A METHODOLOGY FOR FORMING STUDENTS' SOCIAL-COMMUNICATIVE COMPETENCE DURING THE PRIMARY EDUCATION PROCESS BY APPLYING THE 4K PRINCIPLES (CREATIVITY, CRITICAL THINKING, COMMUNICATION, AND COLLABORATION)

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Abstract

This article explores the methodological foundations for developing primary school students' social-communicative competence through the integration of 4K principles: creativity, critical thinking, communication, and collaboration. The study is based on a mixed-methods research design, combining quantitative and qualitative approaches to assess the effectiveness of 4K-based instructional strategies. A pedagogical experiment was conducted with primary school students, divided into experimental and control groups, over a 12-week period. The experimental group was taught using interactive, student-centered methods, including group work, role-playing, and problem-based learning, while the control group followed traditional teaching approaches. The article concludes that the proposed methodology provides an effective framework for fostering socially competent and communicatively active learners in primary education.

Keywords

4K skills, creativity, critical thinking, communication, collaboration, primary education, social-communicative competence, interactive learning, pedagogical methodology, student-centered approach.

Introduction

In the context of rapid globalization, digital transformation, and the increasing complexity of social interactions, modern education systems are shifting from knowledge-based paradigms toward competency-based approaches. Among these, the development of 21st-century skills commonly conceptualized as the "4K" framework (creativity, critical thinking, communication, and collaboration) has become a central priority in primary education. These competencies are not only essential for academic success but also serve as foundational elements for fostering students' social and communicative abilities, particularly in early stages of learning. As a result, integrating 4K principles into the teaching-learning process has emerged as a critical pedagogical task.

A growing body of research emphasizes that primary education plays a decisive role in shaping learners' social-communicative competence, which includes the ability to interact effectively, express ideas clearly, and engage in cooperative problem-solving[1]. From a socio-constructivist perspective, learning is inherently a social process, and the classroom environment must provide opportunities for meaningful interaction and dialogue. In this regard, the integration of collaborative and communicative practices supports not only cognitive development but also social adaptation and emotional intelligence[2].

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[1] Vygotsky L. S. *Mind in Society: The Development of Higher Psychological Processes*. – Cambridge, MA: Harvard University Press, 1978. – 159 p.

[2] Mercer N., Littleton K. *Dialogue and the Development of Children's Thinking: A Sociocultural Approach*. – London: Routledge, 2007. – 187 p.

Scholars such as Trilling and Fadel argue that creativity and critical thinking are indispensable for navigating the challenges of the modern world, as they enable learners to generate innovative ideas and make reasoned decisions[3]. Creativity in primary education encourages learners to explore multiple perspectives and develop flexible thinking patterns, while critical thinking fosters analytical skills and independent judgment[4]. When these elements are combined with communication and collaboration, they create a holistic framework for developing socially competent individuals capable of effective interaction in diverse contexts.

Recent studies also highlight the methodological importance of integrating 4K skills into subject-based instruction rather than treating them as separate learning outcomes[5]. For instance, communicative activities such as group discussions, role-playing, and project-based learning have been shown to significantly enhance students' ability to articulate ideas and engage in constructive dialogue[6]. Similarly, collaborative learning environments promote peer interaction, mutual support, and shared responsibility, which are essential components of social competence[7].

Despite the recognized importance of 4K competencies, there remains a gap in methodological frameworks that systematically address their integration into primary education, particularly in the context of developing social-communicative competence. Many existing approaches focus on isolated skills rather than adopting an integrated model that reflects the interconnected nature of creativity, critical thinking, communication, and collaboration. This highlights the need for a comprehensive pedagogical strategy that aligns instructional methods, classroom activities, and assessment tools with the objectives of 4K-based education.

The relevance of this study is therefore обусловлена the growing demand for innovative teaching methodologies that not only enhance academic performance but also prepare learners for active participation in social and professional environments. In the context of primary education, where foundational skills are formed, the effective implementation of 4K principles can significantly contribute to the development of socially competent, communicatively active, and cognitively flexible learners.

The aim of this article is to develop and substantiate a methodological framework for fostering primary school students' social-communicative competence through the integration of 4K principles in the educational process. The study seeks to analyze theoretical foundations, identify effective pedagogical strategies, and propose practical approaches that can be implemented in classroom settings to achieve this goal.

Methods and Materials

This study employs a mixed-methods research design to investigate the effectiveness of applying 4K principles creativity, critical thinking, communication, and collaboration in fostering primary school students' social-communicative competence. The integration of both

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[3] Trilling B., Fadel C. *21st Century Skills: Learning for Life in Our Times*. – San Francisco: Jossey-Bass, 2009. – 243 p.

[4] Paul R., Elder L. *Critical Thinking: Tools for Taking Charge of Your Learning and Your Life*. – Boston: Pearson Education, 2014. – 348 p.

