



METHODOLOGICAL FOUNDATIONS FOR THE EFFECTIVE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN PRE-PRIMARY PREPARATORY GROUPS

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Abstract *This article explores the methodological foundations for the effective integration of Information and Communication Technologies (ICT) in pre-primary preparatory groups. The study highlights pedagogical principles, developmental characteristics of children aged 5–6, and practical strategies for incorporating digital tools into early childhood education. The research emphasizes child-centered, activity-based, and developmentally appropriate approaches. It also outlines the role of educators, digital competence requirements, and conditions necessary for successful ICT implementation. The findings suggest that when used systematically and purposefully, ICT enhances cognitive development, motivation, creativity, and school readiness among preschool children.*

Keywords: *ICT in early childhood education, pre-primary education, digital pedagogy, school readiness, innovative teaching methods, educational technologies.*

Аннотация В данной статье рассматриваются методологические основы эффективной интеграции информационно-коммуникационных технологий (ИКТ) в подготовительных группах дошкольных образовательных организаций. В исследовании освещаются педагогические принципы, возрастные особенности развития детей 5–6 лет, а также практические стратегии внедрения цифровых инструментов в

систему дошкольного образования. Особое внимание уделяется личностно-ориентированному, деятельностному и возрастосообразному подходам. Также раскрываются роль педагога, требования к его цифровой компетентности и условия, необходимые для успешного применения ИКТ. Результаты исследования показывают, что при системном и целенаправленном использовании ИКТ способствуют развитию познавательных процессов, повышению мотивации, творческих способностей и формированию готовности к школьному обучению у детей дошкольного возраста.

Ключевые слова: *ИКТ в дошкольном образовании, предшкольная подготовка, цифровая педагогика, готовность к школе, инновационные методы обучения, образовательные технологии.*

Introduction

The rapid development of digital technologies has significantly influenced all areas of education, including early childhood education. In many countries, including Uzbekistan, modernization of preschool education is a national priority. Integrating ICT into pre-primary preparatory groups has become an essential component of improving educational quality and preparing children for school in a digital society.

Pre-primary preparatory groups focus on developing children's cognitive, communicative, social-emotional, and physical skills to ensure smooth transition to primary school. The use of ICT in this stage must be methodologically justified and developmentally appropriate. Therefore, establishing clear methodological foundations is crucial for ensuring effective and safe technology integration.

Theoretical Foundations of ICT Integration in Pre-Primary Education

The methodological basis for ICT use in pre-primary groups is grounded in modern pedagogical theories and child development concepts.

1. Child-Centered Approach

ICT tools should support individual learning pace and interests. Digital games, interactive presentations, and multimedia storytelling allow educators to differentiate instruction and foster active engagement.

2. Activity-Based Learning

Young children learn best through play and hands-on activities. ICT should complement, not replace, traditional play-based learning. Interactive whiteboards, educational applications, and digital storytelling platforms enhance experiential learning.

3. Developmentally Appropriate Practice (DAP)

Technology use must correspond to the psychological and physiological characteristics of 5–6-year-old children. Screen time should be limited and balanced with physical activity, social interaction, and creative tasks.

4. Constructivist Learning Theory

Based on the ideas of Jean Piaget and Lev Vygotsky, children construct knowledge through interaction and guided support. ICT tools can facilitate collaborative tasks, problem-solving activities, and scaffolded learning experiences within the child's zone of proximal development.

Pedagogical Conditions for Effective ICT Use

For ICT integration to be effective in pre-primary preparatory groups, several conditions must be met:

1. Teacher Digital Competence

Educators must possess:

- Basic technical skills
- Pedagogical understanding of ICT integration

- Ability to select age-appropriate digital content
- Skills in managing digital classroom environments

Professional development programs are essential for building teachers' digital literacy.

2. Safe and Healthy Digital Environment

ICT use must comply with health standards:

- Limited screen exposure time
- Proper lighting and seating arrangements
- Age-appropriate content filtering
- Supervised use of devices

3. Integration into Curriculum

ICT should not be used randomly. It must be integrated into:

- Literacy development
- Early mathematics
- Environmental awareness
- Creative arts
- Speech and language development

Digital tools should serve clear educational objectives.

Practical Directions for ICT Implementation

1. Multimedia Presentations

Teachers can use interactive slides to introduce letters, numbers, shapes, and stories. Visual and auditory elements enhance attention and retention.

2. Educational Games

Digital educational games support logical thinking, memory, and problem-solving skills.

3. Digital Storytelling

Children can participate in creating digital stories, which fosters creativity and language development.

4. Interactive Whiteboards

Interactive whiteboards encourage collaborative learning. Children can match objects, draw shapes, and complete interactive tasks together.

5. Tablet-Based Learning Activities

Tablets, when used under teacher supervision, can provide individualized practice and reinforce classroom learning.

Advantages of ICT in Pre-Primary Preparatory Groups

Properly organized ICT use contributes to:

- Increased learning motivation
- Enhanced visual and auditory perception
- Development of digital literacy
- Improved speech and communication skills
- Strengthened school readiness

Moreover, ICT fosters inclusive education by supporting children with special educational needs through adaptive technologies.

Challenges and Limitations

Despite its benefits, ICT implementation faces challenges:

- Insufficient technical infrastructure
- Limited teacher training
- Risk of excessive screen time
- Overreliance on digital tools

Therefore, balance between traditional and digital methods is essential.

