster students' comprehension of principles and concepts, contrasting with the straightforward presentation of facts and ideas (Duch, Groh, & Allen, 2001);

2) "an instructional method by which students learn through simplified problem-solving" (Nirchi, 2015, p. 1);

3) "an activity in which a learner perceives a discrepancy between a current state and a desired goal state, recognizes that this discrepancy does not have an obvious or routine solution, and subsequently tries to act upon the given situation in order to achieve that goal state. It is accompanied by a number of mental and behavioural processes that might not necessarily take place in sequential order but can run in parallel" (Hesse, Care, Buder, Sassenberg, & Grifn, 2015, p. 37).

So, according to the above definitions, the following specific components of PSTL have been determined: it is *student-centred* in nature. It is *directed at students' intellectual development* and their assimilation of knowledge by *involving them in active creative thinking*. In contrast to traditional explanatory and illustrative teaching, PSTL *focuses* not only on the assimilation of the results of scientific cognition, but also *on the cognition paths and methods of creative activity*.

2. PSTL in History of Teaching.

In the European educational context posing questions that cause difficulty in finding answers to them (method of enquiry) is associated with ancient Greek philosophers Socrates (470–399 BC) and his Socratic method and Plato (428/427 or 424/423–348/347 BC). They believed that mental activity could contribute to memory improvement and deeper penetration into the essence of objects, processes and

phenomena. In the new history, the desire to promote active learning dates back to the philosophical views of F. Bacon (1561–1626), who being called the father of empiricism, argued that acquisition of scientific knowledge has to be based only upon inductive reasoning and careful observation of events in nature (Compayré, 1886).

Since that time the long-running disputes between two trends in pedagogical theory and practice have begun – between those who supported material education with the focus on the content of education and supporters of formal education who highlighted the development of cognitive abilities of learners.

The ideas of active learning, of mobilizing learners' cognitive abilities by involving them in independent search activity associated with progressivism are reflected in the works of J. A. Comenius (1592–1670), J. J. Rousseau (1712–1778), W. Gilpin (1724–1804), D. Manson (1726–1792), J. H. Pestalozzi (1746–1827), A. V. Disterweg (1790–1866), and others, who were against dogmatic memorization of knowledge and supported active teaching methods.

J. A. Comenius who is known as one of the first supporters of active teaching of schoolchildren wrote about the need to arouse in pupils the thirst for knowledge and an ardent zeal for learning in contrast to the verbal and dogmatic teaching. J. J. Rousseau maintained that the teacher's task was to make a child interested and make him ask questions (Trotsko, 2008, pp. 145–147).

The study confirms that almost in every state there were political and public officials, educators and teachers who tried to implement unorthodox pedagogical ideas believing that they could provide for better quality of education and better results in teaching and learning.

For example, in England in the 50s of XVIII century two personalities who did not know each other – W. Gilpin (the artist, Anglican cleric, schoolmaster and author) and D. Manson (an Irish schoolmaster) introduced and carried out a number of creative transformations in teaching in order to exclude “drudgery and fear” and promote ‘uprightness and utility’ (Stewart, 1972, pp. 152–157).

They both wanted to change the traditional for that period of time forms and methods of teaching. They were against corporal punishment for pupils and pioneered the use of play and peer tutoring in schooling. Nevertheless, in general that was the time when the task of schools was to develop obedient and patient young people (Barnard, 1947, pp. 212–215).

However, in the second half of XVIII century pedagogical theory and practice began to polarize around the traditional classical Christian and the “new” one, based on natural sciences, trends in education in England and later in the middle of XIX century several innovative proactive pedagogical trends were formed.

One of them was connected with the ideas of European Enlightenment and Jean-Jacques Rousseau's theory. In England one of its followers was D. Williams (1738–1816), who argued that if a child grew up in accordance with his/her natural inclinations in the natural environment, then he/she would grow up healthy and would have a healthy and active mind (Stewart, 1972, pp. 161–164).

Similar ideas were advocated by the Swiss educator J. H. Pestalozzi. He believed that mental education should be carried out in accordance with the natural way of

child's cognition following the principle of conformity to nature and child's self-activity (Trotsky, 2008, p. 148).

Another trend was represented in the ideas and activities of R. Owen (1771–1858), who, trying to make education more attractive and interesting for children, believed that: there was no room for corporal punishment in school education; teachers had to be kind to their pupils; the best forms of teaching were conversations and discussions; alternation of lessons and games had to be observed; attention had to be paid to the development of children's thinking abilities (Stewart, 1972, pp. 169–171).

F. A. Disterweg argued that the teaching method was good if it activated the student's cognitive activity, but if it only made learners memorize the material under study, then this teaching method was bad (Trotsky, 2008, p. 149).

The next trend followed the ideas of Pestalozzi and was represented by philanthropists Lady Byron (1792–1860) and James Kay-Shuttleworth (1804–1877). They wanted to create conditions in schools allowing pupils to reveal their own initiative in learning and providing for their independent activities in the educational process. They applied their ideas in practice in teaching pupils Geography, History and other disciplines (Kuznetsova, 1990).

Although we cannot claim all the outstanding philosophers and educators mentioned above to be the theorists of real PSTL ideas, their thoughts were advanced and innovative for their time, close to child-centred concepts in education, directed at cognitive development through problem-solving and became predecessors for the current PSTL framework.

