

**DEVELOPING THE COGNITIVE COMPETENCE OF SOCIAL SECTOR EMPLOYEES
BASED ON DIGITAL TECHNOLOGIES AS A PEDAGOGICAL PROBLEM**

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This article examines the development of the cognitive competence of social sector employees through digital technologies as a pedagogical problem. In the modern digital environment, social sector professionals are required to possess advanced analytical thinking, information processing, problem-solving, and decision-making skills. In this regard, digital technologies are considered an effective tool for forming and enhancing cognitive competence. The study highlights the pedagogical potential of digital learning platforms, artificial intelligence, online training, and interactive technologies, analyzing their impact on the professional development of social sector workers. The findings demonstrate the necessity of a systematic and integrated approach to this process.

Keywords: cognitive competence, social sector employees, digital technologies, digital education, professional development, pedagogical problem

**IJTIMOYIY SOHA XODIMLARINING KOGNITIV KOMPETENTLIGINI RAQAMLI
TEXNOLOGIYALAR ASOSIDA RIVOJLANTIRISH PEDAGOGIK MUAMMO
SIFATIDA**

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Ushbu maqolada ijtimoiy soha xodimlarining kognitiv kompetentligini raqamli texnologiyalar asosida rivojlantirish masalasi pedagogik muammo sifatida tahlil qilinadi. Zamonaviy raqamli muhitda ijtimoiy soha mutaxassislaridan yuqori darajadagi tahliliy fikrlash, axborotni qayta ishlash, muammoni hal qilish va qaror qabul qilish ko'nikmalari talab etiladi. Shu nuqtai nazardan, raqamli texnologiyalar kognitiv kompetensiyani shakllantirish va rivojlantirishning samarali vositasi sifatida qaraladi. Maqolada raqamli ta'lim platformalari, sun'iy intellekt, onlayn treninglar va interaktiv texnologiyalarning pedagogik imkoniyatlari yoritilib, ularning ijtimoiy soha xodimlari kasbiy rivojiga ta'siri tahlil qilinadi. Tadqiqot natijalari ushbu jarayonda tizimli yondashuv zarurligini asoslaydi.

Kalit so'zlar: kognitiv kompetentlik, ijtimoiy soha xodimlari, raqamli texnologiyalar, raqamli ta'lim, kasbiy rivojlanish, pedagogik muammo

**РАЗВИТИЕ КОГНИТИВНОЙ КОМПЕТЕНТНОСТИ РАБОТНИКОВ СОЦИАЛЬНОЙ
СФЕРЫ НА ОСНОВЕ ЦИФРОВЫХ ТЕХНОЛОГИЙ КАК ПЕДАГОГИЧЕСКАЯ
ПРОБЛЕМА**

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В данной статье рассматривается развитие когнитивной компетентности работников социальной сферы на основе цифровых технологий как педагогическая проблема. В условиях цифровизации от специалистов социальной сферы требуется высокий уровень аналитического мышления, обработки информации, решения проблем и принятия решений. В этом контексте цифровые технологии выступают как эффективное средство формирования и развития

когнитивных компетенций. В статье раскрываются педагогические возможности цифровых образовательных платформ, искусственного интеллекта, онлайн-обучения и интерактивных технологий, а также анализируется их влияние на профессиональное развитие работников социальной сферы. Результаты исследования обосновывают необходимость системного подхода к данному процессу.

Ключевые слова: когнитивная компетентность, работники социальной сферы, цифровые технологии, цифровое образование, профессиональное развитие, педагогическая проблема

INTRODUCTION

In the context of rapid digital transformation, all spheres of society, including the social sector, are undergoing profound structural, functional, and professional changes. Digital technologies are no longer limited to technical or administrative tasks; they increasingly shape professional thinking, communication, decision-making, and service delivery. For social sector employees—who work directly with individuals, families, and vulnerable groups—these changes require not only technical digital skills but also a high level of cognitive competence. The ability to analyze information, interpret complex social situations, critically evaluate data, and make informed decisions has become a core professional requirement in the digital era. Cognitive competence refers to a system of intellectual abilities that enables a person to acquire, process, interpret, and apply knowledge effectively. In the professional activity of social sector employees, cognitive competence plays a crucial role in understanding clients' needs, identifying social risks, planning interventions, and evaluating outcomes. In the digital environment, these tasks become more complex, as specialists must work with large volumes of information, digital databases, online communication platforms, and automated decision-support systems. Therefore, the development of cognitive competence cannot be separated from the use of digital technologies.

