Innovative Approaches To Developing A Culture Of Professional Reflection In Future Teachers: Theoretical Basis And Experimental Analysis

Rozmetova Farangis Azamatovna
A basic doctoral student at the Urgench State Pedagogical Institute.
farangizrozmetova4@gmail.com,Orchid: 0009-0009-0662-3018

Abstract. This study aims to develop the theoretical foundations of a methodology for developing a culture of professional reflection in future educators and to empirically verify its effectiveness.

The research was conducted at Urgench State University in 2022-2025. 103 students of the "Preschool Education" department participated in the experimental work (experimental group - 48, control group - 55). Theoretical analysis revealed four main components of the culture of professional reflection (motivational-valuative, cognitive-knowledge, operational-activity, reflexive-evaluation) and their interrelationships.

The developed theoretical model and methodology effectively develop the culture of professional reflection of future educators. The author's position is based on the synthesis of reflexive and innovative approaches, integration with practice, and systematic development.

Keywords: culture of professional reflection, future educators, innovative approaches, theoretical model, pedagogical diagnostics, experimental work

Login

In the modern education system, the culture of professional reflection of teachers is an important component of professional competence. In the 21st century, the educational paradigm is changing: there is a transition from the traditional model of knowledge transfer to the development of active learning and critical thinking of students. These changes also require new approaches from teachers - they must become not only educators, but also reflective practitioners.

Reflection allows educators to critically analyze their work, learn from mistakes, and ensure continuous professional growth. Schön (1983) developed the concept of the reflexive practitioner in his classic work, stating: "The professional practitioner not only applies technical knowledge, but also creates new knowledge through reflection in complex and uncertain situations" [1, p. 68]. This approach is fundamental to modern pedagogy.

However, insufficient attention is paid to the formation of a reflexive culture in the process of training future educators in pedagogical universities of Uzbekistan. Existing curricula are mainly focused on the transfer of theoretical knowledge, and the reflexive component remains minimal. This leads to difficulties for young educators in their professional activities and a slowdown in professional development.

The issue of reflective practice has been widely studied in international pedagogical science. Mannikko (2019) in her extensive doctoral dissertation fundamentally explores the issue of supporting teachers' professional development through reflective research. The author emphasizes: "Reflective research is a powerful tool for supporting teachers' professional development, allowing them to critically analyze their own practice and develop new insights" [2, p. 45].

Manniko's research was conducted in the Finnish education system, and he identifies three main stages of reflexive inquiry:

1. Problem identification and formulation of research questions - the teacher identifies problem areas in his/her practice through reflection
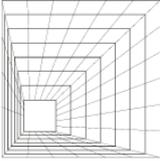
2. Data collection and reflexive analysis - data is collected from various sources and analyzed in depth

3. Developing and testing new solutions - based on reflection, new pedagogical solutions are created and put into practice

This approach was also adopted as the main methodological basis in our study.

Hahl and Mikulec (2018) longitudinally examine the development of professional identity in student teachers over the course of a year-long program. The authors present important empirical findings: "Reflection, when implemented in a systematic and structured manner, can be a valuable tool for developing professional knowledge and teacher identity" [6, p. 44]. Hahl and Mikulec's study identifies four stages of professional identity:

1. Initial identification - idealistic views and high expectations
2. Facing reality - challenges in real practice
3. Adaptation and integration - gaining experience and finding balance
4. Strong professional identity - a stable professional "I"

These stages are taken into account in our methodology, and special reflexive tasks have been developed for each stage.

In the context of Uzbekistan, Kadirova (2020) fundamentally studies the issue of improving the technology of preparing future educators for professional activity and comes to an important conclusion: "Preparation based on modern pedagogical technologies requires a systematic approach and interactive methods" [3, p. 67].

An analysis of the existing literature identified the following theoretical gap:

There is no clear definition of the concept of a culture of professional reflection. Various authors use such concepts as reflection, reflective thinking, reflective practice, but the concept of "culture of professional reflection" is not sufficiently developed. The structure and components of a culture of professional reflection are not clearly defined. Various aspects of reflection (cognitive, affective, metacognitive) have been studied separately, but their holistic system has not been created.

