

**INTEGRATING 21ST CENTURY SKILLS INTO TEACHERS' INSTRUCTIONAL  
METHODS ACCORDING TO PISA FRAMEWORK**

**Kaljanova Gulmira Barlikbay kizi**

teacher of Uzbekistan State World languages university, Tashkent

**Abstract:** This article explores the integration of 21st century skills into teachers' instructional methodologies, specifically framed within the context of the PISA (Programme for International Student Assessment) framework. It analyzes the alignment between core competencies central to modern education and the requirements stated in the PISA assessments. The focus encompasses how educators adapt their teaching strategies to promote critical thinking, problem-solving, collaboration, creativity, digital literacy, and global citizenship, ensuring learners' preparedness for complex realities of the contemporary world. The research draws on educational literature, recent reforms, empirical studies, and examples of effective instructional practices, offering a comprehensive view of the transformation necessary for today's classrooms.

**Keywords:** 21st century skills, PISA framework, instructional methodologies, teachers, critical thinking, creativity, digital literacy, global citizenship.

**INTRODUCTION**

Integrating 21st century skills into teachers' instructional methods has become a pressing priority for education systems around the globe. With the world swiftly shifting towards knowledge-driven economies, globalization, and rapid technological advancement, educational institutions are no longer solely tasked with the transmission of factual knowledge. Rather, the focus has shifted to fostering critical competencies that empower students to navigate complex, ambiguous, and constantly changing environments. The PISA framework is globally recognized for its rigorous approach to measuring key competencies among 15-year-old students, emphasizing literacy in reading, mathematics, and science, while increasingly incorporating elements such as collaborative problem solving and global competence. Teachers form the backbone of any reform aiming to integrate 21st century skills, because it is through their instructional choices, beliefs, and classroom interactions that these competencies are genuinely cultivated. The PISA framework emphasizes the need for authentic teaching that supports not rote memorization but analysis, reasoning, interpretation, and inquiry. This approach is grounded on the understanding that students are expected to be lifelong learners, adaptable and capable of thriving in scenarios that demand not only subject knowledge but interpersonal, technological, and intrapersonal skills.

**MATERIALS AND METHODS**

Critical thinking is a pillar within the structure of 21st century competencies and gains elevated importance in the PISA framework. Instructionally, fostering critical thinking requires pedagogical shifts: teachers are encouraged to move away from fixed-answer recitation to open-ended questions, Socratic dialogue, project-based learning, and tasks that require evaluation of information, construction of arguments, and defence of opinion. Authentic assessment tasks that mirror real-life situations and utilize texts, multimedia, and data emulate PISA's methodology, enabling students to apply knowledge in meaningful contexts. Creativity, often associated with the arts, is redefined as the ability to generate ideas, solutions, or products that are both novel and valuable. Integrating creativity into instruction involves creating a classroom environment where experimentation is encouraged, mistakes are viewed as learning opportunities, and alternative perspectives are celebrated. Teachers instrumentalize creativity through instructional design, task choice, and assessment, leveraging tools such as design thinking, storytelling, brainstorming sessions, and open-ended projects [1].

Collaboration is closely linked to the concept of global competencies and problem-solving. According to the PISA framework, the ability to cooperate, share responsibilities, and communicate effectively within diverse groups is fundamental. Teachers must adjust their methodologies to prioritize group work, peer assessment, collaborative problem-solving, and digital platforms that mirror professional and global settings. This requires teachers themselves to be open to co-teaching, interdisciplinary approaches, and continuous professional development in the use of collaborative technologies and strategies. Digital literacy stands as another core competency of 21st century learning. In the era of pervasive information and communication technologies, students are called upon not just to consume information, but to analyze, evaluate, and produce content across multiple platforms. Teachers who integrate digital literacy effectively utilize tools such as simulations, virtual learning environments, educational apps, and online collaboration tools to cultivate not just technical proficiency but digital ethics, discernment, and safety. Teacher training in digital fluency, ethical implications of technology, and pedagogies for online instruction is crucial for this transformation. Global citizenship, now formally recognized by the PISA framework as a domain of assessment, compels teachers to extend their instruction beyond national and cultural boundaries. Fostering global citizenship involves incorporating intercultural education, empathy development, multilingual resources, critical exploration of global issues, and civic engagement tasks. Instructional methods such as global case studies, partnerships with international classrooms, and service learning projects broaden students' horizons, develop intercultural sensitivities, and root learning within a global context [2].

#### **RESULTS AND DISCUSSION**

The integration of all these skills into everyday teaching is not without its challenges. Teachers frequently cite curriculum overload, lack of training, limited resources, testing regimes, and institutional constraints as barriers. Therefore, systemic support is paramount. Education policies must prioritize teacher training programs that are ongoing, reflective, and closely aligned with both 21st century skills and PISA domains. Professional learning communities, mentorship systems, and practice-sharing platforms can provide the collaborative learning environments teachers need to adapt their instructional methods successfully. Instructional leadership within schools—particularly the roles played by administrators and department heads—is likewise critical. By promoting a shared vision, facilitating resources for innovation, and championing a culture of experimentation and reflection, leaders make it possible for teachers to take the risks necessary for transformation. Teachers themselves become change agents, modelling lifelong learning attitudes and the very competencies they are tasked to instill in their students. A vital element in this transformation is the alignment between assessment and instruction. PISA-type assessments are grounded in authentic, scenario-based problem solving, which means classroom assessment must go beyond standardized, multiple-choice formats. Teachers are adopting performance tasks, student portfolios, self- and peer-assessment, and reflective journals to mirror the complexity and depth of real-world challenges. Aligning instructional methods, assessment practices, and curriculum ensures coherence and gives students repeated opportunities to internalize and demonstrate 21st century competencies. Another crucial dimension is the adaptation of instruction to the needs of diverse learners. Universal Design for Learning principles, differentiation, scaffolding, formative feedback, and culturally responsive pedagogy allow teachers to personalize learning and ensure all students, regardless of background or ability, can engage with high-level cognitive and social tasks. PISA results often highlight achievement gaps related to socio-economic status, language, and gender, and thus teacher training must prepare educators to bridge these gaps within the classroom setting [3].

