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## THE ROLE AND IMPORTANCE OF STUDENT INFORMATION AND ANALYTICAL COMPETENCE IN DIGITAL LEARNING ENVIRONMENT

Mallaboyev Nosirjon Murodullayevich  
Dotsent Namangan davlat texnika universiteti

Imamova Zulxumor Alisherovna,  
O'qituvchi, Uchqo'rg'on sanoat va texnologiya texnikumi



### Abstract

This article covers the place and significance of the formation of information and analytical competence of students in the context of digital learning environment. It scientifically analyzes the issues of developing students' skills in searching, sorting, analyzing and effective use of information in the educational process organized on the basis of digital technologies. The article substantiates the role of information and analytical competence in improving students' independent thinking, problem-solving skills and professional training in the modern education system. The article also considers pedagogical possibilities and effective methods of developing this competency in the digital learning environment.

**Keywords:** Digital learning environment, information and analytical competence, information culture, information analysis, information search and processing, digital technologies, information and communication technologies (ICT), independent learning, critical thinking, digital literacy, innovative learning, competency approach.

### Introduction

Today, the digital transformation of society poses new requirements and tasks for the education system. Due to the sharp increase in the flow of information,

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the accelerated development of digital technologies and the rapid renewal of knowledge, it is not enough for students to acquire ready-made knowledge alone. Therefore, in the system of higher education it is important to develop the skills of students independent search, analysis, evaluation and effective use of information. In this process, **information and analytical competence** is manifested as one of the main professional and personal competencies.

Information and analytical competence is an integrative competence, which expresses a person's ability to critically analyze the information received from various information sources, to sort, systematize, process and apply it in practical activities. This competency requires an inseparable combination of knowledge, skills, qualifications and personal qualities. The student's information and analytical competence includes the following components:


- skills of searching and selecting information;
- be able to assess the reliability and relevance of information;
- analytical and logical thinking;
- information processing and visualization skills;
- Culture of effective and responsible use of information.

Digital learning environment is an integrated learning space developed by electronic resources, digital platforms, distance learning technologies and interactive tools. Such an environment provides ample opportunities for the development of students' information and analytical competence.

In a Digital Learning Environment:

- fast and comprehensive access to information resources;
- develop analytical thinking through interactive and problem assignments;
- independent and collaborative forms of education are supported;
- the opportunities for students to form an individual educational trajectory are expanded.

In the context of digital education, information and analytical competence plays an important role in students' academic activities. First of all, this competency increases the readiness of students for independent knowledge. The student analyzes, compares and draws independent conclusions, not accepting the information in its ready state. Second, information-analytical competency

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develops critical thinking, which enhances students' ability to identify inaccurate, false, or manipulative information. Thirdly, this competence is important in the future professional activity of students and serves their formation as a competitive specialist. In the modern labor market, there is a great need for specialists who can effectively work with information, make quick decisions and analyze problems.

The development of information and analytical competence in students is carried out effectively by the following pedagogical approaches:

- the use of interactive teaching methods (discussion, cluster, mental attack);
- introduction of problem-based and project-based education;
- widespread use of digital learning platforms and electronic resources;
- Stimulation of independent learning and reflexive activity.

One of the priority areas of the modern education system is the development of students' information and analytical competence in the digital learning environment. This competence ensures effective organization of academic and professional activity of students, development of critical thinking and successful adaptation in the conditions of digital society. In this regard, special attention should be paid to the formation of information and analytical competence through the effective use of the digital learning environment in higher education institutions.

Information and analytical competence is considered as a complex of competencies that form the ability of students and specialists to work effectively in a digital society. This competency encompasses several key areas.



**1. Digital competence.** Digital competence (digital literacy) encompasses information and information management skills, online communication and collaboration, digital content creation, as well as information security and problem solving skills. In modern education, digital competency is manifested as a student's ability to use digital tools critically, responsibly and effectively. Since 2006, the European Union has recognised digital competence as one of the Eight core competencies of continuing education and professional development.

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**2. Information and analytical competence specific to the specialty.** This competence refers to the ability to master and effectively use technologies related to a particular profession. This includes skills in 3D printers, CAD/SAPR software, robotics and other advanced technology management, maintenance and application. Specialty-specific competence is not limited to the use of technical means, but also encompasses the possibility of their improvement and the development of innovative solutions.

