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# Methodological Approaches and Requirements for Organizing Digital Education in Higher Education Institutions

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**Abstract:** This article explores the methodological approaches aimed at shaping the requirements for organizing digital education in higher education based on activity-centered principles. To achieve this, the process of digital education is examined through the lens of methodological approaches, with a focus on identifying its organizational features and core requirements.

**Keywords:** Digital education, methodological approaches, activity-based approach, process-based approach, resource-based approach, phenomenological approach.

**Introduction:** The emergence of the information society's educational paradigm has significantly increased the relevance of digital education in higher education. According to several experts, the rapid development of digital learning in Uzbekistan has marked a turning point in enhancing interest in this form of instruction and in its practical integration into educational systems. By analyzing the current practices of implementing digital education in higher education, three key interaction models between the actors of the educational process have been identified: distance learning, blended learning, and open education [1; 2].

Table 1 presents the characteristics of the interaction forms among actors in the learning process based on different models of organizing digital education. The lack of clearly defined requirements for the use of digital education in higher education raises urgent questions for educators on how to effectively organize the digital

learning process to achieve optimal outcomes.

This article attempts to determine the organizational features of digital education and to shape the requirements for its implementation in higher education from the perspective of activity-based methodological approaches.

**Literature Review**

The pedagogical foundations of informatizing education and integrating modern information and communication technologies, the creation and use of digital learning environments, and the development and application of electronic educational resources have been studied by scholars such as A. Abduqodirov, M. Aripov, U. Begimqulov, R. Boqiev, F. Zakirova, M. Mamarajabov, S. Tursunov, M. Fayzieva, J. Hamidov, and F. Ghaffarov.

**METHODOLOGY**

The methodology of this article is based on the analysis of both scientific and increasingly widespread practical sources. It focuses on organizing the educational process within the digital learning environment, considering the growing demands on modern educational systems.

The study also incorporates various methods, including analysis of innovative technologies and tools used in digital instruction, integration of digital technologies into the learning process, changes in teaching methods and strategies, analysis of pedagogical requirements, review of development programs and manuals for digital environments, scientific generalization of web tools, and expert interviews on the topic.

**RESULTS**

**Table 1**

***Forms of interaction among actors in the educational process***

| Model of Organizing Digital Education | Forms of Interaction Among Educational Process Participants |
|---|---|
| Distance Learning | The interaction between the student and the instructor is either targeted, indirect, or entirely non-direct. The primary focus is on the student's engagement with educational resources and self-directed learning. |
| Blended Learning | Active interaction among all participants in the educational process. Interactive communication predominates, both in-person and within the electronic information-educational environment. |
| Open Learning | Student interaction with an advising instructor or teacher occurs in the form of consultations aimed at developing a personalized learning strategy (study plan, course schedule, type of support) aligned with the student's needs and interests. |

**Activity-Based Approach**

The concept of "learning through activity" was introduced by American scholar John Dewey. The core principles of his system include: considering students' interests; learning through thinking and doing; acquiring knowledge by overcoming difficulties; and encouraging free creative work and collaboration [6].

Figure 1 illustrates a digital education model based on the activity-based approach.

In this model, the primary actors in the digital learning process are the student and the teacher. The teacher aims to enhance the student's independent cognitive engagement. The teacher's role in an activity-based approach is not to simply "transfer knowledge," but to design, organize, and manage the learning process.

From the perspective of this approach, the student's role involves understanding learning objectives, solving tasks assigned by the instructor, and taking responsibility for the outcomes of their learning activity.

The learning process within the activity framework consists of the following stages:

1. Defining the learning task
2. Discovery of new knowledge by students
3. Initial defense (presentation and justification of learning outcomes)
4. Self-management and self-assessment

When implementing digital education through this approach, the teacher must ensure the presence of a mandatory feedback mechanism. This includes evaluating learning outcomes through assessments, tests, forums, webinars, and other tools that structure and support student engagement.