The creative ideas and efforts directed at improving the process of teaching and learning, creating schools for all social groups of children and developing new active methods of teaching appeared in the pedagogical activities of public personalities and teachers in the pedagogical history of almost every state. However, ideas and activities of some of them influenced theoretical pedagogical thought and school practice developments all over the world. So, J. Dewey (1859–1952), the American philosopher, psychologist, and educator is the one whose contribution to PSTL is a vivid example of the case. Due to his outstanding innovative ideas and pedagogical activities the early 20th century marked a special stage in the development of theory and practice of PSTL. This was he, who launched a new didactic system, the priority method of teaching and learning in which was problem-solving one (Jagger, 2023).

J. Dewey rejected the dominance of traditional learning and insisted on the value of active self-learning of students through their solving problems. Thus, learners' self-activity and self-learning based on the interests and real needs of schoolchildren became the focus of his innovative activity in Chicago schools in 1895. Besides, his theory of learning highlights the idea of "complete act of thinking" elaborated by him, pointing to the fact that a student begins thinking when he faces challenges, the overcoming of which holds significant importance for him. In the work "How We Think" (1909), he defined thinking as the solution of problems, rejected traditional dogmatic teaching and contrasted it with the active practical activities of learners solving problems. He argued that students' ability to solve problems was based on their inborn mental characteristics. Emphasising the importance of critical thinking and the

vital role education should play in this process, he believed that the thought of an individual moved naturally through several stages to the point at which all aspects of the problem became clear (Dewey, 1910).

Besides, the ideas of another American psychologist J. Bruner (1915–2016) also played a significant role in the development of the theory of discovery (problem-solving) learning. His approach deals with organizing education materials and emphasizes the primary role of intuitive thinking in the acquisition of new knowledge, serving as the foundation of heuristic thinking. J. Bruner focused on: the importance of the knowledge composition in the organization of training; students' readiness to study as a factor of learning; intuitive thinking as a basis for the development of mental activity; motivation for learning (Bruner, 1960).

Alongside the efforts of educators and practicing teachers, the contribution of psychologists into PSTL ideas evolution who maintained that intellectual development is defined not solely by the quantity and calibre of acquired knowledge, but also by the configuration of cognitive processes, encompassing the array of logical operations and intellectual manoeuvres that the learner masters, and believed that each student moved through certain stages in their cognitive development (S. Rubinshtein (1889–1960), J. Piaget (1896–1980)) was made. Besides, the psychologists elaborated on the significance of the problem case in the processes of cognition and learning (Gutiérrez et al., 2018).

A number of other outstanding educators and scholars analysed the problem-solving method principles and allowed for other pedagogical concepts to be developed on their basis during the 20th century. So, V. Sukhomlynskyi (1918–1970) stressed the importance of applying the problem-solving method of teaching and learning developing his theory of humane didactics, according to which a person is of the highest value, so the task of education is to create conditions for the development of personality, its creative potential, natural inclinations and abilities, to help in one's life self-determination. The educator highly valued the development of intellectual activity in the organization of independent cognitive activity of students. He believed that the problem-solving method of learning ensured organizing, managing and intensifying learners' cognitive activity and contributed to education quality improvement. Thus, V. Sukhomlynskyi developed a technology of PSTL use for effective development of children and raising the quality of education (Sukhomlynskyi, 1981).

Significant attention to PSTL was paid by a great number of researchers of the second half of the 20th century. Stewart (1950) was proving that problem-solving method of teaching and learning was an effective one; Krebs (1967) was looking for essential elements necessary for more effective teaching with problem-solving method; Newell and Simon (1972) as well as Gubitz (1984) were considering the relations between human problem solving and development of the students' potential in intellectual sphere; Barrows and Neufeld (1974) coined the term "problem-based learning" that is synonymous to PSTL; Flavell (1976) was discovering metacognitive aspects of problem solving in the organization of learning activities, focused on shaping their intellectual abilities, cognitive activity, self-sufficiency and cognitive interests; Polya (1973) and Mayer (1983) revealed the best way to develop students'

intellectual abilities through solving educational problems; Moore G. E. & Moore B. A. (1984) were trying to investigate the problem solving as a holistic approach to teaching: its content, principles, organizational forms; Van Gundy (1987) prepared a guide for trainers presenting a great number of creative problem solving tasks.

It is important to point out that the PSTL issues were studied not only by individual scholars and educators but also by Scientific Didactic Schools. A. Zilberstein's Kharkiv Scientific Didactic School was an example of such joint efforts of researchers to further promote PSTL theory and practice. Thus, current issues of problem-solving learning were considered by the scientist and his followers in the early 1970s. This group of scholars studied how problem questions and tasks could help to test student's knowledge (Lozovaya, 1972), use of visual aids in problem-solving activity of students (Evdokimov, 1973, 1988, 1989), individual approach to students carrying out problem-solving activity (Barabash, 1975), organization of mental work of students (Evdokimov, Lozova, & Mozhayeva, 1985) and other PSTL concerned aspects.

Another evidence of the further development of the problem under study was the creation of the problem laboratory of experimental didactics. The authors of this investigation managed to find it under the direction of I. Fedorenko in H. S. Skovoroda Kharkiv State Pedagogical Institute (1966–1982) (Lozova & Trotsko, 2001).

Active work of the given didactic school and the problem laboratory of experimental didactics facilitated a significant increase in the number of publications on PSTL. In addition, there was deepening of the level of research ranging from the study and generalization of learning experience to the development of various aspects of the theoretical framework of the didactic problem under study. As a result of the efforts of numerous scholars, PSTL goals (acquisition of competences, knowledge, skills and abilities; mastering methods of independent cognitive activity; development of cognitive and creative abilities) were specified, methods for creating problem situations in various educational disciplines were developed, problem-solving teaching methods (e.g. heuristic method of presentation, of problem presentation, of partial search, of search-simulation, reasoning teaching method, research method etc.) were investigated and criteria for assessing the problem intellectual assignment complexity were identified. The search for ways to increase the effectiveness of teaching and optimization of learning and mental activities contributed to the development of various aspects of problem-based learning (content and structure specific, methodological and technological ones).

