THE EXPLORATION OF PEDAGOGICAL APPROACHES AND METHODS THAT ARE DESIGNED TO STIMULATE THE CREATIVE THINKING OF STUDENTS

A EXPLORAÇÃO DE ABORDAGENS E MÉTODOS PEDAGÓGICOS PROJETADOS PARA ESTIMULAR O PENSAMENTO CRIATIVO DOS ALUNOS

Iryna Revenko
ORCID 0000-0002-7848-1524
H. S. Skovoroda Kharkiv National Pedagogical University
Kharkiv, Ukraine
revenko.irisha@gmail.com

Kateryna Hlianenko
ORCID 0000-0002-3008-9291
Separate structural unit "Dnipro Vocational College of Engineering and Pedagogy of the Ukrainian State University of Science and Technology"
Kamianske, Ukraine
kaglianenko@gmail.com

Myroslava Sosnova
ORCID 0000-0003-0024-3814
Separate structural unit "Dnipro Vocational College of Engineering and Pedagogy of the Ukrainian State University of Science and Technology"
Kamianske, Ukraine
masosnova@gmail.com

Ruslana Vlasenko
ORCID 0000-0002-3743-4406
Zhytomyr Ivan Franko State University
Zhytomyr, Ukraine
vlasenko_r76@ukr.net

Larysa Kolodina
ORCID 0000-0003-1857-9404
National University of Life and Environmental Sciences of Ukraine
Kyiv, Ukraine
kolodina@ukr.net

Abstract. The focus on fostering creativity in thinking is not exclusive to students alone; rather, the cultivation of creativity, observation, dynamic thinking, cognitive agility, reflective consciousness, and related attributes is integral to the educational experience within general secondary education institutions. Against the backdrop of evolving educational paradigms in Ukraine, aligned with European models, scholars and educators have increasingly directed their attention towards the exploration of effective foreign practices aimed at stimulating the creative thinking of students. The principal objective of this investigation is to scrutinize pedagogical approaches and methodologies specifically designed to nurture the creative thinking abilities of students. Additionally, the paper delves into various scholarly perspectives regarding the phenomenon of "creative thinking," exploring its etymological origins, operational dynamics, and significance for individuals both within the educational setting and throughout adulthood. Through a meticulous examination of scientific literature, pedagogical practices, and the framework of the New Ukrainian School concept, it is discerned that the capacity for creative thinking constitutes a fundamental "soft skill." The synthesis of insights from analyzed scientific sources, pedagogical experiences, and the principles of the New Ukrainian School concept collectively underscores the pivotal role of creative thinking in fostering a comprehensive and adaptive skill set for individuals in diverse aspects of their lives. The study's findings indicate that the cultivation of creative thinking in students is most effectively achieved through active engagement methods, which include collaborative approaches, situational modeling, problem-based learning, the project method, the formulation of key questions, associative thinking, resolution of research problems, and the utilization of the sevenfold search method (analogous to the game "What? Where? When?"). The examination of scientific literature and a survey conducted among educators concerning methodologies to stimulate creative thinking reveal a heightened preparedness among teachers to explore optimal avenues for nurturing creativity, energy, self-esteem, activity, academic performance, and other attributes inherent in individuals with a creative mindset.

Keywords: creative thinking and creative work, creativity and applicants for education, pedagogical methods, pedagogical approaches, geography.

Resumo. O foco na promoção da criatividade no pensamento não é exclusivo dos alunos; em vez disso, o cultivo da criatividade, da observação, do pensamento dinâmico, da agilidade cognitiva, da consciência reflexiva e de