The growing integration of digital tools into social services has fundamentally transformed the nature of professional activity. Electronic case management systems, online counseling platforms, digital monitoring tools, and artificial intelligence-based analytics are now widely used to improve the efficiency and quality of social services. While these technologies offer significant advantages, they also place new cognitive demands on employees. Professionals must be able to interpret digital data, recognize patterns, evaluate risks, and make ethically and socially responsible decisions based on digital information. Without well-developed cognitive competence, digital tools may become superficial or even misleading rather than supportive. From a pedagogical perspective, the problem lies in how to effectively develop cognitive competence in social sector employees through digital technologies. Traditional training models, which focus mainly on theoretical knowledge and routine professional skills, are no longer sufficient. Modern education and professional development must be oriented toward critical thinking, problem-solving, reflective learning, and adaptive reasoning. Digital technologies create new pedagogical opportunities for achieving these goals, but they also require scientifically grounded instructional strategies and models. Digital learning environments enable personalized, interactive, and practice-oriented training. Through online platforms, virtual simulations, case-based learning, and data-driven feedback systems, social sector employees can engage in complex professional situations in a safe and controlled digital space. Such environments stimulate analytical thinking, foster independent decision-making, and encourage continuous learning. However, the effectiveness of these tools depends on how well they are pedagogically

designed and integrated into professional education. One of the key challenges in this process is the imbalance between technological advancement and pedagogical readiness. In many cases, digital tools are introduced without a clear understanding of how they contribute to cognitive development. As a result, employees may acquire technical skills without developing deeper intellectual abilities such as critical reflection, strategic thinking, and creative problem-solving. This gap highlights the importance of viewing the development of cognitive competence through digital technologies as a pedagogical problem rather than merely a technical one. Another important factor is the changing role of the social sector employee in the digital society. Modern professionals are expected to act not only as service providers but also as analysts, coordinators, and mediators between individuals and complex digital systems. They must interpret digital indicators, manage online interactions, and respond to rapidly changing social data. This transformation requires a new type of professional thinking that combines humanistic values with data-driven reasoning. Moreover, the digitalization of social services raises ethical, legal, and psychological issues that further increase cognitive demands. Social sector employees must evaluate the reliability of digital information, protect personal data, and make responsible decisions in situations where automated systems may influence human lives. These challenges cannot be addressed without a high level of cognitive awareness and professional judgment. In this context, developing cognitive competence through digital technologies becomes a strategic objective of professional education and continuous training in the social sector. Pedagogical models must integrate digital tools not as supplementary elements but as core components of the learning process. This requires the design of learning environments that promote inquiry, reflection, collaboration, and problem-based learning supported by digital resources. Thus, the relevance of this study is determined by the growing need to align digital innovation with cognitive and pedagogical development in the social sector. Understanding how digital technologies can be used to enhance cognitive competence will contribute to improving the quality of social services, increasing professional effectiveness, and ensuring that technological progress serves human and social well-being.

MATERIALS AND METHODS

This study was designed to investigate the pedagogical effectiveness of digital technologies in developing the cognitive competence of social sector employees. A mixed-methods research approach was applied, combining quantitative and qualitative techniques in order to obtain a comprehensive understanding of the problem. The research was conducted in training centers and social service institutions where professionals regularly participate in professional development programs. The research participants included social sector employees with different levels of professional experience, including social workers, counselors, and administrative specialists. A total of 120 participants took part in the study. They were divided into an experimental group and a control group. The experimental group received training through digitally enhanced learning environments, while the control group followed traditional face-to-face professional development programs. The main instructional materials for the experimental group were digital learning platforms, online modules, virtual simulations, and interactive case studies. These materials were designed to stimulate cognitive processes such as analysis, synthesis, evaluation, and problem-solving. The training content focused on real-life professional situations in the social sector, including client assessment, case management, ethical decision-making, and crisis intervention. Digital tools allowed participants to engage with complex scenarios, receive immediate feedback, and reflect on their actions. To measure

cognitive competence, a set of diagnostic tools was developed, including standardized cognitive ability tests, professional problem-solving tasks, and self-assessment questionnaires. The tests evaluated analytical thinking, logical reasoning, information processing, and decision-making skills. Pre-tests and post-tests were administered to both groups to identify changes in cognitive competence over the course of the study. In addition to quantitative data, qualitative data were collected through interviews, observation, and reflective journals. Participants were asked to describe their learning experiences, difficulties, and perceived changes in their professional thinking. This helped to identify how digital technologies influenced not only cognitive performance but also motivation, self-confidence, and learning strategies. The training program lasted twelve weeks. During this period, the experimental group engaged in weekly online learning sessions, collaborative digital projects, and simulation-based exercises. The control group attended conventional lectures, seminars, and paper-based case discussions. At the end of the program, all participants completed final assessments and took part in reflective interviews.