Thus, on the basis of theoretical and practical developments accumulated as a result of research efforts of many generations of educators a number of fundamental findings on different aspects of PSTL were amassed by the end of the 20th century. Summarized PSTL ideas of outstanding thinkers and educators are presented in Table 1.

Table 1

Development of PSTL ideas suggested by outstanding philosophers and educators

Developers	Ideas
“Intuitive” PSTL development	
Socrates	developed the argumentative dialogic method that leads to the “birth” of truth (knowledge)
Plato	claimed that mental activity contributes to memory improvement and deeper penetration into the essence of objects, processes and phenomena
Bacon	put forward the idea that acquisition of scientific knowledge has to be based only upon inductive reasoning and careful observation of events in nature
Comenius	● launched and advocated active teaching of schoolchildren ● advocated the necessity to arouse the desire for getting knowledge in pupils
Rousseau	believed that the teacher’s task is to make a child interested and make them ask questions
Gilpin	insisted on changing traditional methods of teaching and recommended using playing activities and peer tutoring in schools
Manson	
Williams	held that children should grow up in accordance with their natural inclinations in the natural environment
Pestalozzi	asserted that mental education should be carried out in accordance with the natural way of child’s cognition following the principle of conformity to nature and child’s self-activity
Owen	● propagated conversations and discussions as the best teaching forms ● argued that attention should be paid to the development of children’s thinking abilities
Disterweg	claimed that the teaching method was good if it activated the student’s cognitive activity
Lady Byron	

Kay-Shuttleworth	advocated creating conditions allowing pupils to reveal their own initiative in learning and providing for their independent activities in the teaching process
PSTL development based on theoretical findings	
Dewey	● instigated modern PSTL, strongly recommending replacing traditional learning with active self-learning through problem solving ● considered thinking as the solution of problems ● believed that students' ability to solve problems is based on their inborn mental characteristics
Rubinshtein	elaborated the theory of activity, establishing that activity is a powerful means of a thinking process
Piaget	created the developmental theory, stating that a child comes through certain stages in cognitive development
Bruner	● pointed to the importance of structuring knowledge in the organization of training ● emphasised the value of motivation and intuitive thinking as a basis for the development of mental activity
Sukhomlynskyi	● developed the theory of humane didactics, focusing on the creation of conditions for the development of personality, important part of which is intellectual development ● claimed that PSTL ensures intensifying learners' cognitive activity
Stewart	asserted the efficiency of PSTL
Krebs	elaborated on essential elements necessary for more effective PSTL
Newell & Simon, Gubitz	determined relations between human problem solving and development of the students' intellectual potential
Barrows & Neufeld	coined the term "problem-based learning" that is synonymous to PSTL
Flavell	discovered metacognitive aspects of problem solving in the organization of PSTL focusing on the formation of students'

	mental abilities, cognitive activity, independence and cognitive interests
Polya, Mayer	revealed the effective way to develop students' intellectual abilities through PSTL
Moore G.E. & Moore B.A.	generalized the problem-solving as an approach to teaching
Van Gundy	prepared a guide for trainers presenting a considerable number of creative problem-solving tasks
Zilberstein's Kharkiv Scientific Didactic School	investigated: ● how problem questions and tasks can help to test student's knowledge ● how to use visual aids in PSTL ● individual approach to students in PSTL ● how to organize students' mental work in PSTL
problem laboratory of experimental didactics	● specified PSTL goals ● developed methods for creating problem situations in various educational disciplines ● probed for problem-solving teaching methods ● identified the criteria for assessing the problem intellectual assignment complexity

3. *PSTL Application at the Tertiary Level (the second half of the 20th century).*

While numerous researchers elaborated on theoretical aspects of PSTL, teaching expert mentors and teaching professionals creatively developed and implemented in the practice of higher education various methodological strategies and techniques based on the PSTL ideas to improve the quality of future professionals' training at higher education institutions.

Different didactic sources testify that in the second half of the 20th century PSTL was applied widely at the tertiary level during lectures, seminars, laboratories and other types of classes, as one of the key tasks of higher education was defined as the purposeful development of an active, creative and free personality, based on the conception providing that one's views and beliefs, as well as their abilities are best developed in active setting, the nature of which determines the development level of these qualities (Oksa, 1997). The development of creative abilities occurs only during

the search activity, the organization of which is the essence of problem-solving teaching method (Maheshwari, 2017).

In the course of didactic investigation Viktorov (1964) fixed significant experience of a higher education institution lecturer (D. Gordevskyi). So, those problem-solving lectures presupposed a number of small problems (10–12 situations per a lecture) that were being solved in the course of dialogic interaction with the students. As soon as the lecturer was a strong supporter of encouraging students' independent cognitive activity and creativity, he stimulated his students to propose their own definitions as well as to draw conclusions. Thus, the information acquired by the students in an active manner in close interaction with their teacher was perceived by them as personally valuable and essential.

Nizamov (1970) gave an account of his own efforts to improve a problem-solving lecture. In this case, students were asked questions and given problem situations that stimulated them to work independently and intensified their cognitive activity. However, provoking students' independent learning, he believed that the problem questions encouraged students' cooperation pointing to the importance of both aspects for effective learning.