atributos relacionados é parte integrante da experiência educacional nas instituições de ensino secundário geral. No contexto da evolução dos paradigmas educacionais na Ucrânia, alinhados com os modelos europeus, académicos e educadores têm direcionado cada vez mais a sua atenção para a exploração de práticas estrangeiras eficazes destinadas a estimular o pensamento criativo dos alunos. O principal objetivo desta investigação é examinar abordagens e metodologias pedagógicas especificamente projetadas para nutrir as habilidades de pensamento criativo dos alunos. Além disso, o artigo investiga várias perspectivas acadêmicas sobre o fenômeno do "pensamento criativo", explorando suas origens etimológicas, dinâmica operacional e significado para os indivíduos, tanto no ambiente educacional quanto ao longo da vida adulta. Através de um exame meticuloso da literatura científica, das práticas pedagógicas e da estrutura do conceito da Nova Escola Ucraniana, percebe-se que a capacidade de pensamento criativo constitui uma "competência social" fundamental. A síntese de insights de fontes científicas analisadas, experiências pedagógicas e os princípios do conceito da Nova Escola Ucraniana sublinham colectivamente o papel fundamental do pensamento criativo na promoção de um conjunto de competências abrangentes e adaptativas para os indivíduos em diversos aspectos das suas vidas. As conclusões do estudo indicam que o cultivo do pensamento criativo nos alunos é mais eficazmente alcançado através de métodos de envolvimento ativo, que incluem abordagens colaborativas, modelagem situacional, aprendizagem baseada em problemas, método de projeto, formulação de questões-chave, pensamento associativo, resolução de pesquisas problemas e a utilização do método de busca sétupla (análogo ao jogo "O quê? Onde? Quando?"). O exame da literatura científica e uma pesquisa realizada entre educadores sobre metodologias para estimular o pensamento criativo revelam uma maior preparação entre os professores para explorar caminhos ideais para nutrir a criatividade, a energia, a auto-estima, a atividade, o desempenho acadêmico e outros atributos inerentes aos indivíduos com uma mentalidade criativa.

Palavras-chave: pensamento criativo e trabalho criativo, criatividade e candidatos à educação, métodos pedagógicos, abordagens pedagógicas, geografia.

1. INTRODUCTION

The imperative for individuals who can approach tasks uniquely and navigate diverse life and professional scenarios remains enduring and pertinent in contemporary times. This is rooted in the universal aspiration to effect qualitative changes and accomplishments within one's professional sphere, actualize essential ideas and plans, contribute to society and one's family, achieve personal fulfillment, and garner interest and recognition from relatives, friends, and colleagues. Creative potential is particularly esteemed by employers, leading to its distinct emphasis in the New Ukrainian School (NUS) concept of 2017, which identifies creativity, critical thinking, and systemic thinking as pivotal cross-cutting skills. The concept posits that success and recognition are attainable only by individuals capable of generating unique ideas and employing innovative thinking, enabling them to effectively apply their knowledge and remain in demand throughout various life stages. The cultivation of creativity necessitates several prerequisites conducive to the comprehensive development of requisite skills. These include a positive educational environment, a comfortable peer group dynamic, a proclivity towards expressing creativity, and the implementation of suitable forms and methods of collaboration with students.

The proponent of the EdCamp Ukraine community, Elkin O. (2019), underscores that with the inception of the New Ukrainian School, there has been a paradigm shift towards acknowledging the individual and their "soft" skills, encompassing creativity, originality, talent, and conflict resolution abilities. Teachers have been granted autonomy to select methodologies for achieving this objective and for cultivating a creative personality through teaching and nurturing methods. Consequently, there is an escalating demand for educators who are proactive in implementing transformative changes and consistently seek innovative approaches to stimulate creativity in students.

It is imperative to acknowledge that only an individual possessing similar traits can effectively educate someone with a creative thinking disposition. In this context, a teacher characterized by flexibility, openness to change, constant intellectual exploration, and a commitment to self-improvement is deemed most effective. Consequently, the quest for

methods to nurture students' creative potential stands as an enduring and universal scientific concern. This perennial issue persists due to continual transformations in the world, the rapid trajectory of technological progress, and the pervasive influence of digitalization.

