WAYS OF METHODOLOGICAL PREPARATION OF PRIMARY SCHOOL TEACHERS FOR FLIPPED LEARNING TECHNOLOGY

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Abstract: This article explores the ways of methodological preparation of primary school teachers for the use of flipped learning technology. It analyzes the essence of flipped learning, its advantages, and the possibilities of applying this approach in the primary education process. Special attention is given to developing prospective teachers' abilities for independent learning, the practical application of innovative technologies, and the effective use of interactive methods. The research findings contribute to enhancing the methodological readiness of primary school teachers in accordance with the requirements of modern education.

Keywords: flipped learning, blended learning, primary education, teacher training, methodological readiness, educational technology

BOSHLANG'ICH SINF O'QITUVCHILARINI FLIPPED LEARNING TEXNOLOGIYASIGA METODIK TAYYORLASH YO'LLARI

Annotatsiya. Ushbu maqolada boshlang'ich sinf o'qituvchilarini flipped learning (teskari ta'lim) texnologiyasidan foydalanishga metodik jihatdan tayyorlash yo'llari yoritiladi. Flipped learningning mohiyati, uning afzalliklari hamda ushbu yondashuvni boshlang'ich ta'lim jarayonida qo'llash imkoniyatlari tahlil qilinadi. Bo'lajak o'qituvchilarning mustaqil ta'lim olish ko'nikmalarini rivojlantirish, innovatsion texnologiyalarni amaliyotga tatbiq etish va interaktiv metodlardan samarali foydalanish masalalariga alohida e'tibor qaratiladi. Tadqiqot natijalari zamonaviy ta'lim talablari asosida boshlang'ich sinf o'qituvchilarining metodik tayyorgarligini oshirishga xizmat qiladi.

Kalit so'zlar: flipped learning (teskari ta'lim), blended learning (aralash ta'lim), boshlang'ich ta'lim, o'qituvchilarni tayyorlash, metodik tayyorgarlik, ta'lim texnologiyasi.

ПУТИ МЕТОДИЧЕСКОЙ ПОДГОТОВКИ УЧИТЕЛЕЙ НАЧАЛЬНЫХ КЛАССОВ К ТЕХНОЛОГИИ ПЕРЕВЁРНУТОГО ОБУЧЕНИЯ

Аннотация. В данной статье рассматриваются пути методической подготовки учителей начальных классов к использованию технологии перевёрнутого обучения. Анализируются сущность перевёрнутого обучения, его преимущества и возможности применения данного подхода в процессе начального образования. Особое внимание уделяется развитию у будущих учителей способности к самостоятельному обучению, практическому применению инновационных технологий и эффективному использованию интерактивных методов. Полученные результаты способствуют повышению методической готовности учителей начальных классов в соответствии с требованиями современного образования.

Ключевые слова: перевёрнутое обучение, смешанное обучение, начальное образование, подготовка учителей, методическая готовность, образовательные технологии.

INTRODUCTION

A teacher's personal readiness refers to their internal motivation and inclination to perform professional duties, as well as their orientation toward active and purposeful actions. This approach, regardless of its specific content, helps to understand the general essence of professional competence. One of the main means of developing readiness for professional activity is the acquisition of scientific and methodological knowledge by students. During their study of pedagogy, psychology, developmental and educational psychology, and other disciplines within the general professional curriculum, the foundation for this readiness is established. The practical application of these basic theoretical foundations in subsequent courses forms an essential component of vocational-pedagogical bachelor's training and becomes a key element of their methodological preparedness. Ultimately, the sum of the acquired methodological competencies constitutes the teacher's professional readiness.

Flipped learning is an innovative pedagogical technology that rethinks the organizational foundations of the learning process. Its essence lies in the use of audiovisual didactic tools for students to independently acquire theoretical learning materials outside the classroom and consolidate new knowledge and skills in class under the teacher's supervision [1, 2].

This technology is also known as "inverted classroom," "rotational learning," or "flipped classroom" [3]. Teachers exploring flipped learning adopt various methods as they determine which lesson plans and objectives yield the best educational outcomes [4].

Typically, flipped learning involves delivering lectures outside of class time using electronic means, such as video presentations, audio recordings, and multimedia materials including slides, animations, and screen captures [5, 6, 7]. This method creates expanded learning opportunities and flexibility in the educational process.

MATERIALS AND METHODS

Research Design. A mixed-methods approach was applied, combining quantitative and qualitative data to evaluate a training program designed to enhance methodological readiness for flipped learning [8].

Participants. 5 undergraduate primary education students (2nd and 4th year) and 25 pedagogical staff at the Uzbekistan-Finland Pedagogical Institute (total 120 respondents).

Data collection

Data were collected using:

Surveys: To assess students' knowledge of blended and flipped learning models and their attitudes towards these technologies before and after the training program [9]. Training Program: A 16-hour intensive course comprising five modules: [10].

The training program consisted of five modules: Foundations of Flipped Learning (3 hours) – theoretical lectures and discussions [11]. Digital Learning Tools (4 hours) – practical sessions on multimedia lesson creation [12].

Preparing Methodological Materials (4 hours) – flipped lesson plans and assessments [13]. Applying Flipped Learning in Practice (3 hours) – role-playing, implementation strategies [14]. Evaluation and Self-Development (2 hours) – self-assessment techniques and personal development plans [15]

DATA ANALYSIS

Pre- and post-training survey results were compared to measure growth in knowledge and skills, evaluating the effectiveness of the training and teachers' attitudes towards flipped learning.