[5] Partnership for 21st Century Skills. *Framework for 21st Century Learning*. – Washington, DC, 2015. – Available at: http://www.p21.org

[6] Johnson D. W., Johnson R. T. *An Educational Psychology Success Story: Social Interdependence Theory and Cooperative Learning*. – Minneapolis: University of Minnesota, 2009. – 38 p.

[7] Slavin R. E. *Cooperative Learning: Theory, Research, and Practice*. – Boston: Allyn & Bacon, 2014. – 344 p.

qualitative and quantitative approaches allows for a comprehensive analysis of pedagogical processes and learning outcomes, ensuring the reliability and validity of the findings[8].

The research was conducted in selected primary schools, involving 3rd and 4th grade students aged between 9 and 11. A total of 60 students participated in the study, divided into an experimental group (30 students) and a control group (30 students). The experimental group was taught using instructional methods based on 4K principles, while the control group followed traditional teaching approaches. The selection of participants was carried out using purposive sampling to ensure homogeneity in terms of students' initial academic level and socio-cultural background.

The methodological framework of the study is grounded in socio-constructivist theory, which emphasizes the importance of interaction, collaboration, and active learning in cognitive and social development[9]. In line with this approach, the teaching intervention incorporated interactive and student-centered methods, such as group discussions, role-playing activities, problem-based learning, and project work. These methods were specifically designed to enhance students' ability to communicate effectively, think critically, generate creative ideas, and collaborate with peers.

To assess the development of students' social-communicative competence, a set of criteria[10] and indicators was developed based on existing pedagogical research[11]. The assessment focused on the following components: (1) communicative clarity and fluency, (2) ability to participate in group interaction, (3) expression of personal opinions, (4) listening and responding skills, and (5) cooperative behavior. Each component was evaluated using a three-level scale: high, medium, and low.

Data collection was carried out through multiple instruments to ensure triangulation. These included classroom observations, student questionnaires, teacher interviews, and pre- and post-intervention assessments. Classroom observations were conducted systematically to monitor students' participation, interaction patterns, and engagement in 4K-based activities. The observation protocol was developed based on interactive learning indicators[12]. Student questionnaires were used to gather information about learners' attitudes toward collaborative and communicative activities, while teacher interviews provided insights into the practical implementation of the methodology and its perceived effectiveness.

In addition, a pedagogical experiment was conducted over a period of 12 weeks. During this time, the experimental group was exposed to structured lessons integrating 4K elements across various subjects, particularly in language and literacy classes. The lessons were designed to include tasks that required students to solve problems collaboratively, express their ideas verbally, and engage in creative thinking processes. The control group, in contrast, continued learning through conventional teacher-centered methods, focusing primarily on individual work and rote learning.

Quantitative data obtained from pre- and post-tests were analyzed using comparative statistical methods to determine the level of improvement in students' social-communicative

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[8] Creswell J. W. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. – Thousand Oaks, CA: SAGE Publications, 2014. – 273 p.

[9] Vygotsky L. S. *Mind in Society: The Development of Higher Psychological Processes*. – Cambridge, MA: Harvard University Press, 1978. – 159 p.

[10] Canale M., Swain M. Theoretical Bases of Communicative Approaches to Second Language Teaching and Testing // *Applied Linguistics*. – 1980. – Vol. 1, No. 1. – P. 1–47.

[11] Hymes D. On Communicative Competence // *Sociolinguistics*. – Harmondsworth: Penguin, 1972. – P. 269–293.

[12] Mercer N., Littleton K. *Dialogue and the Development of Children's Thinking: A Sociocultural Approach*. – London: Routledge, 2007. – 187 p.

competence. The results were measured in percentages and mean scores to identify differences between the experimental and control groups. Qualitative data from observations and interviews were analyzed through thematic analysis, allowing for the identification of recurring patterns and key factors influencing the effectiveness of 4K-based instruction[13].

The reliability of the research instruments was ensured through pilot testing and expert validation, while ethical considerations were taken into account by obtaining informed consent from school authorities, teachers, and students' parents. Participation in the study was voluntary, and all data were anonymized to protect participants' confidentiality.

The chosen methodology provides a systematic and evidence-based approach to examining how the integration of 4K principles can enhance primary school students' social-communicative competence, combining theoretical grounding with practical classroom implementation.

Results and Discussion

The results of the pedagogical experiment demonstrate that the systematic integration of 4K principles creativity, critical thinking, communication, and collaboration into the primary education process has a significant positive impact on students' social-communicative competence. The comparative analysis of pre- and post-intervention data reveals notable differences between the experimental and control groups across all assessed indicators.