Considering that creativity serves as a defining attribute contributing to enhanced academic success, strengthened team dynamics, and the activation of various qualitative physiological and psychological characteristics in individuals, the following research objective is emphasized: to analyze pedagogical approaches and methodologies specifically designed for the development of students' creative thinking.

Research Objectives:

- To examine diverse scientific approaches elucidating the functioning of the definition of "creative thinking" and assess the influence of creative orientation on individual development.
- To scrutinize various pedagogical methods and alternative modes of instruction that foster the cultivation of creative thinking in students, with a detailed analysis of their roles and effectiveness.
- To undertake and analyze a survey among teachers and lecturers, investigating the processes involved in shaping creative thinking in pupils and students, along with the various forms of instructional interventions utilized in this context.

2. LITERATURE REVIEWS

Undoubtedly, the cognitive process inherently possesses a creative dimension, as the direction of thought stimulates specific actions, and work, and fosters the exploration of optimal solutions for undertaking tasks. Scholars delving into the definition of "creative thinking" underscore its association with a fundamentally novel perspective in problem-solving, leading to innovations, inventions, and scientific breakthroughs (Senchyshyn V., 2017). Another viewpoint posits creative thinking as the process of addressing an engaging, logical, and creative problem, where awareness of an inherent contradiction initiates the resolution (Tretyak T., 2019). It is further characterized as the quest for novel, previously unknown aspects, be they material or spiritual (Vasylkivskyi V., 2021), or as transcending established boundaries and norms, eschewing conventional templates in favor of seeking original, atypical solutions, actions, and methods (Mishchikha L., 2018). Additionally, creative thinking is conceptualized as the synthesis of intellectual skills, cognitive activities, and various thinking operations (Matvienko O., Olefirenko T., 2022).

Chen A., Dong L., Liu W., Li X., Sao T., and Zhang J. (2015) posit that creative thinking serves as the foundational element of the entire creative process. According to their perspective, individuals possessing such thinking capabilities demonstrate the potential for novel achievements, accomplishments, and innovative breakthroughs across various domains, including science, culture, art, and politics. Howard M. (2021) contends that creativity in thought and vision endows individuals with a distinctive character, and while this trait can be cultivated, the process is inherently challenging. On the other hand, Boyles M. (2022) regards creative thinking as an integral facet of the work process, contributing to the generation of non-standard solutions and, at times, impulsive actions, ultimately leading to effective achievements.

Consequently, it can be delineated that creative thinking constitutes a cognitive process rendering an individual consistently active and engaged in any task or study of personal interest. It involves the capacity to reconsider simple or even seemingly incomprehensible concepts through a non-conventional lens and from a fresh perspective. Furthermore, creative thinking encompasses a systematic exploration and acquisition of new knowledge, as well as a commitment to self-development and improvement. It manifests in the unconventional

resolution of ordinary problems and a proclivity for seeking novelty, discoveries, and the realization of innovative, perhaps brilliant ideas.

Table 1. Strengths of a person with a creative mindset.

Advantages of a creative mindset	
Applicant for education	**Adult individual**
Engagement Involvement in the educational process	The ability to engage in lifelong learning Energy
High self-esteem	High performance
Communication skills	Communication skills
The ability to quickly "switch"	Ability to quickly "switch", mobility, dynamism, and activity
Academic performance	Interest from employers
Friendliness	Riskiness
Leadership	Leadership
Focus on future professional achievements	Positive emotional state

Source: compiled by the author.

Perceiving ordinary things in a non-standard manner undoubtedly renders an individual intriguing throughout their lifetime. It is the creative individuals who attain fame, brilliance, and international acclaim through prestigious prizes and awards. In the discussion that follows, attention is directed towards creative qualities, skills, and traits that hold significance for an individual not only during their educational journey at secondary or higher education institutions but also in their professional life. Consequently, educators are urged to commence the stimulation of creative thinking processes in students at an earlier stage to yield more effective outcomes.

