

Pedagogical Opportunities Of Using Gamification Technologies In The Formation And Development Of Professional Competence Of Future Preschool Educators

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ABSTRACT

This article examines the pedagogical opportunities of using gamification technologies in the formation and development of professional competence among future preschool educators. It is theoretically substantiated that integrating game-design elements (points, rankings, staged progression, rewards, “missions,” and “challenges”) into the learning process strengthens learners’ intrinsic motivation, increases active engagement, and supports the development of practice-oriented competencies. The study highlights the role of gamification in fostering key components of a preschool educator’s professional competence, including methodological, communicative, reflective, innovative, and socio-psychological dimensions. Particular attention is given to modeling professional situations, organizing rapid feedback, and integrating reflective mechanisms as factors that enhance learning effectiveness. The findings may contribute to improving competency-based training within the preschool teacher education system.

Keywords: Gamification, professional competence, future preschool educator, preschool education, motivation, reflection, pedagogical technology, competency-based approach.

INTRODUCTION

In recent years, enhancing students’ active engagement, strengthening their intrinsic learning motivation, and preparing them for professional activity in a practice-oriented manner have gained significant scientific and practical relevance. In this regard, the use of approaches that encourage learners to consciously master knowledge, develop independent thinking, and form competencies that support professional growth is regarded as one of the key factors determining the effectiveness of education.

Within the process of training personnel for the preschool education system, developing the professional competence of future educators (preschool teachers) is of particular importance. Specifically, an educator’s methodological literacy, pedagogical communication culture, ability to conduct reflective analysis, and adaptability to practical professional tasks are recognized as essential indicators of

educational quality and educational (upbringing) outcomes. Therefore, the need to improve the professional preparation of future educators in line with contemporary requirements is steadily increasing.

Among modern pedagogical technologies, the use of gamification (integrating game elements into the learning process) can serve as an effective tool for developing the professional competence of future educators. This approach does not imply transforming instruction into a simple game; rather, it involves organizing learning on the basis of motivational mechanisms such as reinforcement, competition, step-by-step achievement tracking, and outcome monitoring. As a result, learners’ participation, interest, and motivation to pursue professional development tend to intensify.

LITERATURE REVIEW

In recent years, scholarly research aimed at modernizing education and improving the effectiveness of learning activities has increasingly highlighted gamification as a pedagogical innovation. In the conceptualization proposed by K. Deterding and colleagues, gamification is not understood as fully transferring games into education; instead, it is interpreted as the application of game-design mechanisms (e.g., incentives, points, rankings, staged progression, and visual monitoring of results) within non-game contexts to stimulate active participation. These perspectives constitute an important theoretical foundation for explaining the essence of gamification, particularly as a means of motivational support for learning activities. Similarly, within the framework offered by K. Werbach and D. Hunter, gamification is viewed as a strategic mechanism that strengthens goal-oriented activity among participants in the educational process. In their approach, reinforcement systems, gradual progression, and monitoring of outcomes are considered didactic factors that contribute to the stability and continuity of learning engagement.

The effectiveness of gamification in education is primarily associated with its influence on learning motivation. Within educational psychology, E. Deci and R. Ryan's self-determination theory substantiates that intrinsic motivation increases when basic needs such as autonomy, competence, and relatedness are satisfied. From this theoretical standpoint, gamification elements—such as providing choice, documenting achievements progressively, and fostering collaboration within a group—can enhance learners' internal involvement in the learning process. Moreover, designing tasks in a meaningful and engaging way through game mechanics supports learners' experience of success, thereby reinforcing persistence and commitment to learning goals.

The relationship between gamification and competency-based education has also been widely discussed in academic literature. According to J. Kapp, learning organized through game elements does not remain limited to memorization; rather, it activates processes such as practical application, independent decision-making based on experience, and evaluation of outcomes. This, in turn, contributes to the formation of the learner as an active agent of their own learning activity and strengthens reflective thinking and responsibility. From a methodological perspective, such an approach may be considered an effective pedagogical mechanism that enhances the professional readiness of future specialists. In

particular, learning organized through situational tasks, “professional missions,” and problem-based scenarios can support the development of adaptability to real professional contexts among future preschool educators.