At the initial stage of the experiment, both groups showed relatively similar levels of social-communicative competence. The majority of students in both groups were categorized at medium and low levels, indicating limited ability to express ideas clearly, participate actively in discussions, and collaborate effectively. However, after the 12-week intervention, substantial improvements were observed in the experimental group, while changes in the control group remained minimal.

Table 1. Dynamics of Students' Social-Communicative Competence Development (Pre- and Post-Experiment)

Level of Competence	Experimental Group (Pre-test)	Experimental Group (Post-test)	Control Group (Pre-test)	Control Group (Post-test)
High	20%	48%	18%	24%
Medium	50%	42%	52%	50%
Low	30%	10%	30%	26%

Source: Developed by the author based on experimental data.

The data presented in Table 1 clearly indicate that the proportion of students with a high level of social-communicative competence in the experimental group increased from 20% to 48%, representing a 28% improvement. At the same time, the percentage of students at the low level decreased significantly from 30% to 10%. In contrast, the control group demonstrated only slight improvements, with a modest increase in high-level performance (from 18% to 24%) and a minor decrease in low-level indicators.

These results confirm the effectiveness of 4K-based instructional strategies in enhancing students' communicative abilities and social interaction skills. The observed improvements can be attributed to the active learning environment created through collaborative tasks, problem-

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[13] Braun V., Clarke V. Using Thematic Analysis in Psychology // *Qualitative Research in Psychology*. – 2006. – Vol. 3, No. 2. – P. 77–101.

solving activities, and communicative exercises. For example, during group projects, students in the experimental group demonstrated increased engagement in discussions, improved ability to articulate their thoughts, and greater willingness to listen to peers. This aligns with the findings of Johnson and Johnson, who emphasize that cooperative learning environments significantly enhance interpersonal communication and group interaction skills[14].

Qualitative observations further support the quantitative data. It was noted that students exposed to 4K methodologies became more confident in expressing their opinions and more active in classroom interactions. In particular, role-playing activities and problem-based tasks encouraged students to think critically and respond spontaneously, which contributed to the development of both verbal and non-verbal communication skills. These findings are consistent with Mercer and Littleton, who argue that dialogic interaction plays a crucial role in cognitive and communicative development[15].

Another important outcome of the study is the improvement in collaborative behavior among students in the experimental group. Learners demonstrated a higher level of responsibility, mutual support, and ability to work in teams. This suggests that collaboration, as a core component of the 4K framework, not only enhances academic learning but also fosters essential social competencies. Slavin similarly highlights that structured group work promotes positive interdependence and individual accountability, leading to better learning outcomes[16].

From a critical perspective, it is important to note that the successful implementation of 4K principles requires careful planning and teacher preparedness. Some challenges were observed during the initial stages of the experiment, particularly related to time management and students' adaptation to interactive learning formats. However, these challenges decreased over time as both teachers and students became more familiar with the methodology.

Overall, the findings of this study demonstrate that integrating creativity, critical thinking, communication, and collaboration into primary education significantly contributes to the development of students' social-communicative competence. The combination of quantitative improvements and qualitative observations provides strong evidence for the effectiveness of this approach. Moreover, the results highlight the importance of adopting innovative, student-centered teaching methods to meet the demands of modern education and to prepare learners for active participation in society.

Conclusion

The findings of this study confirm that the integration of 4K principles creativity, critical thinking, communication, and collaboration into the primary education process plays a crucial role in developing students' social-communicative competence. The results of the experimental research demonstrate that learners exposed to 4K-based instructional methods show significantly higher levels of communicative activity, cooperative behavior, and critical engagement compared to those taught through traditional approaches.

The study highlights that interactive, student-centered teaching strategies not only improve academic outcomes but also foster essential social skills necessary for effective participation in modern society. Moreover, the combination of quantitative and qualitative data provides strong evidence that systematic and methodologically grounded implementation of 4K principles enhances both individual and group learning dynamics.

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[14] Johnson D. W., Johnson R. T. *An Educational Psychology Success Story: Social Interdependence Theory and Cooperative Learning*. – Minneapolis: University of Minnesota, 2009. – 38 p.

[15] Mercer N., Littleton K. *Dialogue and the Development of Children's Thinking: A Sociocultural Approach*. – London: Routledge, 2007. – 187 p.

[16] Slavin R. E. *Cooperative Learning: Theory, Research, and Practice*. – Boston: Allyn & Bacon, 2014. – 344 p.

In conclusion, the proposed methodology can be considered an effective pedagogical approach for primary education, contributing to the formation of socially competent, communicatively active, and intellectually flexible learners. Future research may focus on expanding the application of this framework across different educational contexts and age groups, as well as exploring digital tools to further support 4K skill development.

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4. Paul R., Elder L. *Critical Thinking: Tools for Taking Charge of Your Learning and Your Life*. – Boston: Pearson Education, 2014. – 348 p.
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