Kasianchuk M. and Tochkova S. (2022) identify the following pedagogical approaches as primary for stimulating the creative thinking of students:

1. Establishing creative search situations between the teacher and the student group.
2. Exercising pedagogical control over the process of creative development of students.
3. Facilitating the acquisition of practical skills and abilities.
4. Implementing problem-based learning, including the presentation of information with contradictions.
5. Incorporating non-standard tasks into the educational process, such as project activities, utilization of information and communication technologies, and tasks allowing for multiple solution pathways.

Tarasova O. and Ushatkina S. (2022) underscore the intimate connection between creative thinking and professional capabilities. The researchers advocate for the implementation of the following forms of learning organization to foster the creative thinking of students and other learners: educational and creative tasks, training sessions, and problem-based learning with an emphasis on activating creative independence.

Korinna L. (2014) affirms the substantial significance of creating problematic situations as a method conducive to fostering the development of creative thinking in students. Engaging in problem-solving activities prompts mental stimulation, facilitates comprehension, and mutual assistance, and imparts an understanding that an immediate resolution to a given problem may not always be feasible. To achieve the desired goal, students must engage in processes such as studying, systematizing, analyzing, reasoning, articulating thoughts, and assuming responsibility for their intentions and decisions. The incorporation of situational modeling further involves pupils and students in preparatory activities for addressing crucial problems by assuming specific roles. According to Korinna L. (2014), adopting a strategic approach to

stimulate creative thinking is pivotal, wherein students learn to be autonomous in their choices, perspectives, judgments, professions, and in the constructive planning of their future.

Trabavina I., Kalina K., and Baydala V. (2020) establish parallels between creative and critical thinking. Etymologically, these phenomena exhibit considerable proximity, denoting a non-standard, multifaceted approach to addressing a problematic issue, an exceptional perspective on the situation, and indicative of the creative facet of an individual. Similarities in scientific thought are evident in the work of Krywa M. (2015), who explores the stimulation of critical and creative thinking through research activities. Zhydkova N. (2020) posits that creative thinking involves the formation of novel concepts, while critical thinking entails the verification of previously established truths. Furthermore, the teacher argues that pertinent and effective methods of fostering both creative and critical thinking include: the utilization of interdisciplinary connections, the Bloom's Cube method (suggest, invent), Six Thinking Hats (verification and evaluation of information, generation of new ideas, risk assessment), Brainstorming, the method of focal objects, morphological analysis, among others.

The exploration of reflection as a significant mechanism exerting a decisive influence on the development of creative thinking has been undertaken by Novikov B., Rudenko T., and Kostromina H. (2021). Their study emphasizes that reflection encompasses self-analysis, self-observation, and self-evaluation, qualities crucial for fostering creative thinking. Consequently, active problem-based learning is advocated as the foundational approach for nurturing such thinking.

In the investigation of methods to stimulate students' creativity, Guryanova O. (2013) presents an effective research contribution. The teacher highlights various cooperative methods, including inventive tasks, design, paradoxical solutions, mathematical analysis, role-playing and professional games, analog tasks, control questions, list of shortcomings, analogy, neology, heuristic combination, brainstorming, sevenfold search, and others.

Panel E. (2023), collaborating with the Expert Group of Forbes Council members, delineates 8 tips tailored for various groups of individuals to effectively cultivate or stimulate creative out-of-the-box thinking. These tips apply to businessmen, pupils, students, artists, teachers, and others:

1. Maintaining a diary (emphasizing the importance of doing so manually), as the process of drawing, writing, and coloring activates an individual's creativity.
2. Pursuing new experiences. Constantly engaging in novel activities or trying things one has never done before, such as attending a club, embarking on an unplanned trip to an unexpected country, exploring genres of movies not previously of interest, and delving into new literature, among other endeavors.
3. Reading scientific literature. The emergence of creativity is often associated with the amalgamation of incongruent elements, and therefore, studying scientific works can lead to the development of intriguing perspectives.
4. Engaging in "Brainstorming." It is essential to consistently participate actively in such work methodologies, demonstrating a willingness to tackle intricate problems, address issues that others may shy away from, and explore solutions in seemingly nonexistent avenues.
5. Establishing communication with creative individuals and inspirers. Regular interaction with creative individuals serves to stimulate imaginative thinking and fosters the emergence of a creative mindset.
6. Continuously acquiring new knowledge. Creative thinking evolves when individuals actively seek new knowledge, and experiences, and engage in communication with unfamiliar individuals.