Empirical studies addressing the outcomes of gamification in pedagogical practice also report positive trends. For instance, J. Hamari and colleagues note that in learning environments where gamification elements are implemented, learners' activity and satisfaction tend to increase, engagement is strengthened, and positive shifts occur in learning achievement indicators. These findings suggest that gamification is not only a motivational mechanism but also a didactic tool that helps maintain the stability of learning activity. At the same time, researchers emphasize that effective results depend directly on appropriate instructional design, alignment with goals and expected outcomes, and fairness and transparency in reinforcement systems.

The formation of professional competence among future preschool educators remains a priority topic in pedagogy and methodology, and various scholars have described the structural components of competence in different ways. In related research, there is a tendency to characterize an educator's professional competence through such components as methodological preparedness, communicative culture, reflective analysis, innovative thinking, and socio-psychological adaptability. These approaches indicate that educators' professional activity is grounded not only in methodological knowledge but also in the ability to communicate effectively in working with children, analyze educational situations, and organize pedagogical processes creatively. Consequently, the use of active methods, interactive approaches, and innovative technologies is considered scientifically justified in developing the professional competence of future educators.

In addition, within the sociocultural approach advanced by L. S. Vygotsky, learning is understood to occur more effectively through social collaboration, communication, and a supportive environment. This idea provides a theoretical explanation for the effectiveness of group-based tasks, role-play, and collaboration-centered “challenges” commonly used in gamified learning. A. Bandura's social learning theory also argues that individuals can acquire skills through observation, imitation, and cognitive modeling. This perspective further strengthens the theoretical rationale for modeling

professional situations, constructing pedagogical scenarios, and acquiring experience through practical tasks within gamified learning environments.

Overall, the analysis of existing scientific literature indicates that gamification technologies possess considerable pedagogical potential in strengthening intrinsic motivation, ensuring active participation, developing competencies through practice-oriented tasks, and advancing mechanisms of reflective analysis. In particular, designing gamification in the preparation of future preschool educators on the basis of a purposeful, competency-oriented approach is theoretically grounded as a means of developing professional competence components in an integrated manner.

RESULTS

Gamification is considered an innovative approach that reinforces learners' motivation by enriching the educational process with game-design mechanisms. Within this technology, elements such as earning points, staged progression (levels), reinforcement, ranking systems, sequential tasks, "missions," and "challenges" are integrated into learning activities. Consequently, the learning process becomes not only more engaging but also more outcome-oriented and structured as a system that encourages active participation.

Gamification enables the development of important skills among learners, including self-management, defining personal goals and designing strategies to achieve them, understanding the balance between cooperation and healthy competition, analyzing outcomes, and fostering a sense of professional responsibility. From a pedagogical perspective, this approach prioritizes activity-based learning over reproductive models of instruction; that is, the learner is not merely a recipient of ready-made knowledge but emerges as an active subject of the educational process.

The professional competence of a preschool educator represents an integrated system of knowledge, skills, and abilities required for effective performance of professional tasks, together with pedagogical values, practical experience, and personal-professional qualities. This competence is manifested through the educator's ability to organize pedagogical processes on a scientific basis, choose appropriate approaches when working with children, and develop adequate solutions to situations

arising in educational and upbringing activities.

The key components characterizing the professional competence of a future educator include:

Methodological competence – designing instructional activities, selecting didactic tools, and applying methods aligned with children's age and individual characteristics;

Communicative competence – establishing effective interaction with children, parents, and colleagues and developing pedagogical cooperation;

Reflective competence – analyzing one's own practice, identifying shortcomings, and planning professional growth;

Innovative competence – mastering modern pedagogical technologies, proposing novel solutions through creative thinking;

Socio-psychological competence – working in a team, managing conflict situations, and creating a supportive educational environment.

Accordingly, developing the competence of future educators should not be limited to delivering theoretical knowledge; it must be strengthened through professional situations, practice-oriented tasks, problem-solving activities, and active learning methods.