Offering his real practice with four inquiry projects Knowles (1975) perceived the role of the teacher as that of a facilitator of learning rather than a traditional instructor, emphasizing guidance in procedures rather than transmission of content.

Organization and management of students' intellectual activity with PSTL assistance included not only methods of problem presentation of the teaching material at lectures but also were used during practical classes where students' attention and thinking were inspired by using problem-solving practical tasks. Palant (1982) described his experience in designing banks of tests and tasks of problem-solving character.

Moreover, our investigation proves that considerable attention was paid to PSTL because of its potential to promote the development of creativity and independence of future professionals. As during the 1980s the priority was given to students' independent work, measures were taken to improve the organization of such work in higher education institutions. PSTL was given priority in the higher education teaching process as a means to achieve the goals set and a didactic strategy ensuring and stimulating active independent cognitive and exploratory activity, independent problem solving, search and identification of constructive solutions, overcoming problem situations, etc. (Rybalko, 1987).

Historiographical research of Holubnycha & Moshynska (2020) established that the pedagogical press of the second half of the last century tended to cover the urgent issues of PSTL in higher education, proving that at that time it was already regarded as a valuable asset of university pedagogical experience. Especially actively PSTL practice was discussed in the 1980s, as evidenced by numerous works. The authors reported on the use of problem-solving learning elements in lectures and practical classes (Kholodova, Sirotenko, & Petrova, 1980), problem-solving lectures (Shtelmakh, 1981), ways of activating students' mental activity in lectures (Stashys, 1986), promoting students' activity in practical classes (Yushchenko, 1981),

intensification of students' creativity in group classes (Omelchenko, 1981), problem-solving learning in laboratory classes (Rybalko, 1987), use of visuals in problem-solving learning (Urbanskyi, 1986).

Problem-solving lectures presented educational material on the curriculum themes as a problem considered from differing perspectives. Considering the distinctive features of problem-solving cognition and the enhancement of students' intellectual engagement, heuristic methods became predominant as an approach to presenting lecture material based on problem-solving principles (Holubnychy & Moshynska, 2020).

The research data suggest that PSTL application in higher education is also strongly associated with the practical activities of individual academics and lecturers who were advocates of the given educational strategy. In this context useful material is presented by Honchar (2011). The author collected the memories of students of the late 1980s and early 1990s. As evidenced by them, the most successful were the classes of those lecturers who moved away from traditional authoritarian teaching methods. For example, the lecturer of Lexicology (L. Pelepeichenko) chose the order of presenting scientific facts in her lectures in such a way that the objective contradictions of the teaching material content were highlighted, causing the cognitive interest of students and the desire to solve the discrepancy. Although the teacher asked questions, they did not necessarily require an accurate answer; they were used by the lecturer to engage the audience in analysis of imaginary problem situations. This method of teaching required from the teacher and students an in-depth analysis of the teaching material.

Another case example is the method of a problem lecture organization with the use of so-called stencils (M. Yakymenko). The entire text of the lecture was presented with a number of intentional omissions. The absence of a certain piece of the text signalled its special importance for the assimilation by students, as well as the fact that its completion required students to process certain information and make generalizations. This stencil-based form of presentation of lecture material freed up time for problematic discussions of other important teaching issues, intensified students' thinking, and at the same time provided for encouraging a pedagogically valuable working dialogue of students and lecturers. This method of organizing teaching activities ensured a high level of students' readiness for the lectures, adherence to the stencil pattern facilitated the assimilation of the lecture material, helped to focus students' attention on the lecture content, encouraged their active learning and intensified their intellectual skills as well as their independent work.

During the 1990s, to enhance students' independent work using PSTL, lecturers involved students in joint discussion and solving educational issues, stimulated student youth to solve problems independently (Blumenfeld et al., 1991). At the stage of setting hypotheses, teachers directed their efforts to ensure that students learn to offer their vision of the problem, to "reflect-in-action and reflect-on-action" (Schön, 1991), to prove their rightness, to choose the most adequate solutions to the problem (Gerzhod, 1992).

Another trend of the 1990s was a rather broad application of case-study. Academic staff were training their students to effectively communicate and utilize knowledge adaptively for addressing professional challenges. Within the framework of PSTL, team members articulated their existing knowledge and identified areas for further learning, facilitating the cultivation and adaptable application of knowledge in problem-solving endeavours. Consequently, this fostered collaborative interactions within communities of practice, providing the students with a productive platform for problem-solving and meaningful dialogue (Lave & Wenger, 1991). Dealing with case-study students encountered numerous intricate challenges necessitating collaboration with their peers. They engaged in activities such as framing the problems, considering diverse perspectives, deliberating solutions, contemplating outcomes, and reflecting on their decisions (Harrington, 1995).

Thus, in the second part of the 20th century PSTL proved to be an essential element of university education due to the accumulated data on its intensified students' cognitive activity fostering. However, the limitations of the study are certain aspects of essential difficulties in the organization of PSTL such as: staff qualification and readiness to design educational problems as they need to be tailored to students' prior knowledge, carefully formulated and relevant to the identified learning outcomes; awareness of the peculiarities of each stage of the problem-solving process; work overload and time it takes to plan teaching procedure and prepare course materials and necessary resources.

Conclusions.

Thus, the results of the study provide useful insights into the history of PSTL that allowed us to characterize its development in educational history through essential ideas of outstanding thinkers and educators, and determine its specifics at the tertiary level teaching and learning practice in the second part of the 20th century.