Conclusion

The effective use of ICT in pre-primary preparatory groups requires strong methodological foundations based on child-centered, developmentally appropriate, and activity-based principles. ICT should function as a supportive pedagogical tool rather than a substitute for human interaction and play.

When integrated purposefully into the educational process, ICT enhances cognitive development, creativity, motivation, and school readiness. Future research should focus on developing national methodological guidelines and training models for educators to ensure sustainable and effective digital transformation in early childhood education.

References

1. Zhuraeva, N. T. (2021). MATHS KEY OF MIND AND INTELLIGENCE (Methodology for the formation of elementary mathematical representations of children in preschool institutions). *Экономика и социум*, (1-1), 316-319.
2. Tairovna, Z. N. (2022). The Role of Didactic Tools in the Mathematical Development of Children. *Spanish Journal of Society and Sustainability*, 3, 39-40.
3. Jurayeva, N. T. (2022, November). Methods of implementation and mechanisms of implementation of the norms of international law. In *INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE" THE TIME OF SCIENTIFIC PROGRESS"* (Vol. 1, No. 3, pp. 113-120).
4. Juraeva, N. T. (2022). Organization of the educational process in preschool educational organizations. *Results of National Scientific Research International Journal*, 1(6), 244-251.

5. Жураева, Н. Т. (2022). ТЕХНОЛОГИЯ РАЗВИТИЯ НАВЫКОВ ЛОГИЧЕСКОГО МЫШЛЕНИЯ ПРИ ПОДГОТОВКЕ СТАРШИХ ДОШКОЛЬНИКОВ К ШКОЛЕ. *International Academic Research Journal Impact Factor 7.4*, 1(6), 232-239.
6. Жұраева, Н. (2022). МАКТАБГАЧА ТАЪЛИМ СИФАТИ ИНДИКАТОРЛАРИНИ АМАЛИЁТГА ЖОРИЙ ЭТИШ МАЗМУНИ. *Eurasian Journal of Academic Research*, 2(11), 491-493.
7. Жураева, Н. Т. (2020). МЕНТАЛЬНАЯ АРИФМЕТИКА КАК УНИКАЛЬНАЯ МЕТОДИКА РАЗВИТИЯ УМСТВЕННЫХ СПОСОБНОСТЕЙ. In *ОБРАЗОВАНИЕ ЛИЦ С ОСОБЫМИ ОБРАЗОВАТЕЛЬНЫМИ ПОТРЕБНОСТЯМИ: МЕТОДОЛОГИЯ, ТЕОРИЯ, ПРАКТИКА* (pp. 136-139).
8. Бабаева, Д. Р., & Жураева, Н. Т. (2023, January). ТЕХНОЛОГИЯ РАЗВИТИЯ НАВЫКОВ ЛОГИЧЕСКОГО МЫШЛЕНИЯ ПРИ ПОДГОТОВКЕ К ШКОЛЕ. In *INTERNATIONAL SCIENTIFIC CONFERENCE" INNOVATIVE TRENDS IN SCIENCE, PRACTICE AND EDUCATION"* (Vol. 2, No. 5, pp. 5-12).
9. Jurayeva, N. T. (2023, September). EFFECTIVENESS OF WORK CARRIED OUT IN COOPERATION WITH PRESCHOOL STUDENTS AND PARENTS. In *INTERNATIONAL SCIENTIFIC CONFERENCE" SCIENTIFIC ADVANCES AND INNOVATIVE APPROACHES"* (Vol. 1, No. 3, pp. 48-52).
10. Jurayeva, N. T. (2023). INNOVATIVE FORMS AND METHODS-AS A FACTOR OF SUCCESSFUL IMPROVEMENT OF TEACHERS' COMMUNICATIVE COMPETENCE. *Modern Scientific Research International Scientific Journal*, 1(6), 27-32.

11. Jurayeva, N. T., & Israilova, D. A. (2023, October). WAYS OF INTRODUCING CHILDREN TO NATURE AT THE "ILM FAN AND NATURE" CENTER IN PRE-SCHOOL EDUCATIONAL ORGANIZATIONS. In *INTERNATIONAL SCIENTIFIC CONFERENCE "INNOVATIVE TRENDS IN SCIENCE, PRACTICE AND EDUCATION"* (Vol. 2, No. 8, pp. 36-39).
12. Жураева, Н. Т., & Ярбекова, Д. А. (2023, October). ОСНОВНЫЕ ПРИНЦИПЫ СОЗДАНИЯ ПРЕДМЕТНО-РАЗВИВАЮЩЕЙ СРЕДЫ В ДОШКОЛЬНОМ ОБРАЗОВАНИИ. In *INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE "THE TIME OF SCIENTIFIC PROGRESS"* (Vol. 2, No. 8, pp. 44-49).
13. Jo'rayeva, N. T., & Mo'minjon qizi Maxamadaminova, X. (2023). TALIM JARAYONIDA STEAM TEXNALOGIYASI VA UNING ORNI. *ILM FAN TARAQQIYOTIDA ZAMONAVIY METODLARNING QO'LLANILISHI*, 3(9), 99-103.
14. Jo'rayeva, N. T., & Xusanova, R. K. (2023, January). MAKTABGACHA TA'LIM TASHKILOTLARIDA MASHG'ULOTLARNI PEDAGOGIK TEXNOLOGIYALAR ASOSIDA TASHKIL ETISH MAZMUNI. In *INTERNATIONAL CONFERENCES* (Vol. 1, No. 2, pp. 617-620).