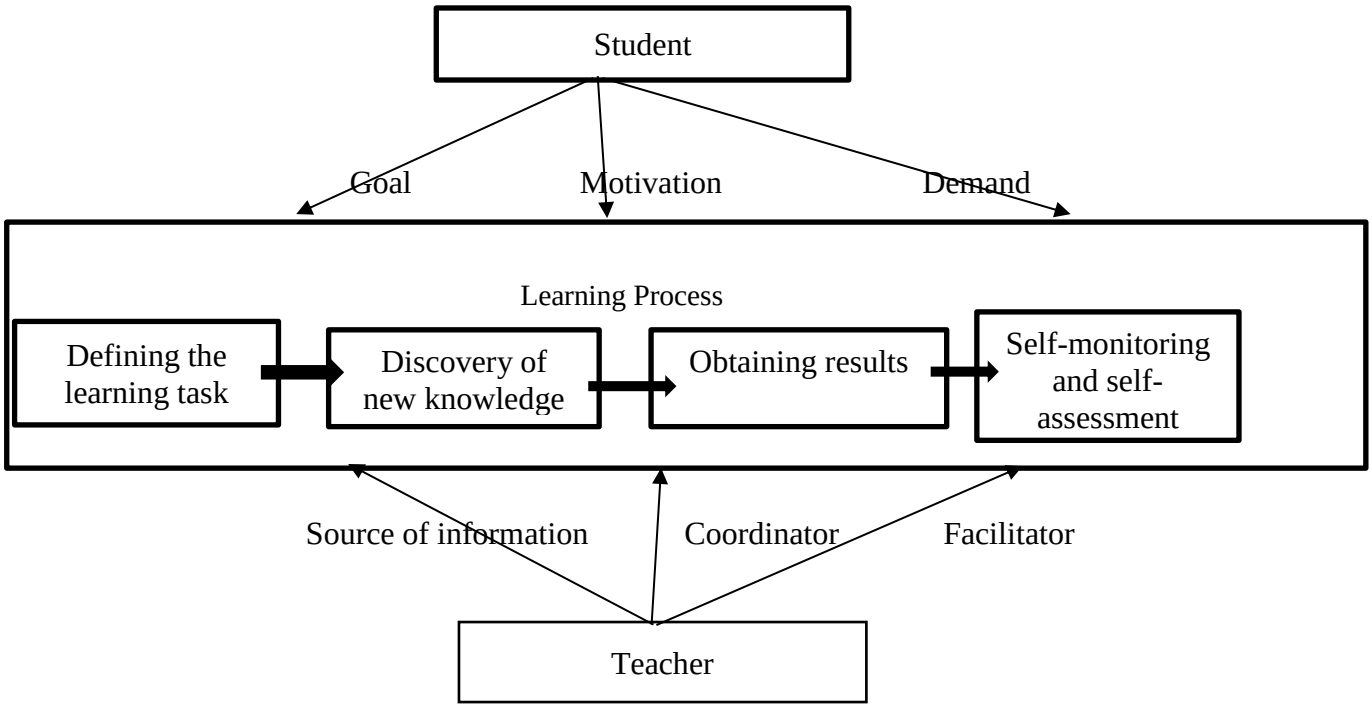



**Figure 1. A Digital Education Model Based on the Activity-Based Approach**

The teacher no longer functions solely as a source of information but rather as the organizer and coordinator of students' learning activities. The learning process can be viewed as a sequence of steps: accepting a task, completing it within the provided digital environment, receiving guidance, submitting a response, receiving evaluation (review), and then being assigned a new task.

In this context, digital education demands special attention to digital learning resources. When developing the structure and content of such resources [4], the following principles must be considered:

- Modularity: Educational material should be presented in modules—each with minimal volume but logically interconnected content.
- Completeness: Each module must include essential components such as theory, tests, review questions, and examples.
- Clarity: Wherever possible, modules should be supplemented with illustrative materials to aid understanding.

**Table 2. Key Requirements for Organizing Digital Education Based on the Activity-Based Approach**

| Approach | Requirements for Organizing Digital Education |
|---|---|
| Activity-Based | - The teacher acts as a facilitator and coordinator of the learning process (organizing independent work with self-assessment)<br>- Requirements for digital learning resources (principles of modularity, completeness, and clarity)<br>- Mandatory provision of feedback by the teacher to students (reflective learning activity) |

**Process-Based Approach**

The foundation of the process-based approach was laid by A. Fayol, often referred to as the "father of management." He identified the core functions of management as forecasting, planning, organizing, commanding, coordinating, and controlling.