1. The analysis of modern scholarly ideas on the definition of PSTL has allowed us to single out the following specific components of this concept: student-centred nature, directed at students' intellectual development, involvement in active creative thinking, focused on the cognition paths and methods of creative activity.

2. Summarising the research data on the evolution of PSTL ideas in the history of Pedagogy, the conclusion has been drawn that 1) PSTL ideas advancements were strongly linked with the efforts of individual outstanding thinkers, educators, public personalities and teachers of different historic periods; 2) PSTL evolution may be divided into two periods: I. Intuitive PSTL ideas development; II. PSTL ideas development based on theoretical findings; 3) intuitive PSTL ideas were close to child-centred concepts, directed at intellectual development as a reaction to dogmatic methods of teaching and became predecessors for the current PSTL framework; 4) the period II of PSTL ideas development is characterized by a significant increase in the number of studies; 5) researchers of the period II delved into the structure of knowledge, the structure of thought processes, stages of cognitive development, the significance of the problem case in thinking and learning, effectiveness of PSTL, the impact of problem-solving on one's intellectual potential; 6) PSTL ideas development

based on theoretical findings were suggesting teaching that could both activate students' learning and develop their cognitive abilities.

3. The research data on peculiarities of PSTL application at the tertiary level in the second half of the 20th century suggest that: 1) PSTL became an essential teaching approach in higher education institutions; 2) PSTL were being implemented in all kinds of classes: lectures, practical and laboratory classes as well as students' individual work; 3) PSTL aimed to develop the existing teaching methodologies and techniques, to work out teaching models allowing students to reveal their own initiative and engagement in learning, critical thinking, knowledge retention and providing for their independent learning; 4) the pedagogical success of PSTL nevertheless was associated with the individual aspirations of university staff for arranging the educational setting promoting students' active participation in the process of teaching and learning.

Funding.

This research received no external funding.

Conflict of interest.

The authors declare no conflict of interest.

References

- Abuzagha, H. & Tabieh, A. (2021). Soft skills: the success formula for the newly EFL hired graduates in the educational workplaces during and post Covid-19. *Asian EFL Journal*, 28(3.2), 39–53. Retrieved from https://www.researchgate.net/profile/Ahmad-Tabieh/publication/352771989_Soft_Skills_The_Success_Formula_for_the_Newly_EFL_Hired_Graduates_in_the_Educational_Workplaces_During_and_Post_Covid-19/links/60d7b445299bf1ea9ec3a8ce/Soft-Skills-The-Success-Formula-for-the-Newly-EFL-Hired-Graduates-in-the-Educational-Workplaces-During-and-Post-Covid-19.pdf
- Alimova, E. A. (2022). The history of the origin and development of problem-based learning technology. *Ekonomika i Socium – Economics and Society*, (11(102)), 58–61. Retrieved from <https://cyberleninka.ru/article/n/the-history-of-the-origin-and-development-of-problem-based-learning-technology>
- Barabash, V. (1975). *Individualnyi podhod k uchashimsya v usloviyah problemno-poiskovoy deyatel'nosti [Individual approach to students in terms of problem-solving activity]*. (Ph.D. dissertation). Odessa State Pedagogical University, Odessa, Ukraine [in Russian].
- Barnard, H. C. (1947). *A short history of English education from 1760 to 1944*. London: University of London Press. Retrieved from <https://archive.org/details/in.ernet.dli.2015.506979/page/n3/mode/2up>
- Barrows, H. S., & Neufeld, V. (1974). The “McMaster philosophy”: An approach to medical education. *Journal of Medical Education*, 49(11), 1040–1050. Retrieved from https://journals.lww.com/academicmedicine/abstract/1974/11000/The_McMaster_Philosophy__an_approach_to_medical.4.aspx

- Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. *Educational Psychologist*, 26(3–4), 369–398. <https://doi.org/10.1080/00461520.1991.9653139>
- Bruner, J. (1960). *The process of education*. Cambridge, MA: Harvard University Press.
- Compayré, G. (1886). *History of pedagogy*. Boston: D. C. Heath & Co. <https://doi.org/10.4324/9781315650449>
- Csachová, L. (2021, August). *Looking back in problem solving with future primary school teachers*. Proceedings International Symposium Elementary Mathematics Teaching SEMT 2021, (pp. 157–166). Prague: Charles University. Retrieved from <https://www.semt.cz/proceedings/semt-21.pdf>
- Dewey, J. (1910). *How we think*. Boston, New York, Chicago: D. C. Heath & Co.
- Duch, B. J., Groh, S. E., and Allen, D. E. (Eds.) (2001). *The power of problem-based learning*. Washington: The George Washington University, DC: ERIC Clearinghouse on Higher Education.
- Evdokimov, V. (1973). *Ispolzovanie sredstv naglyadnogo obucheniya v usloviyah problemno-poiskovoy deyatel'nosti uchashchisya [Using visual aids in problem-solving activity of students]*. (Ph.D. dissertation). Kyiv State Pedagogical University, Kyiv, Ukraine [in Russian].
- Evdokimov, V. (1988). *Naglyadnost i effektivnost obucheniya [Visibility and effectiveness of learning]*. Kharkiv State Pedagogical Institute, Kharkiv, Ukraine [in Russian].
- Evdokimov, V. (1989). *Povyishenie effektivnosti obucheniya sredstvami naglyadnosti [Improving the effectiveness of learning through visual aids]*. Kharkiv State Pedagogical Institute, Kharkiv, Ukraine [in Russian].
- Evdokimov, V., Lozova, V., & Mozhayeva, N. (1985). *Organizatsiya umstvennogo truda studentov [Organization of mental work of students]*. Kharkiv State Pedagogical Institute, Kharkiv, Ukraine [in Russian].
- Felmer, P., Perdomo-Díaz, J., Giaconi, V., & Espinoza, C. G. (2015, February). *Problem solving teaching practices: Observer and teacher's view*. CERME 9 – Ninth Congress of the European Society for Research in Mathematics Education, Charles University in Prague, Faculty of Education, ERME 2015, (pp. 3022–3028). Prague, Czech Republic. Retrieved from <https://hal.science/hal-01289734/document>
- Flavell, J. H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Ed.), *The nature of intelligence* (pp. 231–236). Hillsdale: Erlbaum.
- Gerzhod, G. (1992). *Ispolzovanie problemnykh situatsiy v samostoyatel'noy rabote studentov [The use of problem situations in the independent work of students]*. *Samostoyatel'naya rabota studentov kak prioritetnaya forma uchebnogo processa – Independent work of students as a priority form of the educational process*, (92), 23–29 [in Russian].
- Gubitz, A. C. (1984). *Instant personal problem solving: Simplified approaches for everyone*. Danville, Illinois: The Interstate Printers & Publishers, Inc.
- Gutiérrez, R., M. F., Taborda, H., Kronborg, L., Salas, G., Cornejo, C., & Caycho-Rodríguez, T. (2018). Special issue: Educational Psychology and development in

