

# SKILLS OF THE 21<sup>ST</sup> CENTURY IN MODERN PEDAGOGY: PREPARING STUDENTS FOR SUCCESS

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**Abstract:** the article examines the 21st century skills as a topical trend of modern education and describes the principles, conditions and prospects of its development. The competencies considered in this paper are included in the 21st century skills - those that employers and educational researchers have recognized as the most important for our society: collaboration and communication, creativity and imagination, critical thinking and problem solving, digital literacy, citizenship, student leadership and personal development. The authors set themselves the task of determining how new competencies fit into educational standards and programs. The article also examines the constructs that make up the skills of the 21st century and the requirements for the modern educational process that forms and develops these competencies. In the rapidly evolving world we live in, the skills required for success are changing at an unprecedented rate. This is particularly true in the field of pedagogy, where educators must equip students with the tools they need to thrive in the 21st century. As we navigate the ever-growing influence of technology and the digital age, it is crucial that we identify and prioritize the skills that will enable students to become critical thinkers, effective communicators, and lifelong students. This article explores some of the key skills needed in pedagogy today and provides insights on how educators can cultivate them within their classrooms.

**Keywords:** the 21st century skills, modern pedagogy, stakeholders, employers, globalization, competencies, educational programs, educational standards.

## НАВЫКИ XXI ВЕКА В СОВРЕМЕННОЙ ПЕДАГОГИКЕ: ПОДГОТОВКА СТУДЕНТОВ К УСПЕХУ

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**Аннотация:** в статье рассматриваются навыки XXI века как актуальная тенденция современного образования и описываются принципы, условия и перспективы ее развития. Компетенции, рассматриваемые в данной статье, включены в навыки 21 века – те, которые работодатели и исследователи в области образования признали наиболее важными для нашего общества: сотрудничество и общение, творчество и воображение, критическое мышление и решение проблем, цифровая грамотность, гражданственность, студенческие навыки, лидерство и личное развитие. Авторы ставят перед собой задачу определить, насколько новые компетенции вписываются в образовательные стандарты и программы. Также в статье рассматриваются конструкты, составляющие умения XXI века, и требования к современному образовательному процессу, формирующему эти компетенции. В быстро развивающемся мире, в котором мы живем, навыки, необходимые для достижения успеха, меняются с беспрецедентной скоростью. Это особенно справедливо в области педагогики, где преподаватели должны снабдить учащихся инструментами, необходимыми для процветания в 21 веке. Поскольку мы ориентируемся на постоянно растущее влияние технологий и эпохи цифровых технологий, крайне важно определить и расставить приоритеты в навыках, которые позволят учащимся стать критически мыслящими, эффективными коммуникаторами и учиться на протяжении всей жизни. В этой статье рассматриваются некоторые ключевые навыки, необходимые сегодня в педагогике, и дается представление о том, как преподаватели могут развивать их в своих классах.

**Ключевые слова:** навыки XXI века, современная педагогика, заинтересованные стороны, работодатели, глобализация, компетенции, образовательные программы, образовательные стандарты.

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As we progress further into the 21st century, the landscape of education is rapidly evolving. The proliferation of technology and the demands of the modern workforce have reshaped the skills students need to succeed. To prepare students for the challenges and opportunities of the digital age, it is essential for educators to modify their teaching

instructions, integrating 21st century skills into their pedagogy. This article explores the significance of these skills and determines the necessity to incorporate them into their teaching instructions.

New technologies, globalization and internationalization have changed society [1]. The results of education, which were sufficient for previous generations, for example, knowledge about some facts, are not enough to become successful in our time. Collaboration and communication, creativity and imagination, critical thinking and problem solving, digital literacy, citizenship, student leadership and personal development were recognized by employers and education researchers as the most important for the 21st century. The education system has changed the understanding of its goals and includes an increasingly wide range of skills in the curricula. Educational institutions take responsibility for both cognitive and socio-emotional students' development, realizing that they are inseparable from each other and should take place in the same space. Thus, the main international document adopted by the UN [2] defined the «17 Sustainable Development Goals» (SDGs) (2015), as well as cognitive, socio-emotional and behavioral learning outcomes.

In the last few years, an educational agenda has been relevant all over the world, aimed at moving from the traditional orientation of higher education to the formation of subject knowledge and skills to creating conditions for the development of modern key competencies (or skills) of the 21st century. Despite the different configurations of these skills in various models, the set of these skills itself remains quite stable. Thus, in order to remain in demand as a specialist in the era of high technologies and automation of a significant number of processes familiar to us, new skills and abilities are required.

The essence of the concept is as follows: the key skills that determined literacy in the industrial era were reading, writing and arithmetic. In the 21st century, the emphasis is shifting towards the ability to think critically, the ability to interact and communicate, and a creative approach to professional activity. Very soon, educational institutions will be forced to switch from the old, «industrial» curricula to a study system that will allow teaching personnel for the innovative economy and information society. Approaches to teaching, respectively, will also change – today, thanks to the Internet and information technologies, students of schools and universities have a wide access to a huge range of educational resources. Therefore, educators will turn from transmitters of knowledge into teachers-facilitators. Educational programs in the post-industrial era should be aimed at developing critical thinking, communication skills, creative ingenuity and interaction skills, because the most in demand in this era are the ability to build interpersonal relationships.