Pedagogical Opportunities of Gamification Technologies. Gamification generates a range of pedagogical opportunities in the preparation of future preschool educators. These opportunities contribute to increased learning activity, stronger practical readiness, and the comprehensive development of professional competence components.

1. **Enhancing Motivation.** Learning tasks organized through game mechanics increase learners' intrinsic interest and emotional involvement. The sequence "task completed – result observed – reward received" supports the continuity and stability of learning activity. This strengthens learners' willingness to work on themselves and fosters needs oriented toward professional growth.

2. **Supporting Active Participation and Independent Learning.** Gamification reduces the learner's passive observer role and forms them as an active performer, analyst, and creatively oriented subject. As a result,

qualities such as independent decision-making, responsibility, persistence in completing tasks, and accountability for outcomes become more developed.

3. **Modeling Professional Situations and Strengthening Practice Orientation.** Gamification enables the modeling of professional scenarios, thereby increasing readiness for real pedagogical contexts. In particular, tasks such as “problematic pedagogical situations,” “communication with parents,” “conflicts among children,” and “designing an instructional session” can be presented through game-based mechanisms, allowing future educators to gain experience in conditions close to professional practice.

4. **Organizing Reflective Analysis and Rapid Feedback.** Ranking tables, outcome monitoring, and feedback mechanisms allow learners to track their development dynamics. This activates reflective thinking and creates conditions for developing self-improvement strategies based on questions such as “Where did I make a mistake?” and “How can I improve?”

5. **Developing Teamwork and Communicative Culture.** Through group missions, team-based challenges, and role-based learning activities, learners develop skills in collaborative work, exchanging ideas, reaching agreement, and selecting appropriate pedagogical communication styles. Consequently, the future educator’s communicative competence and adaptability to teamwork are strengthened.

To achieve the intended outcomes in developing professional competence through gamification, several pedagogical conditions are crucial, including: clarity of goals and expected results; staged progression and increasing complexity; fairness and transparency of reinforcement systems; alignment of tasks with professional contexts; and integration of reflection and diagnostic assessment through self-assessment tools, learning diaries, and monitoring instruments.

In training future educators, using gamification-based module elements can enhance instructional effectiveness, for example: a “professional mission” as a weekly practical task (preparing a lesson plan, designing a didactic game); a “level system” (planning, design, trial, analysis); “portfolio badges” for each competence; a “reflection card” after each task (difficulty, achievement, recommendation); and a “team challenge” to create and present a scenario for an educational event.

CONCLUSION

In conclusion, gamification represents an innovative approach with substantial pedagogical potential for developing the professional competence of future preschool educators. It strengthens learners’ motivation, improves practice-oriented readiness based on professional situations, activates reflective analysis, and positively influences the formation of communicative competence. Moreover, effective integration of gamification into competency-based education requires clarifying goals and outcomes, ensuring a transparent and fair reinforcement system, designing tasks in accordance with professional contexts, and harmonizing reflection and monitoring mechanisms. This approach can serve as an important factor in modernizing the training system for preschool education personnel and elevating the professional preparation of future educators to a new level.

REFERENCES

1. Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining “gamification”. In *Proceedings of the 15th International Academic MindTrek Conference (MindTrek ’11)*. pp. 9–15.
2. Werbach, K., & Hunter, D. (2012). *For the Win: How Game Thinking Can Revolutionize Your Business*. Wharton Digital Press. 148 pages.
3. Deci, E. L., & Ryan, R. M. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*. New York: Plenum. xv, 371 p.
4. Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), pp. 68–78.
5. Kapp, K. M. (2012). *The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education*. Pfeiffer. 336 pages.
6. Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does Gamification Work?—A Literature Review of Empirical Studies on Gamification. In *Proceedings of the 47th Hawaii International Conference on System Sciences (HICSS)*. pp. 3025–3034.

7. Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Harvard University Press. 159 pages.
8. Bandura, A. (1977). *Social Learning Theory*. Prentice Hall. 247 pages.