- the 21st century. *Universitas Psychologica*, 17(5), 1–5. <http://doi.org/10.11144/Javeriana.upsy17-5.peds> [in Spanish].
- Harrington, H. L. (1995). Fostering reasoned decisions: Case-based pedagogy and the professional development of teachers. *Teacher and Teacher Education*, 11(3), 203–214. [https://doi.org/10.1016/0742-051X\(94\)00027-4](https://doi.org/10.1016/0742-051X(94)00027-4)
- Hesse, F., Care, E., Buder, J., Sassenberg, K., & Grifn, P. (2015). A framework for teachable collaborative problem-solving skills. In P. Grifn & E. Care (Eds.), *Assessment and teaching of 21st century skills* (pp. 37–56). Dordrecht: Springer. https://doi.org/10.1007/978-94-017-9395-7_2
- Holubnycha, L., & Moshynska, O. (2020). The experience of organizing a problem-solving lecture in the middle of the twentieth century. *Scientific notes of the Department of Pedagogy*, (47), 51–70. <https://doi.org/10.26565/2074-8167-2020-47-06>
- Holubnycha, L., Besarab, T., Pavlishcheva, Ya., Kadaner, O., & Khodakovska, O. (2022). E-Learning at the Tertiary Level in and after Pandemic. *Acta Paedagogica Vilnensia*, 48, 47–60. <https://doi.org/10.15388/ActPaed.2022.48.3>
- Honchar, O. (2011). *Pedahohichna vzaiemodiia uchasykyv navchalnoho protsesu v systemi vyshchoi osvity Ukrainy (istoryko-pedahohichniy aspekt) [Pedagogical interaction of participants in the educational process in the system of higher education in Ukraine (historical and pedagogical aspect)]*. Kharkiv: Kharkiv National Automobile and Highway University [in Ukrainian].
- Hudha, M. N., Etikamurni, D. P., Rasuli, I. P. A., Safitri, N. S., Perwita, C. A., & Dian Ayu, H. (2023). Problem based learning (PBL) – Problem solving skills (PSS): Systematic Literature review. *Indonesian Journal of Integrated Science Education*, 5(2), 103–116. <http://dx.doi.org/10.29300/ijisedu.v5i2.10603>
- Huitt, W. (1992). Problem solving and decision making: Consideration of individual differences using the Myers-Briggs Type Indicator. *Journal of Psychological Type*, 24, 33–44. Retrieved from <https://www.edpsycinteractive.org/papers/1992-huitt-mbti-problem-solving.pdf>
- Ince, E. (2018). An overview of problem-solving studies in physics education. *Journal of Education and Learning*, 7(4), 191–200. <https://doi.org/10.5539/jel.v7n4p191>
- Iyagba, P. W. (2020). Learning and problem solving: the use of problem-solving method to achieve learning in pupils. *African Social and Educational Journal*, 9(3), 239–250. Retrieved from https://www.researchgate.net/publication/357457842_learning_and_problem_solving_the_use_of_problem_solving_method_to_achieve_learning_in_pupils
- Jagger, C. (2023). *Learning as problem-solving in the art and science of teaching agriculture: four keys to dynamic learning*. Retrieved from <https://pressbooks.lib.vt.edu/teachagriculture/chapter/learning-as-problem-solving/>
- Karpushyna, M., & Bloshchynsky, I. (2022). English for border guards by means of problem-based technology. *The International Journal of Law, Language & Discourse*, 10(1), 86–109. <https://doi.org/10.56498/1012022340>
- Kholodova, S., Sirotenko, N., & Petrova, A. (1980). Ispolzovanie elementov problemnogo obucheniya na lektsiyah i prakticheskikh zanyatiyah po kursu nachertatelnoy geometrii [Using elements of problem-based learning in practical