7. Pose supplementary questions. In instances of ambiguity, it is imperative to promptly delve deeper into the matter and possess the capability to pose additional questions to those individuals who possess expertise in the subject.
8. Explore new perspectives. Expanding one's cognitive boundaries may even result in a change of profession. A contemporary individual should perpetually seek novel perspectives and horizons, engage in lifelong learning, and actively participate in self-improvement across diverse domains.

Li Y., Kim M., and Palkar J. (2022) assert the pivotal importance of fostering creativity in students in the present era. They contend that the contemporary, dynamic world can only be comprehended and navigated through the lens of creativity. The researchers posit that digital technologies play a supporting role in cultivating the creativity of students, encompassing web technologies, video games, simulations, software, multimedia learning materials, visual thinking tools, and more. It is acknowledged that modern technologies not only facilitate the processes of work or study but also stimulate creativity in actions and thinking by providing access to an extensive array of processes, objects, and information for exploration.

Larraz-Rábanos N. (2021) underscores that the primary driver of creativity is motivation. Consciously and systematically developing an individual's personality, along with their creative skills and abilities, can likely transform creative potential into a habitual style of creative behavior. The researcher proposes several methods for cultivating creativity in students, including "Brainstorming," "List of attributes," "Checklist," "Synectics," "Product invention," and "Six Thinking Hats." It is recommended to foster creative thinking at various stages of the educational process.

Spector J. M. (2016) contends that pupils and students should cultivate a creative perception of the world through active participation in problem situations, situational modeling, and business games. Correspondingly, Bloom L. A. and Doss K. (2021) share a similar perspective, asserting that critical and creative thinking can be effectively nurtured through the use of modern technologies and multimedia teaching tools. Scientists Saeed B. A., and Ramdane T. (2022) have developed a distinctive model of creative thinking grounded in contemporary innovative technologies. This model integrates quantum learning principles with traditional pedagogical approaches to collaboration with students.

As asserted by Robinson K. (2006) and Townsend C. (2021), who are prominent figures in the field, the principal architects of the future are presently the students themselves. It is posited that only students possess the capacity to generate truly innovative ideas unburdened by the apprehension of criticism. Consequently, the primary responsibility of every teacher is to establish an environment wherein students feel secure to foster and express creativity, thinking beyond conventional norms and generating ideas that are extraordinary, innovative, and ingenious.

3. RESEARCH METHODS

The research employed the following methods:

- Theoretical (analysis, synthesis, generalization): This involved the examination of scientific and popular science literature, the consideration of teachers' experiences, and the review of information gathered from various internet sources.
- Empirical (survey, comparison, description): This method was utilized during the analysis of the teachers' survey, encompassing the comparison and description of gathered data.The comprehensive search for relevant studies was conducted in the DOAJ and EBSCOhost databases over the last decade. In order to remove a large number of irrelevant publications in the manual search, the following terms were selected: “Inclusive education/pedagogy”, or “Inclusive education/strategies”, or

"Inclusive education/methods", or "Inclusive education/problems", or "Inclusive education/modernity". The same search terms were used to investigate the database (EBSCOhost). The current literature review includes scientific works focusing on the implementation of the latest strategies and methods of inclusive education in modern pedagogy.

