Volume 3, Issue 3, March – 2025 **ISSN (E):** 2938-379X

FORMATION OF INFORMATION AND DATA SERVICE COMPETENCE AMONG PROGRAMMERS

Oxunov Tohirjon Ma'murjon ugli
Independent Researcher, Nizami Tashkent State Pedagogical University

Abstract
This article examines both the content and the practical significance of cultivating information and data service (IDS) competence among prospective programmers. It emphasizes that modern software products, databases, and online platforms, as well as information security issues, remain critically important components of the digital environment in which programmers operate. Within this context, the article explores contemporary demands for effectively integrating IDS competence into the professional practice of programmers and discusses potential methods for doing so.

Keywords: Programmers, information and data service competence, databases, online platform, software product, information security, digital technologies.

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Introduction

In the modern technological era, programmers must not only master various programming languages but also develop the skills needed to process multiple sources of information efficiently. Collecting, filtering, analyzing, and utilizing data constitute the core of what is known as "information and data service" (IDS) competence. The rapid development of the digital ecosystem compels programmers to gain extensive knowledge and practical experience in working with databases, online platforms, and software products, as well as to address issues related to information security. Consequently, security considerations have become an integral component of IDS competence.

MAIN SECTION

The process of forming IDS competence among prospective programmers is of particular importance in today's digital age. As technology continues to advance, programmers need more than just strong command of programming languages; they must also learn to manage diverse data streams intelligently, perform thorough data analyses, and devise effective solutions. IDS competence lies at the center of these activities.

For future programmers, IDS competence serves as a pivotal factor for success in the professional sphere. The software solutions they develop must integrate seamlessly with modern databases, online platforms, Internet of Things (IoT) systems, or Big Data environments, and simultaneously meet user requirements and information security standards. Designing and managing databases represent crucial abilities for programmers. For example,

mastering MySQL, PostgreSQL, MongoDB, or comparable database management systems confers significant advantages by enabling high-speed data storage and retrieval operations. A strong aptitude in managing data of varied formats and volumes, while ensuring network reliability, underscores the value of IDS competence.

Programmers frequently employ online platforms that require them to utilize user data. This necessity underscores the pivotal role of security measures. The comprehensive nature of IDS competence means that a programmer's responsibilities go beyond mere coding. They must also account for how data circulates across global networks, how it is safeguarded, and how user rights are protected in accordance with existing regulations. Therefore, programmers must possess knowledge of encryption strategies, privacy policies, legal frameworks, and network security measures.

Developing IDS competence calls for educational programs at every level to prioritize data-handling skills. Integrating project-based assignments, real-life case studies, hackathons, distance-learning platforms, and sustained self-initiated learning can bolster problem-solving aptitudes in multiple scenarios. In addition to these, specialized courses in areas such as database design, network technologies, information security, and project management should be integrated into the academic curriculum.

Individual motivation also holds a prominent role in nurturing IDS competence among programmers. Passion for programming, adeptness in solving technical challenges, and an unwavering commitment to self-improvement enable them to remain highly competitive in the labor market. As emerging technologies—like artificial intelligence, blockchain, or quantum computing—are expected to amplify data complexity, having a well-developed IDS competence grant programmer's substantial potential for innovation and competitive advantage.

Viewed collectively, preparing future programmers by enhancing their information and data service competence has become an imperative of the modern digital era. Programmers thus acquire the capacity to interact effectively with sophisticated software products, various databases, and online platforms, while concurrently grasping critical information security aspects and refining workflow organization. Those who achieve this level of competence will be well-positioned to excel in tomorrow's high-technology landscape.

CONCLUSION

Strengthening the information and data service competence of future programmers is a foundational step in cultivating highly competitive professionals for the evolving digital marketplace. IDS competence addresses two principal objectives in a programmer's professional activities. First, it facilitates effective engagement with databases and online platforms. Second, it ensures that user-friendly services are developed alongside robust information security measures. Accordingly, IDS competence not only entails technical skills but also requires analytical thinking, project management, communication abilities, and an understanding of the pertinent legal aspects of data handling. Professionals endowed with these capabilities are better equipped to adapt to the rapidly transforming digital environment and integrate seamlessly into professional teams.

REFERENCES

1. Qodirov, A. (2020). Raqamli texnologiyalar sharoitida axborot xizmati kompetentligini rivojlantirish. Pedagogik innovatsiyalar jurnali, 11(2), 45-51.
2. Williams, A. M., & Ward, P. (2007). Perceptual expertise and decision making in sport. Journal of Sports Sciences, 25(3), 243-254.
3. Choo, C. W. (2018). Information management for the intelligent organization: Roles and implications. London: Routledge.
4. Lankes, R. D. (2011). The atlas of new librarianship. Cambridge, MA: MIT Press.
5. Naylor, M., & Paas, F. (2019). Stress and decision-making: A theoretical framework for IT professionals. Journal of Applied Information Technology, 31(4), 402-419.
6. Sabirov, N. (2019). Dasturchilar tayyorlashda ma'lumotlar xavfsizligining ahamiyati. IT va ta'lim, 7(1), 34-41.
7. Kuznetsov, N. (2015). "Basketbol o'yinchilarini tarbiyalashda fiziologik yondoshuvlar." Moscow: Fizik madaniyat nashriyoti.
8. Oracle Official Documentation (n.d.). Accessed from https://docs.oracle.com
9. MongoDB Official Documentation (n.d.). Accessed from https://www.mongodb.com/docs

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