There is no specific methodology for future educators. Existing research focuses mainly on the reflective practice of active teachers, and the issue of forming a reflective culture at the stage of training future educators has not been sufficiently studied.

Empirical research in the Uzbek context is limited. International experience exists, but there is little research that takes into account the local cultural and educational context. To fill these gaps, our study proposes the following author's position.

Our author's position is formed on the following main aspects:
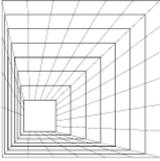
We view a culture of professional reflection as a system of four interrelated components:

a) Motivational-value component - interest in the profession, professional identification, the need for self-development, professional ethics and responsibility. This component forms the energetic basis of reflexive activity.

b) Cognitive-cognitive component - knowledge of the theory of reflection, pedagogical knowledge, metacognitive knowledge, contextual knowledge. This component forms the intellectual basis of reflective activity.

c) Operational-activity component - skills for analyzing pedagogical situations, using reflexive techniques, didactic skills, communicative skills. This component forms the practical basis of reflexive activity.

d) Reflective-evaluative component - the ability to self-analyze, objectivity of self-assessment, metacognitive strategies, self-regulation. This component constitutes the metacognitive basis of reflective activity.

These four components are interrelated and mutually supportive. Their holistic development ensures the formation of a culture of professional reflection.

Synthesis of reflexive and innovative approaches.

We emphasize the need to combine traditional reflexive approaches (Schon, Gibbs) and modern innovative technologies (digital tools, video reflection, electronic portfolio). This synthesis has the following advantages:

* Increases the depth and effectiveness of reflection.
* Leverages the technological skills of modern students.
* Visualizes and objectifies the reflexive process
* Provides ongoing monitoring and feedback.

We propose to form a reflexive culture not only in theoretical training, but also in real pedagogical activity during professional practice. The concept of reflection has a long history in philosophy. Thinkers such as Aristotle, Descartes, Locke, Kant considered reflection as a self-directed activity of consciousness. The concept of reflection in pedagogy began to develop actively in the second half of the 20th century.

Donald Schön (1983) develops the concept of the reflective practitioner in his classic work, The Reflective Practitioner. He distinguishes between two types of reflection:

1. Reflection-in-action is reflection that takes place during professional activity. The teacher analyzes the situation and makes quick decisions during the lesson.

2. Reflection-on-action is a reflection that takes place after the activity is completed. The teacher analyzes the lesson, evaluates successes and mistakes, and draws conclusions for the future.

Schon emphasizes: "The professional practitioner not only applies technical knowledge, but also creates new knowledge through reflection in complex and ambiguous situations" [1, p. 68]. This approach is of fundamental importance for modern pedagogy and was adopted as the main theoretical framework in our study.

Graham Gibbs (1988) in his work "Learning by Doing" develops six stages of the reflexive cycle:

1. Description - What happened? An objective description of the event
2. Feelings - what did you feel? Analysis of the emotional state
3. Evaluation - what went well/badly? Identifying positive and negative aspects
4. Analysis - why did it happen? Studying the causes
5. Conclusion - what else could have been done? Consider alternatives
6. Action plan - what will you do in the future? Planning new strategies

This cycle was used as the main reflexive tool in our methodology. Students analyzed each pedagogical experience according to the Gibbs cycle.

Based on the analysis of the existing literature, we define the culture of professional reflection as follows: The culture of professional reflection is the ability and need of a teacher to constantly and systematically analyze, evaluate and improve his professional activities, professional "I", pedagogical values and professional development. According to our author's position, the culture of professional reflection consists of four main components:

1. Motivational-value component. This component constitutes the energetic basis of reflexive activity and includes the following elements:

Professional motivation - interest in the profession of educator, satisfaction with professional activity, striving for professional growth. Ilyina (1975) distinguishes three types of professional motivation: motivation to gain knowledge, motivation to master the profession and motivation to get a diploma. In our approach, we will focus on the first two types. Professional identification - self-awareness as an educator, the formation of the concept of
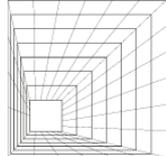
professional "I", a sense of belonging to the professional community. Schneider (2001) identifies four levels of professional identification: undefined, moratorium, predetermined and achieved identification. Our goal is to bring students to the level of achieved identification.