The transformation also necessitates that teacher education programs at universities and colleges reflect current realities. Pre-service teacher training must combine deep domain knowledge with experiential learning focused on innovation, reflective practice, and engagement with real-life problems. Partnerships between schools, universities, and communities are vital in providing prospective teachers with the practical experience required to implement 21st century skills-based instruction from the outset of their careers. Continuous professional development remains a non-negotiable part of this process, as the demands of the 21st century classroom evolve swiftly. International collaboration, participation in online courses, research projects, exposure to best practices from different education systems, and engagement with PISA data and frameworks enrich the capacity of teachers to adapt their practice. Institutional and policy backing are essential for sustainability. Policymakers play a key role in setting standards, developing resources, funding innovation, and developing systems for monitoring and evaluating the effectiveness of 21st century skills integration. Accountability systems need to reflect not only academic attainment but holistic development, valuing creativity, resilience, collaboration, and global awareness equally with traditional academic indicators. Teachers who successfully integrate 21st century skills into their instructional methods frequently employ inquiry-based learning, problem-based learning, flipped classrooms, and experiential learning. These methods are characterized by student-centeredness, engagement with authentic problems, and a focus on higher-order thinking. Inquiry-based learning encourages students to pose questions, research, and construct understanding, which is especially aligned with PISA's emphasis on application of knowledge. Problem-based learning assigns students real-world challenges, requiring multidisciplinary knowledge and teamwork. Flipped classrooms leverage technology to maximize student engagement and responsibility within the classroom setting. Experiential learning immerses students in simulations, community projects, and hands-on tasks, fostering the transfer of skills to new and unpredictable situations [4].

The need for robust digital pedagogy has become increasingly evident in the wake of global disruptions such as the COVID-19 pandemic. Teachers had to pivot rapidly to online and hybrid teaching, underscoring the necessity of digital literacy, flexibility, and innovative instructional design. Integrating 21st century skills within digital contexts involves more than utilizing technology; it demands that teachers create meaningful, collaborative, and challenging learning experiences that mirror how knowledge is used in a connected world. Resilience and adaptability are integral to 21st century learning and therefore must feature in instructional design. Teachers foster these qualities through goal setting, reflective practice, mindfulness, and by encouraging academic risk-taking. Schools that champion innovation provide time and space for teachers to reflect, experiment with new instructional methods, and collaborate with colleagues and external experts. Parental and community involvement are also critical for the effective integration of 21st century skills. Outreach programs, partnerships with local industries, mentorship schemes, and service learning projects bridge the gap between classroom learning and real-world application. When teachers, parents, and community members collaborate to articulate and champion high expectations for 21st century competencies, student motivation and engagement accelerate [5].

Global comparisons made possible through PISA data encourage national education systems to reflect, improve, and aspire to international best practices. By highlighting strengths and weaknesses, PISA reinforces the importance of continuous innovation in instructional methods and curriculum design. Teachers gain insight into effective strategies used in high-performing systems and are inspired to adapt their practice to better support student growth. The ongoing integration of 21st century skills into teachers' instructional methodologies, guided by the PISA framework, thus marks a paradigm shift in education. This process demands

comprehensive reform, deep cultural change, sustained investment in professional development, and a shared commitment to preparing students not just for exams, but for life and work in a rapidly evolving world.

### **Conclusion**

The integration of 21st century skills into teachers' instructional methods, in alignment with the PISA framework, represents a holistic transformation in contemporary education. It demands a reevaluation of instructional practices, curriculum content, assessment methods, and teacher training models. Teachers are at the heart of this transformation, empowered by systemic support, continuous professional learning, and access to innovative resources and strategies. The challenges are considerable, but the rewards—a generation of learners who are adaptable, creative, critical thinkers, effective collaborators, and responsible global citizens—are indispensable for prosperous and just societies. The pursuit of this goal must be collaborative, sustained, and reflective, ensuring education fulfills its essential mission for the 21st century and beyond.

### **References**

1. Voogt, J., & Roblin, N. P. (2012). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. *Journal of Curriculum Studies*.
2. OECD (2018). *Preparing Teachers and Developing School Leaders for the 21st Century: Lessons from around the World*. Paris: OECD Publishing.
3. Trilling, B., & Fadel, C. (2009). *21st Century Skills: Learning for Life in Our Times*. San Francisco: Jossey-Bass.
4. Schleicher, A. (2019). *PISA 2018: Insights and Interpretations*. Paris: OECD Publishing.
5. Griffin, P., McGaw, B., & Care, E. (Eds.). (2012). *Assessment and Teaching of 21st Century Skills*. Springer.
6. Fullan, M., & Langworthy, M. (2014). *A Rich Seam: How New Pedagogies Find Deep Learning*. London: Pearson.
7. Dede, C. (2010). Comparing Frameworks for 21st Century Skills. In J. Bellanca & R. Brandt (Eds.), *21st Century Skills: Rethinking How Students Learn*. Bloomington: Solution Tree Press.