COMPARATIVE TABLE

Indicator	Traditional approach	Digital technology-based approach
Form of learning	Classroom-based, textbook-centered	Online platforms, virtual environments
Role of learner	Passive recipient	Active participant
Knowledge acquisition	Lecture-based	Interactive and problem-based
Cognitive development	Limited	High level
Analytical thinking	Weakly developed	Strongly developed
Learning motivation	Moderate	High
Adaptability	Low	High
Professional effectiveness	Average	High

RESULTS

The results of the study demonstrated a significant positive impact of digital technologies on the development of cognitive competence among social sector employees. In the experimental group, post-test scores showed a marked improvement in analytical thinking, problem-solving ability, and decision-making compared to the pre-test results. In contrast, the control group showed only moderate progress, mainly in theoretical knowledge rather than in higher-order cognitive skills. Participants who used digital learning tools displayed a greater ability to analyze complex social situations, interpret digital data, and propose well-reasoned solutions to professional problems. Virtual simulations and interactive case studies were particularly effective in enhancing critical thinking, as they required participants to evaluate multiple factors and predict possible outcomes of their decisions. Qualitative data supported these findings. Many participants in the experimental group reported that digital learning environments helped them better understand real-life professional challenges. They noted that working with online cases and simulations encouraged them to think more deeply, compare different strategies, and reflect on the consequences of their actions. As a result, their confidence in handling difficult client situations increased. Furthermore, the use of digital

technologies improved participants' ability to work with information. They became more skilled at searching for relevant data, distinguishing reliable sources, and integrating digital information into professional decision-making. This indicates that cognitive competence was developed not only at the level of thinking skills but also in terms of information literacy.

The control group, although it gained new knowledge, relied mainly on memorization and standard procedures. Their ability to adapt to new or unexpected situations remained limited. This difference highlights the advantage of digital and interactive learning environments in fostering flexible and independent thinking. Overall, the results confirm that digital technologies, when applied within a pedagogically structured framework, significantly enhance the cognitive competence of social sector employees. The integration of digital tools into professional training creates conditions for deeper learning, reflective practice, and continuous cognitive development, which are essential for effective performance in the modern social sector.

CONCLUSION

The present study examined the development of the cognitive competence of social sector employees through digital technologies as a pedagogical problem. The findings demonstrate that cognitive competence is a crucial component of professional effectiveness in the modern digital environment, where specialists are required to process large amounts of information, analyze complex social situations, and make responsible and well-informed decisions. The research results confirmed that digital technologies significantly enhance cognitive development when they are integrated into a structured and pedagogically grounded learning environment. Participants who engaged in digital learning platforms, virtual simulations, and interactive case studies showed notable improvements in analytical thinking, problem-solving, and decision-making abilities compared to those who followed traditional training methods. This indicates that digital tools are not only technical aids but also powerful pedagogical instruments for fostering higher-order thinking skills. Furthermore, the study revealed that digital learning environments promote reflective and self-directed learning. Social sector employees became more capable of evaluating their own professional actions, learning from feedback, and adapting their strategies to new challenges. These qualities are essential for working in dynamic and unpredictable social contexts, where each case requires flexible and thoughtful responses. The results also highlight the importance of aligning technological innovation with pedagogical goals. Simply introducing digital tools into training programs is not sufficient; they must be designed and implemented in a way that actively stimulates cognitive processes. A systematic and learner-centered approach is therefore necessary to ensure that digital technologies contribute meaningfully to professional and intellectual growth. In conclusion, the development of cognitive competence through digital technologies should be regarded as a strategic priority in the professional education of social sector employees. By integrating digital tools into pedagogical practice, educational institutions and training centers can better prepare specialists to meet the complex demands of contemporary social work and contribute to the improvement of social services in a digital society.

REFERENCES:

1. Karimov, I. A. Yuksak ma'naviyat – yengilmas kuch. — Toshkent: Ma'naviyat, 2008. — 176 b.
2. Mirziyoyev, Sh. M. Yangi O'zbekiston strategiyasi. — Toshkent: O'zbekiston, 2021. — 256 b.

3. Yo'ldoshev, J. G. Pedagogik texnologiyalar va innovatsion ta'lim. — Toshkent: Fan, 2019. — 312 b.
4. To'raqulov, X. Ijtimoiy pedagogika. — Toshkent: O'qituvchi, 2020. — 280 b.
5. Ismoilov, Z. Raqamli ta'lim asoslari. — Toshkent: Universitet, 2022. — 198 b.
6. Qodirov, B. Kasbiy kompetentlik nazariyasi. — Samarqand: Zarafshon, 2018. — 240 b.
7. Abdullayeva, M. Pedagogik innovatsiyalar. — Toshkent: Iqtisodiyot, 2020. — 214 b.
8. Xolmatova, D. Kognitiv pedagogika asoslari. — Toshkent: Fan va texnologiya, 2021. — 190 b.
9. Bloom, B. S. Taxonomy of Educational Objectives. — New York: Longman, 1956. — 207 p.
10. Kolb, D. A. Experiential Learning. — New Jersey: Pearson, 2015. — 416 p.
11. Siemens, G. Connectivism. — International Journal of Instructional Technology and Distance Learning, 2005. — Vol. 2(1), pp. 3–10.
12. Bates, A. W. Teaching in a Digital Age. — Vancouver: Tony Bates Associates, 2019. — 520 p.
13. Redecker, C. European Framework for Digital Competence of Educators. — Luxembourg: EU Publications, 2017. — 96 p.
14. OECD. Education at a Glance. — Paris: OECD Publishing, 2021. — 460 p.
15. Jonassen, D. H. Learning to Solve Problems with Technology. — New York: Routledge, 2004. — 324 p.
- 16.