In the context of digital education, the process-based approach implies that each educational process involves multiple stakeholders. These stakeholders may include: students, their parents, teaching staff, administrative and management personnel, academic and support staff, and employers.

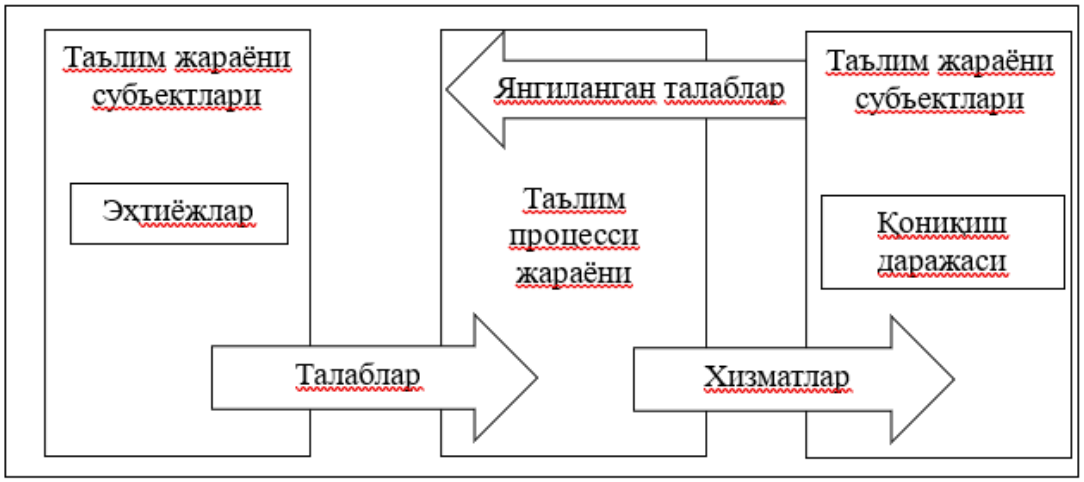
Thus, from the perspective of the process-based approach (see Figure 2), digital education can be viewed as a set of interconnected processes. The management of educational activity is, in turn, based on the management of these processes. Each process has its own goal, which serves as the criterion for its efficiency and effectiveness.

Identifying the needs of all educational stakeholders is based on analyzing data formed as responses to questions, opinions, and forecasts regarding the

intended educational process. The resulting set of identified needs forms the basis for the requirements in planning and managing the learning process.

Stakeholders' demands serve as input data for developing educational programs, curricula, course types, schedules, and other instructional planning components.

The parameters and indicators resulting from the planning and implementation of the educational process provide a foundation for monitoring the quality of education and evaluating the achievement of outcomes and stakeholder satisfaction with the process.




**2-расм. Жараён ёндашувига асосланган рақамли таълим схемаси**

Ўқув жараёнидан қониқиш унинг субъектларининг тахминларини ва ўқув жараёнини лойиҳалаш босқичида режалаштирилган ўқув жараёни параметрларини ҳақиқий натижалар ва кўрсаткичлар билан таққослаш орқали ўлчанади. Кейинчалик, назорат ҳаракатлари меъёрий-ҳуқуқий базани, сифат стандартларини, ресурсларни, дизайн кўрсаткичларини, ўқув жараёнларини ва сифатни назорат қилиш ва бошқариш усулларини доимий равишда такомиллаштириш учун ишлатилиши мумкин бўлган фикрлар шаклида ишлаб чиқилади.

3-жадвалда жараён ёндашуви асосида рақамли таълимни ташкил этишнинг асосий талаблари келтирилган.

**3-жадвал**

**Жараён ёндашуви асосида рақамли таълимни ташкил этишга қўйиладиган асосий талаблар**

| Ёндашув | Рақамли таълимни ташкил этишга қўйиладиган талаблар |
|---|---|
| Жараён | - Рақамли таълимни унинг ўзаро боғлиқ таркибий қисмларининг узлуксиз ишлаш жараёни сифатида тақдим етиш.<br>— Рақамли таълимнинг барча таркибий ва функционал таркибий қисмлари фаолиятини умумий мақсадга – жамият, давлат ва шахснинг таълим эҳтиёжларини қондиришга сифатли эришишга йўналтириш. |

Ресурсларга асосланган ёндашув. Менежментдаги ресурс ёндашуви ташкилотнинг бозор позицияси муассасанинг моддий ва номоддий ресурслари ва уларни бошқариш комбинациясига боғлиқ деган фикрга асосланади. Ресурс ёндашувининг асосини инглиз иқтисодчиси Э. Пенроузнинг "Фирма ўсиши назарияси" асари айтган.