Researchers have developed frameworks and models to provide a comprehensive understanding of 21st century skills and guide their implementation in educational settings. One widely recognized framework is the «Partnership for 21st Century Skills» (P21) framework (2014) [3], which identifies four main categories - critical thinking and problem solving, communication, collaboration, and creativity and innovation - along with specific skills within each category. These frameworks help educators structure their instruction and assessment around these skills and provide a common language for discussing their integration.

The P21 Framework Definitions report [4] presented a new model in which educational outcomes that can be formed at all stages of learning are divided into three types: basic literacy, competence and character qualities. The central part of this model is occupied by the above mentioned 21st century skills, they were highlighted as the key and main ones.

A number of studies were also conducted to find out which competencies are the fundamental skills of the 21st century. It is these skills that the professional community focuses on, which puts them on the national educational agenda in various countries.

One of these studies was conducted in the countries of the Asia-Pacific region, which include the modern leaders of education — Hong Kong, South Korea, Singapore, Japan and Vietnam, which is rapidly rising in the world ranking of educational achievements [5]. The researchers studied the documents defining the educational policies and educational standards of these countries and identified the most common competencies, values, attitudes and other educational outcomes that should be formed in students. Among them, the first positions are occupied by collaboration and communication, creativity and imagination, critical thinking and problem solving, digital literacy, citizenship, student leadership and personal development.

A similar study, one of the latest and most extensive, was conducted in 152 countries. Research has explored pedagogical approaches that are effective in fostering the development of 21st century skills [6]. Inquiry-based learning, project-based learning, and problem-based learning have been widely researched in this regard. These student-centered approaches emphasize active engagement, critical thinking, collaboration, and real-world application of knowledge. Studies have shown that when students are actively involved in their learning process, they are more likely to develop and apply these skills effectively.

This study showed that most often in the documents defining the direction of education development and its content, the next key skills [7] were highlighted:

1. Collaboration and communication.

Collaboration is the process through which a goal is achieved or a task is completed by people working together. Giving students opportunities to communicate is not enough and is not the same thing as encouraging collaboration. Collaborative work happens when students participate proactively in a group with a shared purpose. Effective collaboration requires students to build positive working relationships, share their skills and knowledge, and engage in respectful dialogue. Effective communication and collaboration skills are essential in the digital age. Modern pedagogy should focus on equipping students with strong verbal, written, and digital communication skills.

Educators can implement collaborative projects, group discussions, and assignments that promote effective teamwork. By providing opportunities for students to practice and refine their communication skills, educators are preparing them to effectively convey their ideas, collaborate with others, and succeed in a highly interconnected world.

## 2. Creativity and imagination.

Imagination is our mind's ability to make pictures of something never seen or experienced. Language is a tool for creative and imaginative expression: connecting two ideas in a new way is a good example of creative thinking. Imagination and creative thinking are the foundations of innovation. In a rapidly changing world, the ability to think creatively and embrace innovation is highly valued. New age pedagogy should strive to nurture students' creativity by incorporating open-ended assignments, encouraging divergent thinking, and fostering an environment where ideas are welcomed and explored without fear of judgment. By fostering creativity and innovation, educators empower students to approach challenges with fresh perspectives and develop unique solutions.

## 3. Critical thinking and problem solving.

Learning to think critically is vital for the development of literacy and language skills. Students need to be taught how to think, not what to think, so they can make informed choices in life for themselves. Critical thinkers are able to reason and analyze information to generate solutions and solve problems. Therefore, the ability to think critically and tackle complex problems is a crucial skill in the 21st century. Updated pedagogy must prioritize the development of critical thinking skills, encouraging students to analyze information, evaluate different perspectives, and make informed decisions. Educators can foster critical thinking by incorporating inquiry-based learning techniques, promoting active discussion, and providing opportunities for students to engage in project-based assignments that require problem-solving.

## 4. Digital literacy.

Digital literacy is about how effectively we can use different technologies to find and evaluate information, and how well we communicate with others in digital environment. Digital literacy requires both cognitive and technical skills, such as the ability to create a professional online identity when we connect and interact with others online, as well as the ability to use different software, tools and devices. In the digital age, it is imperative for students to possess strong digital literacy skills. As this encompasses the ability to find, evaluate, and use information effectively and ethically. Educators must equip students with the skills to navigate digital platforms, critically assess online sources, and collaborate with others using digital tools. Emphasizing digital literacy ensures that students are well-prepared for the demands of the modern workforce, where technology is omnipresent.

## 5. Citizenship.

Citizenship involves understanding the values of a society: respect, tolerance, democracy and etc., as well as the skills and knowledge needed to participate as responsible, informed citizens. Taking responsibility for their actions is important for good citizenship locally and globally. In the 21st century we live in an interconnected world, and we need to think about the impact of the choices we make in our daily lives.