2. Cognitive-knowledge component. This component constitutes the intellectual basis of reflective activity:

Knowledge of the theory of reflection - the concept of reflection, types (personal, social, professional), functions, Schön and Gibbs models, reflexive techniques and methods. Pedagogical knowledge - psychology, pedagogy, didactics of preschool children, theory and methodology of upbringing, theory of play activity.

3. Operational-activity component. This component forms the practical basis of reflective activity: Skills for analyzing pedagogical situations - correct understanding of the situation, identifying the problem, analyzing the causes, finding solution options, choosing the best solution. Application of reflective techniques - Gibbs cycle, SWOT analysis, "5 whys" method, reflective diary, video reflection, portfolio creation.

4. Reflective-evaluative component. This component forms the metacognitive basis of reflective activity: The ability to self-analyze - objectively analyze one's own activities, identify strengths and weaknesses, understand one's own feelings, and understand motives. Objectivity of self-evaluation - correctly assess one's achievements, recognize shortcomings, realistically assess one's capabilities, avoid excessive criticism or excessive self-esteem.

Methods

The study was conducted at the Faculty of Pedagogy of Urgench State University in 2022-2025 based on a quasi-experimental design. The quasi-experimental design was chosen because creating random groups in pedagogical universities is practically difficult and ethically problematic. A total of 103 3rd-5th year students studying in the "Preschool Education" major participated in the experimental work. Experimental group (TG): 48 (46.6%). Control group (CG): 55 (53.4%)

The groups were randomly selected. Statistical analysis showed that the groups were statistically equal in terms of demographic characteristics and academic performance (p>0.05).

This approach reflects the traditional approach currently used in pedagogical universities in Uzbekistan and provides a basis for comparison with the experimental group. Data were analyzed using IBM SPSS Statistics 26.0.

Results

The initial diagnosis was conducted in September-October 2022. The main goal was to determine the initial status of the experimental and control groups and verify their statistical equality.

Initial diagnostic results showed that:

1. Statistical equality of groups: There is no statistically significant difference between the experimental and control groups in terms of professional motivation (p=0.687) and reflective skills (p=0.812). This confirms that the groups are identical at baseline.

2. Overall low level: The majority of students (46-47%) have a low level of professional reflection culture. This indicates that insufficient attention is paid to the development of a reflexive culture in the modern education system.

3. Low levels of higher education: Only 12-13% of students have higher education, which highlights the need for targeted development of a reflective culture.

The final diagnostics were conducted in September-November 2025. The main goal was to determine the final results of the experimental work and assess the differences between the groups.

The final diagnostic results are very important and provide the following key
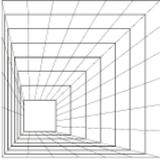
conclusions:

1. Significant differences: The experimental group achieved statistically higher results than the control group. The difference in professional motivation was 13.2 points (p<0.001), and the difference in reflective skills was 72.5 points (p<0.001).

2. Large effect size: The effect size is large (r=0.61-0.70), indicating the practical significance of the methodology.

3. Changes in levels: In the experimental group, the high level increased from 12.5% to 39.6% (27.1% increase), while in the control group, the minimum increased from 12.7% to 14.5% (1.8% increase).