4. RESEARCH RESULTS

The examination of methods employed by teachers to stimulate the creative perception of the environment among pupils/students reveals a noteworthy similarity in experiences across Ukraine, European countries, and the Americas. To delve deeper into specific aspects within this domain, a survey was conducted among teachers and educators in general secondary and higher education institutions. The survey enlisted 45 respondents from various educational institutions, including the Medzhybizh Lyceum of the Medzhybizh Village Council in the Khmelnytskyi District of the Khmelnytskyi Region, the Agronomic Lyceum of the Agronomic Village Council in the Vinnytsia Region, the Khmelnytskyi Humanitarian and Pedagogical Academy, and the Mykhailo Kotsiubynskyi Vinnytsia State Pedagogical University.

All 45 teachers responded affirmatively when queried about their commitment to fostering creativity in students. Concerning the utilization of methods to stimulate creative thinking, the preponderance of respondents (35 individuals) identified methods such as cooperative activities in groups, teamwork, brainstorming, situational modeling, and the incorporation of multimedia. Furthermore, 40 of the surveyed teachers contend that group-oriented forms and cooperative techniques with students optimally activate and incentivize young individuals to cultivate creative thinking.

It is noteworthy that some respondents identify drawbacks in the creative type of thinking, including impulsiveness, emotionality, occasional chaotic expression or formulation of personal viewpoints, disorganization, and unjustified risk-taking. It is essential to recognize that these traits are not universally exhibited by all individuals and are not pervasive.

In interviews with teachers/lecturers (42 participants), it is underscored that the creative dimension of thinking holds paramount significance for an individual's future. This proficiency plays a pivotal role in shaping one's approach to the environment, responses to situations and life events, character development, and communication habits.

Teachers identify brainstorming as the most effective method for stimulating creative thinking. Research on the application and efficacy of this teaching method is extensive in both Ukrainian and foreign scientific pedagogical discourse. As educators assert, the importance of brainstorming is not overstated.

Undoubtedly, as indicated by the feedback from the respondents (43 individuals), creative thinking holds significant importance in a student's education. Those with creative inclinations tend to establish more amicable relations with peers and teachers, often assume leadership roles, contribute positively to the dynamics of teams or groups, and receive support from their peers. Additionally, creative students are frequently associated with higher academic performance. According to the respondents, all students distinguished by specific abilities or talents exhibit creative thinking.

5. DISCUSSIONS

As verified by the participants in the survey, encompassing teachers and professors from both general secondary and higher education institutions, creative thinking is deemed significant for learning, communication, extracurricular activities, and the future development of the individual. Nevertheless, amid various positive attributes associated with creative thinking, some are perceived with a certain degree of negativity, including emotionality,

impulsiveness, an inclination towards unjustified risks, recklessness, disorganization, and self-criticism.

Excessive emotionality represents a predominantly negative manifestation of personality traits, as individuals influenced by uncontrolled emotions often exhibit impulsive actions, take unjustified risks, and engage in rash behaviors, which they may subsequently regret. It is essential to note that such traits are not universally inherent in individuals possessing creative thinking; however, in isolated cases, these shortcomings may be observed.

This issue remains relatively unexplored from a scientific perspective, and its interpretation is somewhat controversial. Consequently, further research, experiments, and developments are warranted to provide a more comprehensive understanding of the relationship between emotionality and creative thinking.

6. CONCLUSION

Creative thinking is a trait that characterizes an individual across various stages of life, including adulthood. Pupils and students endowed with creative thinking exhibit several advantages over their peers, such as increased activity, sociability, energy, diplomacy, active participation in the extracurricular aspects of the educational institution, a penchant for seeking novelty, and leadership qualities, among others. Nevertheless, alongside these positive attributes, negative traits may also manifest, predominantly in the form of impulsiveness, emotionality, and a tendency for risk-taking. Despite the potential drawbacks, an individual's capacity for creative expression remains a crucial aspect of their self-determination and realization in life.

A wealth of scientific literature exists on the methodology of cultivating creative thinking, supplemented by empirical studies conducted by practicing teachers that substantiate its effectiveness. Notable methods encompassed in these studies include "Brainstorming," "Reverse Brainstorming," "Unfinished Stories," "Checklist," "Six Hats Method," training sessions, multimedia integration, group collaboration, situational modeling, problem-solving scenarios, engagement with video games, simulations, and web technologies, among others. The holistic implementation of these methods not only contributes to the comprehensive development of the student's personality but also renders the classroom experience engaging, instills essential life skills and abilities, and catalyzes the nurturing of talents and capabilities.