Ресурс ёндашуви доирасида рақамли таълим жараёнини кўриб чиқишда уни юқори сифатли ўқув жараёнини амалга оширишнинг ажралмас шартини ташкил этувчи ўзаро боғлиқ ресурслар тизими сифатида кўрсатиш мумкин. Ресурслар – бу моддий-техник база, кадрлар ва ахборот ресурсларининг комбинацияси. 3-расмда ресурс ёндашуви доирасида тақдим этилган рақамли таълим модели кўрсатилган.

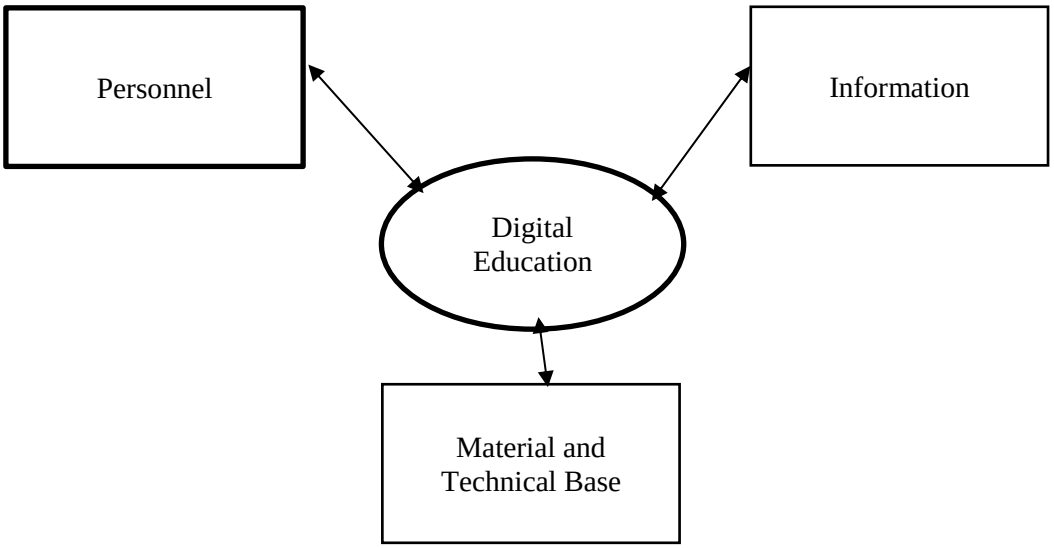



**Figure 3. Digital Education Model Based on the Resource-Based Approach**

Human Resources – This includes specially trained teachers, administrative staff, and other categories of personnel involved in digital education. In ensuring high-quality digital education, the role of tutors is particularly important, as they provide direct support and guidance to learners.

Information Resources – These consist of instructional materials, textbooks, electronic course packages for each subject, academic programs, curricula, the digital learning environment, and more. Information resources that support the digital learning process must meet a range of criteria aligned with the specific characteristics of the educational process.

Material Resources – These include the physical and technical infrastructure, technological support systems, and general or specialized software tools.

**Table 4.**

**Core Requirements for Organizing Digital Education Based on the Resource-Based Approach**

| Approach | Requirements for Organizing Digital Education |
|---|---|
| **Resource-Based** | - Digital education requires an electronic information and learning environment.<br>- Availability of an internet browser and internet connectivity.<br>- Availability of high-quality digital learning resources.<br>- Development of teacher competencies in the field of digital education. |

Students must actively engage with the information environment during the learning process. It is the responsibility of teachers, who organize the educational process and enrich the learning environment with digital instructional materials, to provide students with the knowledge and access to this environment.

## CONCLUSION

The digital transformation in education marks a new stage in the development of teaching and learning practices that define the trends of the modern educational process. To further enhance digital education, a global approach is required—one that takes into account both emerging opportunities and existing risks.

The successful implementation of digital education's core objectives depends not only on individual educational institutions, teachers, companies, and their staff, but also on the active participation of students, parents, and society at large.

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