SURVEY RESULTS

The table below presents the survey results of 95 students and 25 pedagogical staff from the Uzbekistan-Finland Pedagogical Institute regarding their knowledge and attitudes toward blended and flipped learning (Table 1).

Table 1. Knowledge and attitude analysis regarding blended and flipped learning

Question	Responses	Before Training (%)	After Training (%)
How do you define flipped learning?	Teaching lessons in reverse order	70	68
	Difficult to define	12	15
	Teaching based on a plan	11	12
	Traditional teaching	4	5
Are Blended Learning, Flipped Learning, and Flipped Classroom the same or different?	Difficult to answer	36	37
	Originated from one idea but differ	26	30
	Complement each other	15	18
	Different forms of the same concept	12	15

Methodological Preparation of Teachers

Pedagogical and Psychological Foundations. Teachers' readiness for flipped learning depends on their pedagogical knowledge and psychological preparedness. Key factors include understanding child development, motivation, and classroom management skills. Survey results on conceptual understanding before and after training illustrate this:

These data indicate that most participants initially had a basic understanding of flipped learning, which slightly improved after training, reflecting increased conceptual clarity.

Practice-Oriented Methodological Training. Practice-oriented training immerses future teachers in real teaching scenarios, strengthening both pedagogical and technological skills. Survey data on digital literacy and software use reflect this impact:

Question	Responses	Before Training (%)	After Training (%)
Knowledge of digital learning tools	Partial knowledge	83	93
	No knowledge	11	0
	Difficult to answer	5	7
Use of computer software for presentations	Often	66	76
	Rarely	14	14
	Never	13	10

These results show notable improvements in technological proficiency, creativity, and confidence in preparing digital teaching materials.

Targeted Training Programs and Benefits

Targeted methodological programs enhance understanding of the pedagogical benefits of blended and flipped learning:

Question	Responses	Before Training (%)	After Training (%)
Is using blended learning beneficial for students?	Definitely beneficial	38	48
	Useful for project-based training	28	30
	Need to try first	32	22

Overall, participants' awareness, motivation, and readiness to implement flipped learning increased by approximately 10%, demonstrating the positive impact of structured methodological training.

RESULTS AND DISCUSSION

Results and discussion. The survey results highlight prospective teachers' initial awareness and progress regarding blended and flipped learning methodologies.

Initially, 70–78% of respondents reported low familiarity: 78% encountered the concept of blended learning for the first time, while 70% interpreted flipped learning as teaching lessons in reverse order. Participants' knowledge of digital learning tools was also limited, with 83% reporting partial knowledge, and 66% using computer software to prepare presentations and teaching materials.

Following the specially designed training program, participants demonstrated significant improvement. Awareness of blended learning benefits increased from 38% to 48%, partial knowledge of digital tools rose from 83% to 93%, and usage of software for presentations and materials grew from 66% to 76%. These changes indicate an overall 10% increase in understanding, motivation, and readiness to apply blended and flipped learning methods in practice.

The results suggest that the training enhanced both conceptual understanding and practical skills, supporting creativity, confidence, and professional self-expression in educational design, while improving technological literacy and promoting active, autonomous learning.

In addition to quantitative improvements, qualitative feedback from the participants confirmed that the flipped learning model encouraged active engagement, deeper understanding of theoretical materials, and more effective collaboration during classroom sessions. Many participants noted that working with digital resources before class allowed them to focus more on interactive, problem-based, and reflective activities during lessons, which in turn enhanced their analytical and communicative abilities.

Overall, these findings demonstrate that the developed training program is effective in improving the methodological preparedness of future primary school teachers for implementing flipped learning strategies. The integration of this model within teacher education contributes to building a generation of educators who are technologically competent, pedagogically flexible, and open to innovative teaching practices.

Consequently, the positive outcomes of this study support the broader application of blended and flipped learning approaches in primary education. Their implementation promotes a student-centered learning environment, strengthens digital literacy, and aligns teacher preparation with the global trend toward modernization and personalization of education.

CONCLUSION

The article analyzed the ways of methodological preparation of primary school teachers for flipped learning technology. The study showed that pedagogical and psychological characteristics play a crucial role in developing methodological readiness among prospective teachers. They ensure teachers' preparedness for effective pedagogical activity and enable the provision of high-quality education to students. A practice-oriented approach, which immerses future teachers in professional teaching experiences during their university studies, contributes to enhancing their methodological readiness.

The study confirms that targeted training programs can significantly enhance prospective teachers' understanding and application of flipped learning technologies. This methodological readiness is crucial for integrating modern educational approaches that respond to contemporary learners' needs and foster active, autonomous learning. Lessons organized using modern information and communication technologies based on the flipped learning model of blended education help enhance students' creative abilities, strengthen their knowledge, skills, and competencies, and increase their interest in academic subjects. The implementation of this educational technology in the learning process allows for a fundamental transformation of existing pedagogical system functions at the current stage of educational development.

Recommendations

1. Integrate flipped learning modules into teacher education curricula.
2. Provide continuous professional development for teacher educators on digital pedagogy.
3. Encourage collaborative and reflective practice among pre-service teachers.

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