ACKNOWLEDGMENT

We express our sincere gratitude to all colleagues who provided their expertise and valuable comments during our research. Your support and critical perspective have been invaluable in improving our manuscript. We would like to express special thanks to those who devoted their time to help prepare the manuscript for publication, ensuring its quality and readiness for evaluation by a wide audience. Your input is extremely valuable, and we appreciate your hard work and dedication.

REFERENCES

Bloom, L. A., & Doss, K. (2021). *Using Technology to Foster Creative and Critical Thinking in the Classroom*. Research Anthology on Developing Critical Thinking Skills in Students, 553–567. https://doi.org/10.4018/978-1-7998-3022-1.ch028

Boyles, M. (2022). *How to Be a More Creative Problem-Solver at Work: 8 Tips*. Retrieved from Business Insights Blog website: https://online.hbs.edu/blog/post/how-to-be-a-more-creative-problem-solver

Chen, A., Dong, L., Liu, W., Li, X., Sao, T., & Zhang, J. (2015). *Study on the Mechanism of Improving Creative Thinking Capability Based on Extenics*. Procedia Computer Science, 55, 119–125. Retrieved from https://doi.org/10.1016/j.procs.2015.07.017

Guryanova, O. (2013). *Activation of students' creative thinking with the help of new pedagogical technologies.* Scientific Notes Kirovohrad State Pedagogical University Named after Volodymyr Vinnichenko. Series: Pedagogical Sciences, 120, 117–127.

Howard, M. (2021). *7 Tips for Developing Creativity*. Retrieved from GCU website: https://www.gcu.edu/blog/performing-arts-digital-arts/7-tips-developing-creativity

Kasianchuk, M., & Tochkova, S. (2022). *Pedagogical conditions for the formation of creative thinking of adolescents in the process of studying Ukrainian popular music*. Pedagogy of the Formation of a Creative Person in Higher and Secondary Schools, № 80(80), 95–99. Retrieved from https://doi.org/10.32840/1992-5786.2022.80.1.17

Korinna, L. (2014). *Formation of a creative personality in the system works of the lyceum with gifted youth.* Innovative Approaches to the Education of Student Youth in Higher Educational Institutions: Materials of the International. Science and Practice Conferences, 249–263.

Krywa, M. (2015). *Methodological approaches to the formation of the pupil's creative personality in the research activity.* Prace Naukowe Akademii Im. Jana Długosza W Częstochowie, 17, 347–356. https://doi.org/10.16926/rpu.2015.17.25

Larraz-Rábanos, N. (2021). *Development of Creative Thinking Skills in the Teaching-Learning Process.* Teacher Education − New Perspectives. Retrieved from https://doi.org/10.5772/intechopen.97780

Li, Y., Kim, M., & Palkar, J. (2022). *Using Emerging Technologies to Promote Creativity in Education: Systematic Review*. International Journal of Educational Research Open, 3(100177), 100177. Retrieved from https://doi.org/10.1016/j.ijedro.2022.100177

Matvienko, O., Olefirenko, T. (2022). *Theoretical foundations of creative personality development.* Educational and Scientific Space, (2 (1)), 33–44. Retrieved from https://doi.org/10.31392/onp.2786-6890.2(1).2022.03

Mishchikha, L. (2018). *Creative thinking of the individual: a psychological discourse.* Scientific Bulletin of Kherson State University. Series "Psychological Sciences," 1(3), 79–83. Retrieved from https://pj.journal.kspu.edu/index.php/pj/article/view/328/306

Novikov, B., Rudenko, T., & Kostromina, H. (2021). *Creative thinking of students as a strategic purpose of university education.* Educational Discourse: Collection of Scientific Papers, 32 (4), 26–35. Retrieved from https://doi.org/10.33930/ed.2019.5007.32(4)-3

