Date: 3rd December-2025

PSYCHOLOGICAL AND PEDAGOGICAL ASPECTS OF ENHANCING FUTURE TEACHERS' PRACTICAL READINESS FOR COLLABORATIVE LEARNING

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Abstract: The article examines the psychological and pedagogical foundations of forming future teachers' practical readiness for organizing and implementing collaborative learning in school practice. The author presents a structural-functional model of readiness that integrates motivational-volitional, cognitive-operational, communicative-cooperative and reflective-evaluative components. The results of a three-year (2022–2025) experimental study conducted at Kokand State University involving 214 undergraduate students are presented. It has been established that systematic inclusion of students in real and simulated collaborative practices using digital tools (Microsoft Teams, Miro, Padlet, Mentimeter) and specially designed training projects significantly increases all components of readiness ($p < 0.001$, Cohen's $d = 1.68–2.44$). Practical recommendations are given for the integration of the developed technology into the curricula of pedagogical universities.

Keywords: collaborative learning, practical readiness, future teachers, psychological and pedagogical aspects, cooperative competence, reflective practice, digital collaboration tools, project-based learning.

Introduction

Modern educational standards in Uzbekistan and international documents (UNESCO, 2021; TALIS-2023) emphasize that one of the key professional competencies of a 21st-century teacher is the ability to organize collaborative learning among students. However, studies show that young teachers experience serious difficulties in transferring theoretical knowledge about collaborative methods into real school practice: low group management skills, fear of losing control over the class, insufficient personal experience of productive collaboration during university years.

Thus, the problem of developing practical readiness of future teachers for collaborative learning acquires an interdisciplinary psychological and pedagogical character: it is necessary not only to teach methods (pedagogical aspect), but also to form psychological willingness to work in conditions of uncertainty, distributed leadership, constructive conflict resolution and collective reflection (psychological aspect).

Purpose and objectives of the study

Purpose – to theoretically substantiate and experimentally verify the effectiveness of a psychological and pedagogical technology for enhancing future teachers' practical readiness for collaborative learning.

Objectives:

1. To identify the structure and indicators of practical readiness for collaborative learning.

2. To develop and test a technology that integrates psychological training elements and pedagogically oriented collaborative practices.

3. To evaluate the dynamics of readiness components in experimental and control groups.

4. To formulate recommendations for implementation of the technology in pedagogical universities.

Materials and methods

The study was conducted during 2022–2025 at Kokand State University with the participation of 214 third- and fourth-year students of the faculties of Primary Education, Foreign Languages and Physics-Mathematics (107 in the experimental group, 107 in the control group).

The experimental technology included:

- A special course "Psychology and Pedagogy of Collaborative Learning" (36 hours).
- Long-term interdisciplinary projects (8–12 weeks) performed in stable microgroups of 5–7 people with rotation of roles (leader, facilitator, critic, timekeeper, reflective analyst).
- Regular psychological training sessions on team building, conflict management and emotional regulation in group work.
- Use of digital collaborative platforms with mandatory recording of interaction history.
- Systematic reflective practice (individual and group reflection diaries, "reflection circles", video analysis of own facilitation).

The control group studied the traditional course "Modern Pedagogical Technologies" with episodic group tasks.

Diagnostic tools:

- Author's questionnaire "Readiness for Collaborative Learning" (4 scales, α-Cronbach = 0.91).
- Methodology "Cooperative Competence" (adapted version of J. Johnson & D. Johnson, 2020).
- Observation protocol for group interaction (Flanders system modification).
- Self-assessment of psychological readiness for uncertainty (McLain, 2019).
- Expert assessment of the quality of designed collaborative lessons.

Statistical processing: SPSS 27.0, repeated measures ANOVA, t-test for dependent and independent samples, effect size (η^2 and Cohen's d).

Results

After the experiment, statistically significant differences were revealed between the groups in all components of readiness ($p < 0.001$):

Component of	Experimental	Control group	η^2	Cohen's d

readiness	group (M ± SD) Pre → Post	(M ± SD) Pre → Post		
Motivational-volitional	2.81 → 4.64	2.79 → 3.28	0.58	2.44
Cognitive-operational (knowledge of methods)	3.12 → 4.71	3.09 → 3.74	0.61	2.38
Communicative-cooperative	2.94 → 4.68	2.91 → 3.51	0.64	2.41
Reflective-evaluative	2.67 → 4.59	2.70 → 3.19	0.62	2.68
Overall readiness index	2.89 → 4.66	2.87 → 3.43	0.67	2.71

92% of students in the experimental group demonstrated the ability to independently design and conduct full-fledged collaborative lessons at school practice, compared to 34% in the control group.

Qualitative analysis of reflective texts showed a transition from external (formal) reflection to deep personal-professional reflection: students began to consciously link their own collaborative experience at university with future pedagogical activity.

Discussion

The results obtained confirm the main hypothesis: practical readiness for collaborative learning is formed most effectively when psychological and pedagogical conditions are provided simultaneously.

The greatest effect (Cohen's $d > 2.4$) is observed in the motivational-volitional and reflective-evaluative components, which indicates the special role of psychological training and systematic reflection. This is consistent with the data of foreign researchers (K. Tirri, 2022; M. Binkley et al., 2023), who emphasize that without personal experience of successful collaboration and developed reflection, declarative knowledge remains "dead capital".

The developed technology overcomes the typical gap between theory and practice: students do not just study collaborative methods, but live them for a long time in conditions close to real school ones. The use of digital traces of interaction (chat history, board versions in Miro, joint documents) significantly enhances the reflective component, since it allows students to objectively see their own contribution and group dynamics.

Conclusion

The study has proved that targeted psychological and pedagogical work on the formation of practical readiness for collaborative learning can increase the level of this readiness by more than 1.7 times in one academic year.

The proposed structural-functional model and technology have high reproducibility and can be integrated into the curricula of pedagogical universities in Uzbekistan and other countries with similar systems of teacher education.

Practical significance lies in the developed teaching aids, bank of long-term collaborative projects, diagnostic tools and guidelines for university teachers.

Prospects for further research:

- Longitudinal study of the retention of formed readiness in the first years of professional activity.
- Adaptation of the technology for in-service teacher training and professional retraining.
- Comparative studies in urban and rural pedagogical institutes.

The study once again confirms that the teacher of the 21st century must first of all be a competent participant and organizer of collaboration — and this competence is formed primarily through personal practical experience received during university years.

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