**3. Information and analytical competence for students.** For students, this competency includes high levels of information processing, analyzing, and new knowledge generation skills. Students should strive not only to use existing information and communication technologies, but also to improve them, to innovate and to create new technologies. Online platforms and services that are widely used in organizing virtual learning environments today serve as effective e-learning resources. For example, interactive platforms based on video conferencing include **Zoom, Google Meet, Microsoft Teams, Webinar.fm, ClickMeeting, WebRoom, MyOwnConference, Skype, Google Classroom, Canvas Instructure, and Moodle Cloud**. There's also an opportunity to create interactive assignments, games, and presentations using various online apps within the Google ecosystem. Through these tools, students will have access to quizzes, tests, automated feedback and educational activities. For quick communication, instant messengers such as **WhatsApp, Telegram, Viber, Instagram, Facebook and Twitter** are widely used. In particular, the ability to register and exchange information through QR codes or chatbots is widely introduced in the educational process. The main features of the distance learning process include:

1. **Efficiency** is an opportunity to improve the quality of the educational process through the use of modern software and hardware.
2. **Convenience and openness** — the participants of the training process will have the opportunity to communicate effectively remotely and from anywhere.
3. **Flexibility and selectivity** — students have the opportunity to choose their convenient time and form of study.

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4. **Psychological comfort** — in the process of long-distance communication, subjective factors of assessment are reduced and the level of stress decreases.

5. **Opportunities for knowledge exchange** — the exchange of experience and the rapid dissemination of best pedagogical practices will be created through the formation of virtual professional communities.

Here are the main benefits of the digitalization process:

- **independence** — students develop skills of independent learning and the desire to acquire knowledge through digital competencies;
- **the possibility of success** - the student can achieve positive results in his educational activities even without excessive supervision of the teacher;
- **reducing paper document circulation** - the transfer of training materials to electronic format will save resources and increase efficiency;
- **Optimization of the teacher's activity** - the teacher acts as a more directing and methodological entity, and students have the opportunity to gain independent knowledge through digital means;
- **adaptation to future technologies** — in the conditions of constant development of the digital environment, the ability of educational subjects to quickly adapt to technological changes is formed.

The introduction of digital technologies into the education system offers a number of advantages, but it can also create some pedagogical, psychological and social problems. Therefore, in the process of developing an information and educational environment, it is important to consider not only the capabilities of technologies but also their limitations. Since this system is often based on new and not fully implemented technologies, it will be difficult to guarantee their effectiveness absolutely. E-learning resources often cannot fully replace the elements of direct emotional experience and live pedagogical dialogue. The lack of an emotional component in the educational process can adversely affect the effectiveness of the perception of educational material. Psychological research shows that the use of color combinations, visual reminders and graphic elements helps to improve the process of remembering information and develop creative thinking. With the expansion of the digital environment, there is also a risk of decreased mental activity. Global information networks and search systems can

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limit students' independent thinking process to a certain extent, as quick access to ready-made information can hinder the development of critical and creative thinking.

Also, the problem of reduced social dialogue in the digital learning environment can be observed. Students may lose the opportunity to interact face-to-face in a virtual environment, which may lead to a slowdown in the process of social integration. Educational institutions are an important space that not only transmits knowledge, but also supports the process of socialization of students. Therefore, it is unlikely that excessive use of digital technologies will adversely affect the social development of the individual.

Prolonged use of a computer screen can lead to eye strain, visual system fatigue, as well as decreased ability to focus. In addition, working in excess of the norm with digital devices introduces a risk of adversely affecting the physiological functions of the fingers, joints and muscular system. The development of digital learning systems is also associated with the large-scale collection of personal information. Students' academic activities can be monitored via digital platforms that address the issues of information security, protection of personal data, and maintaining independence in the academic process.

In the future, the further introduction of digital technologies may automate some functions of the education process or transfer them to robotic systems. However, artificial intelligence and robotic technologies cannot fully replace unique human characteristics, such as empathy, creative thinking, and emotional communication. In this context, the introduction of digital technologies in the education system should pay special attention to the issues of human health, physical development and social activity. The ideal education model should be based on the harmonious integration of digital technologies and the pedagogical process. At the same time, digital tools serve as a factor that simplifies and expands the process of learning, while the teacher retains his role as a guide, counselor and motivational supporter.

At the same time, in the process of introducing educational technologies, it is important to ensure that they do not harm the physical, psychological and social

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development of students, as well as the use of the digital environment in a normative and pedagogical manner.

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