4.3. Changes within groups

Table 9. Changes in the experimental group (Wilcoxon test)

Indicator	Initial M±SD	Final M±SD	Difference	Z	pr
Professional motivation	38.2±8.5	52.7±7.3	+14.5	-5.987	<0.001*** 0.86
Reflective skills	89.5±18.2	165.3±22.5	+75.8	-6.012	<0.001*** 0.87

Indicator	Initial M±SD	Final M±SD	Difference	Z	pr
Professional motivation	37.8±8.9	39.5±8.7	+1.7	-1.234	0.217 0.17
Reflective skills	88.7±19.1	92.8±20.3	+4.1	-1.456	0.145 0.20

Analysis of results:

1. Significant changes in the experimental group: Professional motivation increased by 38.0%, reflexive skills by 74.7%. The effect size is very large (r>0.75).

2. Minimal changes in the control group: Professional motivation increased by only 4.5%, and reflexive skills by 4.6%. The effect size is small (r<0.2).

3. Significance of the difference: The changes in the experimental group are statistically highly significant (p<0.001), while those in the control group are insignificant (p>0.05).

CONCLUSION

This study developed the theoretical foundations of a methodology for developing a culture of professional reflection in future educators and empirically confirmed its effectiveness.

1. The concept of a culture of professional reflection has been clarified: We have defined a culture of professional reflection as the ability and need of a teacher to continuously and systematically analyze, evaluate and improve his or her professional activities, professional "I", pedagogical values and professional development.

2. A four-component model was developed: The culture of professional reflection consists of four interrelated components: motivational-valued, cognitive-knowledgeable, operational-activity, and reflexive-evaluation.

3. The author's position was formed: A holistic approach was developed based on the principles of synthesis of reflexive and innovative approaches, integration of theory and practice, phased development, and comprehensive evaluation.

Empirical results:

1. High efficiency was confirmed: In the experimental group, professional motivation increased by 38.0% (p<0.001), reflective skills by 84.7% (p<0.001). The number of students who achieved high levels increased from 12.5% to 39.6% (27.1% increase).

2. A large effect size was determined: The effect size is large (r=0.61-0.70), which indicates the practical significance of the methodology.

3. Statistical significance confirmed: All differences are statistically highly significant (p<0.001), ensuring the reliability of the results.

Practical importance:

The developed methodology provides valuable practical material and guidance for pedagogical universities, preschool educational institutions, and education policymakers. The methodology
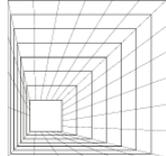
can make a significant contribution to the training of modern, reflective, and constantly self-improving educators in the preschool education system of Uzbekistan.

In conclusion, the research hypothesis was fully confirmed: the development of a culture of professional reflection of future educators was effective, since the culture of professional reflection was developed as a system of four interrelated components, a synthesis of reflexive and innovative technologies was used, theoretical training and practice were closely linked, the principle of phased development was implemented, and a comprehensive assessment system was used.

The results of the study are consistent with international studies (Schön, 1983; Gibbs, 1988; Männikkö, 2019; Hahl and Mikulec, 2018) and confirm them in the Uzbek context. This contributes to the international recognition and development of Uzbek pedagogical science.

References

1. Sch0n, DA The Reflective Practitioner: How Professionals Think in Action / DA Schon. - New York: Basic Books, 1983. - 374 p.

2. Mannikko, I. Supporting Teachers' Professional Development through Reflective Inquiry : Doctoral Dissertation / I. Mannikko. - Turku: University of Turku, 2019. - 163 p.

3. Kadirova, Z.S. Improving the technology of preparing future educators for professional activity: PhD dissertation. / Z.S. Kadirova. – Namangan: Namangan State University, 2020. – 145 p.

4. Ilina, T.I. Motivation obuchenia v vuze / T.I. Ilina // Pedagogy. - Moscow, 1975. - No. 4. - S. 42-48.

5. Karpov, A.V. Psikhologiya reflexivnykh mechanizov deyatelnosti / A.V. Karpov, V.V. Ponomareva. - Moscow: IP RAN, 2000. - 158 p.

6. Hahl, K. Student Reflections on Teacher Identity Development in a Year-long Secondary Teacher Preparation Program / K. Hahl, E. Mikulec // Australian Journal of Teacher Education. - 2018. - Vol. 43, No. 12. – P. 42-58.