- classes on the course of descriptive geometry]. *Problemy Vysshej Shkoly – Problems of Higher Education*, (40), 9–16 [in Russian].
- Knowles, M. S. (1975). *Self-directed learning. A guide for learners and teachers*. Cambridge: Englewood Cliffs.
- Krebs, A. H. (1967). *For more effective teaching* (second edition). Danville: The Interstate Printers and Publishers, Inc.
- Kuznetsova, Ye. Yu. (1990). *Voprosy aktivizatsii uchebnoy deyatel'nosti shkolnikov v angliyskoy pedagogike i shkole 60–70-h godov [Issues of engaging schoolgoers in active learning in english pedagogy and schools in the 60–70s]*. (Ph. D. dissertation). H. S. Skovoroda State Pedagogical University, Kharkiv, Ukraine [in Russian].
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University.
- Li, X., Song, N., Hwang, S., & Cai, J. (2020). Learning to teach mathematics through problem posing: teachers' beliefs and performance on problem posing. *Educational Studies in Mathematics*, 105, 325–347. <https://doi.org/10.1007/s10649-020-09981-0>
- Lozova, V. I., & Trotsko, H. V. (Eds.). (2001). *Kafedra pedahohiky: mynule i suchasnist. Kharkivskiy derzhavnyi pedahohichnyi universytet imeni H. S. Skovorody [Department of pedagogy: past and present. H. S. Skovoroda Kharkiv State Pedagogical University]*. Kharkiv: OVS [in Ukrainian].
- Lozovaya, V. (1972). *Ispolzovanie problemnykh voprosov i zadaniy dlya proverki znaniy uchashchysya [Using problem questions and tasks to test student's knowledge]*. (Ph. D. dissertation). Kyiv State Pedagogical University, Kyiv, Ukraine [in Russian].
- Maheshwari, V. K. (2017, January 4) The Problem-Solving Method in Education. Retrieved from <http://www.vkmaheshwari.com/WP/?p=2375>
- Mayer, R. (1983). *Thinking, problem solving, cognition*. New York: W. H. Freeman and Company.
- Min, J., Kim, H., & Yoo, J. (2021). Effects of self-esteem, problem-solving ability, and professional nursing values on the career identity of nursing college students in South Korea: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 18(16), 8531. <https://doi.org/10.3390/ijerph18168531>
- Moore, G. E., & Moore, B. A. (1984). The problem-solving approach to teaching: Has it outlived its usefulness? *The Journal of the American Association of Teacher Educators in Agriculture*, 25(2), 3–10. <https://doi.org/10.5032/jaatea.1984.02003>
- Mykytiuk, Sv., Lysytska, O., Chastnyk, O., & Mykytiuk, S. (2023). Digital passion projects for online education in emergencies, *International Journal of Interactive Mobile Technologies*, 17(7), 82–96. <https://doi.org/10.3991/ijim.v17i07.38397>
- Newell, A., & Simon, H. A. (1972). *Human problem solving*. Cambridge: Englewood Cliffs.
- Nirchi, S., (2015). Instructional method of problem based learning. *QTimes – webmagazine*, VII(2), 41–50. Retrieved from https://www.qtimes.it/?p=file&d=201907&id=nirchi_qtimes_aprile-15.pdf
- Nizamov, R. (1970). Lektsiya i ee sovershenstvovanie [Lecture and its improvement]. *Sovetskaya Pedagogika – Soviet pedagogy*, (3), 55–60 [in Russian].

- Oksa, M. M. (1997). *Vyvchennia dystsyplin zahalno-pedahohichnoi pidhotovky vchytelia u pedahohichnykh vuzakh Ukrainy (1917–1991 rr.)* [Study of disciplines of general pedagogical training of teachers in pedagogical universities of Ukraine (1917–1991)]. Kyiv: International Finance Agency [in Ukrainian].
- Omelchenko, P. (1981). Aktivizatsiya tvorchestva studentov na gruppovyih zanyatiyah po profiliruyushchim distsiplinam [Intensification of students' creativity in group classes in specialized disciplines]. *Problemy Vysshej Shkoly – Problems of Higher Education*, (43), 100–102 [in Russian].
- Palant, Yu. (1982). Kontrol samostoyatelnoy raboty studentov kak element programnogo upravleniya obucheniem [Didactic possibilities of problem-oriented control programs]. *Problemy Vysshej Shkoly – Problems of Higher Education*, (48), 46–49 [in Russian].
- Polya, G. (1973). *How to solve it*. Princeton: Princeton University Press.
- Posamentier, A. S., Kose, G., Virgadamo, D. S., & Keefe-Cooperman, K. (2019). A brief history of problem solving. Problem solving in mathematics and beyond. In *The Psychology of Problem Solving*, 12, 5–28. https://doi.org/10.1142/9789811205712_0002
- Rybalko, M. (1987). Problemnoe obuchenie na laboratornyih zanyatiyah po TOE [Problem-solving learning in laboratory classes with Theoretical foundations of electrical engineering]. *Problemy Vysshej Shkoly – Problems of Higher Education*, (61), 91–103 [in Russian].
- Schön, D. A. (1991). *The reflective turn: case studies in and on educational practice*. New York: Teachers Press, Columbia University
- Servant-Miklos, V. (2019a). Fifty years on: a retrospective on the world's first problem-based learning programme at McMaster University Medical School. *Health Professions Education*, 5(1), 3–12. <https://doi.org/10.1016/j.hpe.2018.04.002>
- Servant-Miklos, V. (2019b). Problem solving skills versus knowledge acquisition: the historical dispute that split problem-based learning into two camps. *Advances in Health Sciences Education Theory and Practice*, 24(3), 619–635. <https://doi.org/10.1007/s10459-018-9835-0>
- Servant-Miklos, V. (2020). Problem-oriented project work and problem-based learning: “Mind the gap!”. *The Interdisciplinary Journal of Problem-based Learning*, 14(1), 1–16. <https://doi.org/10.14434/ijpbl.v14i1.28596>
- Servant-Miklos, V. F. C., Norman, G. R., & Schmidt, H. G. (2019). A short intellectual history of problem-based learning. In M. Moallem, W. Hung, & N. Dabbagh (Eds.), *The Wiley Handbook of Problem-Based Learning* (pp. 3–24). NJ: John Wiley & Sons, Inc. <https://doi.org/10.1002/9781119173243.ch1>
- Shtelmakh, S. (1981). O nekotoryih sposobah aktivizatsii myislitelnoy deyatelnosti studentov na lektsii [On some ways to activate the mental activity of students in lectures]. *Problemy Vysshej Shkoly – Problems of Higher Education*, (43), 55–58 [in Russian].
- Stashys, V. (1986). O lektsiyah problemnogo haraktera po pravovym uchebnym distsiplinam [On problem-solving lectures in legal scientific disciplines]. *Problemy Vysshej Shkoly – Problems of Higher Education*, (58), 3–7 [in Russian].
- Stewart, W. A. C. (1972). *Progressives and radicals in English education*. London: Macmillan.