Panel, E. (2023). *Council Post: In A Rut?* Eight Actions That Will Help Improve Your Creative Thinking Skills. Retrieved January 24, 2024, from Forbes website: https://www.forbes.com/sites/theyec/2023/02/24/in-a-rut-eight-actions-that-will-help-improve-your-creative-thinking-skills/?sh=649dc3ed6645

Reform formula | New Ukrainian school. (2017). Retrieved January 20, 2024, from NUS.ORG.UA website: https://nus.org.ua/about/formula/

Robinson, K. (2006). *Do schools kill creativity?* Retrieved from TED website: https://www.ted.com/talks/sir_ken_robinson_do_schools_kill_creativity

Saeed, B. A., & Ramdane, T. (2022). *The effect of implementation of a creative thinking model on the development of creative thinking skills in high school students: A systematic review.* Review of Education, 10(3). https://doi.org/10.1002/rev3.3379

Senchyshyn, V. (2017). *Psychological and pedagogical principles in the development of creative thinking.* Student Scientific Bulletin. Faculty of Pedagogy and Psychology, №42, 79–82.

Spector, J. M. (2016). *Thinking About Educational Technology and Creativity.* Educational Technology, 56(6), 5–8. Retrieved from https://www.jstor.org/stable/44430500

Tarasova, O., & Ushatkina, S. (2022). *Development of the Creative Component Professional Thinking Future Teacher of Professional Training.* Viae Educationis. Studies of Education and Didactics, Vol.1(# 2), 109–119.

Townsend, C. (2021). *The Role of Creativity and Technology in Education.* Retrieved from Wall of Fame website: https://vitalsignswalloffame.com/the-role-of-creativity-and-technology-in-education/

Tretyak, T. (2019). *Creative thinking in the process of solving problems.* Actual Problems of Psychology. Psychology of Creativity, T.12 (№ 25), 272–281.

Vasylkivskyi, B. (2024). *How to develop creative thinking?* Retrieved January 22, from HUB 4.0 website: https://4hub.com.ua/ua/community/jak-rozvinuti-tvorche-mislennja/

Zhydkova, N. & (2020). *Chernihiv region Menska Gimnazium. The development of creativity of students by using critical thinking in social science.* Ukrainian Educational Journal, № 4(4), 180–191. Retrieved from https://doi.org/10.32405/2411-1317-2020-4-180-191

Kiporenko, I. (2019). *The movement of responsible teachers.* Retrieved January 20, 2024, from The Ukrainians! website: https://theukrainians.org/ruh-vchytelstva/

Trubavina, I., Kalina, K., & Baydala, B. (2020). *The program for improving the qualifications of employees on the topic "Formations of critical and creative thinking in children".* Educational Challenges, 0(63), 179–187. Retrieved from https://doi.org/10.34142/2312-2471.2020.63.19

APPENDIX 1

Survey for Educators: Development of Creative Thinking in Students

1. In your professional opinion, do you consider it crucial to foster creative thinking in pupils/students?
2. What methodologies do you employ to stimulate creative thinking and foster creative activities within the educational process?
3. To what extent do you implement strategies to encourage pupils/students in the stimulation of their creative thinking?
4. Do you endorse the use of group work formats in shaping the creative thinking of students?
5. In your view, what are the advantages and disadvantages associated with creative thinking in pupils/students?
6. How does the cultivation of creative thinking impact the future of an adult?
7. What led you to recognize that the development of creative thinking in pupils/students is paramount for their future, professional self-determination, and personal life?
8. According to your perspective, which method is the most effective in stimulating the development of the creative aspect in the thinking of pupils/students?
9. What role does creative thinking play in enhancing the learning process?
10. Do you believe that a pupil's/student's hobbies, abilities, creative inclinations, and talents influence the development of their creative thinking?

Source: developed by the author