## 6. Student leadership and personal development.

More than ever, 21st century educators and students are encouraged to develop personal qualities that enable them to make good decisions and choices. When students value themselves and trust they are able to develop their skills, teaching and learning communities are successful. Encouraging activism and respect for the whole educational institute or community is essential – today's students are tomorrow's leaders. In an era characterized by constant change, adaptability and resilience are invaluable skills. So, pedagogy must prioritize teaching students how to embrace challenges, adapt to new situations, and bounce back from failures. By fostering a growth mindset and providing opportunities for students to take risks, educators can help students develop the resilience and adaptability they need to thrive in an ever-evolving world.

According to the results of the studies described above curricula should first accommodate the teaching of these skills within the framework of traditional disciplines, and then gradually move from the content of a particular subject to the development of skills and personal qualities of students. It will not be easy to immediately abandon the disciplinary-type curriculum that is familiar to everyone, so it is better to go to this gradually, first changing how and in what form these traditional disciplines are taught.

Moreover, measuring and evaluating 21st century skills pose significant challenges. Traditional assessments may not adequately capture these skills, as they often require students to demonstrate their abilities through real-world tasks and complex problem-solving scenarios. Researchers have focused on developing innovative assessment methods, such as performance-based assessments, rubrics, and portfolios that provide a more comprehensive understanding of students' development of these skills. This research helps educators and policymakers in designing reliable and valid assessments to evaluate students' progress in 21st century skills [8].

We realize that project-based and task-based approaches are really starting to displace traditional teaching methods. The concept of «learning to learn» should also be included here. We must teach learners the skills of self-education, self-study - for this, both students and educators themselves must be activated and rebuilt.

The changes that production has undergone have dramatically redirected the vector of development of society. And the education system should also move very quickly in this direction. Creativity, communication, critical thinking, of course, did not appear at all in the post-industrial era, but it was with their arrival that these qualities became vital, to about the same extent as reading, writing and arithmetic.

The scientists who conducted the research described above emphasize that a person's education should not be limited to «basic skills». In the 21st century, it is important to move from utilitarian industrial education to an integrated educational paradigm. The traditional paradigm distinguished education from other spheres of life, and covered only students in order to prepare them for the future life. The new paradigm is continuous - it involves lifelong learning for all people. Such an education system focuses not only on the transfer of knowledge and the development of skills, but also on supporting the formation of a person as a full-fledged agent in all spheres of his life [9].

Educators professional development plays a crucial role in effectively implementing 21st century skills in the classroom. Research has investigated the impact of various professional development programs on educators' knowledge, attitudes, and instructional practices related to these skills. Studies have highlighted the importance of ongoing and sustained professional development, opportunities for collaboration among educators, and supportive administrative leadership to effectively integrate these skills into classroom instructions [10]. By aligning teacher professional development with research-based strategies, educators can enhance their ability to nurture 21st century skills in students.

The skills considered are consistent, overlap and complement each other. They all lie in an environment that supports the cognitive development of students, and fill it with concrete content. This work showed that they can be successfully implemented in the educational process of a university. Moreover, the presented approaches are based on world experience. A significant part of them has been tested in domestic universities, and has been adapted to domestic practice. Nevertheless, they are innovative for most universities. Mastering new ways of organizing classrooms, as well as designing study programs of a new type requires time and methodological foundations.

Longitudinal studies that track students' development of 21st century skills over time have provided valuable insights into the long-term impact of integrating these skills into education. Such research helps determine the relationship between the development of these skills and students' academic achievement, post-secondary success, and overall well-being. Additionally, efficacy research has examined the effectiveness of interventions and programs aiming to enhance 21st century skills, providing evidence to guide educational policymakers, administrators, and educators in decision-making [11]. Until now, the education system in most countries of the world has encouraged students for how much they know, and, accordingly, teaching instructions has been aimed at accumulating knowledge.

This needs to change so pedagogy is more appropriate for the 21st century and involves teaching skills for collaboration and communication, creativity and imagination, critical thinking and problem solving, digital literacy, citizenship, student leadership and personal development.

The skills required for success in the 21st century are distinct from those of the past. In pedagogy, it is crucial to equip students with the skills they need to navigate the digital age, think critically, foster creativity, communicate effectively, collaborate with others, and adapt to new challenges. By prioritizing these skills, educators can prepare students to become lifelong students, ready to seize opportunities and succeed in the modern world.

Integrating 21st century skills into teaching instructions is essential for preparing students for success in the digital age. By modifying teaching instructions to incorporate digital literacy, critical thinking, collaboration, creativity, and adaptability, educators empower students to become lifelong students and thrive in an ever-changing world [12]. As educators adapt their pedagogy to meet the demands of the 21st century, they play a crucial role in shaping the future of their students and preparing them for the challenges and opportunities that lie ahead.

In conclusion, research on the implementation of 21st century skills in education encompasses various areas, ranging from frameworks and pedagogical approaches to assessment methods, teacher professional development, and longitudinal studies. By drawing on the findings of rigorous research, educators can make informed decisions and design effective strategies to equip students with the skills necessary for success in the rapidly changing world of the 21st century.

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