- Stewart, W. F. (1950). *Methods of good teaching*. Columbus, OH: The Ohio State University.
- Sukhomlynskyi, V.A. (1981). *Sto sovetov uchitelyu [One hundred tips for the teacher]*. Izhevsk: Udmurtia [in Russian].
- Trotsko, H.V. (ed.). (2008). *History of Pedagogy*. Kharkiv: H. S. Skovoroda Kharkiv National Pedagogical University [in Ukrainian].
- Urbanskyi, R. (1986). Ispolzovanie grafoproektora pri problemnom obuchenii na lektsii po teoreticheskoy mehanike [Using a graph projector in problem-solving learning in lectures on Theoretical Mechanics]. *Problemy Vysshej Shkoly – Problems of Higher Education*, (59), 44–46 [in Russian].
- Van Gundy, A. B. (1987). *Creative problem solving: A guide for trainers and management*. Westport: Greenwood Press.
- Viktorov, V. (ed.). (1964). *Z dosvidu roboty pedahohichnykh vuziv Ukrainskoi RSR [From the experience of Pedagogical Universities of the Ukrainian SSR]*. Kyiv: Soviet School [in Ukrainian].
- Xiong, Yi. (2021). The development of the project-based-learning teaching method. *Advances in Social Science, Education and Humanities Research*, 571, 886–890. <https://doi.org/10.2991/assehr.k.210806.168>
- Yushchenko, V. (1981). Povyishenie aktivnosti studentov na prakticheskikh zanyatiyah po soprotivleniyu materialov [Increasing student activity in practical classes on Material Resistance]. *Problemy Vysshej Shkoly – Problems of Higher Education*, (43), 79–82 [in Russian].
- Zakaria, M., Maat, S., & Khalid, F. (2019) A systematic review of problem based learning in education. *Creative Education*, 10(12), 2671–2688. <https://doi.org/10.4236/ce.2019.1012194>

Людмила Голубнича

Національний юридичний університет імені Ярослава Мудрого, Україна

Олена Кузнецова

Національний юридичний університет імені Ярослава Мудрого, Україна

Діна Демченко

Національний юридичний університет імені Ярослава Мудрого, Україна

Історія еволюції проблемного методу викладання та навчання

Анотація. У статті розглядається розвиток проблемного методу в історії педагогіки як у теорії, так і на практиці. Метою рукопису є охарактеризувати історію розвитку ідей проблемного викладання та навчання, а також з'ясувати та проаналізувати їх впровадження й використання в практиці викладання у закладах вищої освіти у другій половині ХХ століття. При проведенні дослідження використано методи: 1) теоретичного рівня (аналіз, синтез, узагальнення) для уточнення визначення поняття, виділення змін в основних ідеях проблемного методу протягом історичного суспільного

розвитку, висвітлення застосування методу проблемного навчання в університетах у другій половині минулого століття; 2) методи історичного дослідження (історіографічний, хронологічний, логіко-історичний, історико-типологічний) для характеристики розвитку ідей проблемного навчання в історичному аспекті, визначення їх сутнісних проявів. Результати дослідження виявили, що проблемне навчання сприймається як процес розв'язання студентами пізнавальних і практичних задач, що стимулює їх творчу та розумову діяльність, сприяє активній участі у навчанні. Проблемний метод навчання, що виник в Стародавній Греції, був розроблений на основі наукових розвідок і педагогічної практики відомих історичних діячів і прогресивних педагогів і пройшов довгий шлях у своєму розвитку. Новизна роботи полягає в узагальненні історичної еволюції ідей проблемного викладання та навчання в освіті, запропонованій періодизації їх розвитку на основі ключових положень методу, що охоплюють структуру мисленнєвої діяльності, важливість проблемних ситуацій у процесах мислення і навчання, вплив вирішення навчальних проблем на інтелектуальний розвиток, у висвітленні досвіду впровадження проблемного методу у вищій освіті другої половини XX ст. Великий потенціал проблемного методу широко використовується у викладацькій та навчальній практиці вищої освіти. Ідеї проблемного викладання та навчання та накопичений педагогічно цінний досвід їх реалізації у вищій освіті створюють цінну теоретичну базу та засоби навчання для формування інтелектуальної та професійної компетентності майбутніх спеціалістів, що забезпечує та підвищує якість вищої освіти.

Ключові слова: історія педагогіки; вирішення проблем; навчальний метод; вища освіта; студенти

Received 29.02.2024

Received in revised form 26.04.2024

Accepted 15.05.2024