



RELEVANCE OF DEVELOPING STUDENTS' SELF-PREPARATION IN DIGITAL EDUCATION CONDITIONS

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Abstract

The transformation of higher education through digitalization has heightened the importance of students' ability to engage in effective self-preparation. This article examines the pedagogical and didactic foundations necessary to foster self-directed learning in digital environments. It emphasizes the development of transversal competencies—such as critical thinking, collaboration, and communication—and transformative competencies, including adaptability, self-reflection, and lifelong learning orientation. These competencies are essential for training T-shaped professionals capable of navigating the demands of modern digital education. The article argues for the integration of intentional instructional strategies and support systems to help students develop autonomy, motivation, and strategic learning skills in independent study.

Keywords: Self-preparation, digital education, independent learning, transversal competencies, transformative competencies, T-shaped professionals.

Introduction

The global shift toward digitalization has profoundly impacted the educational landscape, transforming traditional teaching and learning processes[1]. With the proliferation of online platforms, virtual classrooms, and asynchronous learning tools, students are increasingly expected to take greater responsibility for their own



learning[2]. In this context, the development of effective self-preparation skills has become more crucial than ever.

Self-preparation refers to a learner's ability to independently organize, manage, and execute their educational activities without constant external guidance. In digital learning environments, where physical supervision is minimal and autonomy is heightened, students must cultivate competencies such as digital literacy, self-discipline, and time management to ensure academic success.

Despite the increasing availability of digital resources, many students struggle to adapt to the demands of independent study. This gap underscores the need to systematize the development of self-preparation as a core educational goal. Furthermore, the role of educators has shifted from knowledge transmitters to facilitators of independent learning, highlighting the importance of pedagogical strategies that promote student's self-preparation[3].

Methods

This study was conducted under the theme “Improving the software and didactic provision for developing students' self-preparation in digital education conditions.” A mixed-methods design was used to examine how second-year undergraduate students cultivate self-preparation skills and transversal and transformative competencies essential for independent learning.

Participants. The empirical research involved 446 second-year students from three universities in Uzbekistan:

- National Pedagogical University of Uzbekistan (224 students)
- Kokand State University (100 students)
- Uzbekistan-Finland Pedagogical Institute (122 students)

Stratified sampling ensured diverse representation across faculties and academic programs.

Data Collection:

- Surveys and Questionnaires assessed students' attitudes toward independent learning, motivation, time management, and challenges faced in digital environments.
- Pedagogical Diagnostic Tests measured students' abilities to plan, organize, and engage with learning materials effectively.



Structured Interviews gathered qualitative insights into students' experiences with self-preparation and the development of transversal and transformative skills. The instruments allowed multiple responses to capture the multifaceted challenges students face.

Research Focus. The study centered on evaluating students':

- Capacity to independently plan and manage learning activities
- Ability to search, evaluate, and utilize information effectively
- Strategies to maintain motivation and adapt to autonomous digital learning
- Development of transversal competencies like critical thinking and collaboration
- Growth of transformative competencies including adaptability and reflective learning

Research Findings and Discussion

The study revealed a complex picture of students' self-preparation capabilities in digital education contexts. A significant proportion of students encounter barriers that hinder their autonomous learning. For instance, 59.8% identified insufficient access to digital resources as a major obstacle, while 48.9% reported difficulties managing their time effectively. Furthermore, 17.4% highlighted challenges with sustaining internal motivation, emphasizing the emotional dimension of independent study.

When examining students' abilities to find and process information independently, the data showed that while some students consistently succeed, many struggle. Only 18.5% consistently find supplementary materials effectively, with nearly half reporting occasional or frequent difficulties. This indicates a critical need to support students in developing stronger transversal skills related to information literacy and strategic learning.

In addition, students expressed needs for assistance in areas such as time management (35.9%), maintaining focus (32.6%), selecting appropriate learning strategies (29.3%), and motivation (13%). These findings highlight the diverse and individualized nature of the support required to foster effective self-preparation.

Only 16.3% of students reported no difficulty with acquiring new knowledge independently, whereas 65.2% faced occasional challenges and 14.1% required continuous support. This variation underscores the importance of tailored



educational interventions to develop self-regulatory and adaptive skills, which are at the core of transformative competencies.

Students also tend to rely heavily on external help: 63% use internet resources, 56.5% seek peer support, and 35.9% turn to instructors, while only 21.7% attempt to resolve issues independently. This reliance points to a gap in cultivating academic autonomy and confidence, reinforcing the need for strategies that empower students as active, self-directed learners.

Collectively, these results demonstrate that fostering students' self-preparation through the development of transversal and transformative competencies is essential. Educational programs must go beyond delivering content and instead provide structured support and resources that enable students to become adaptable, reflective, and motivated learners—qualities fundamental to becoming effective T-shaped professionals in today's digital education landscape.

Conclusion

The rapid development of digital education requires a fundamental shift in how students prepare themselves for learning. Effective self-preparation has become a cornerstone skill, enabling learners to navigate complex digital environments with greater autonomy and responsibility. The challenges related to time management, resource accessibility, and sustaining motivation reveal the critical need for strengthening students' abilities to organize and regulate their independent learning processes.

At the heart of successful self-preparation lies the development of transversal competencies—such as critical thinking, communication, collaboration, and problem-solving—that transcend disciplinary boundaries and are essential in digital and real-world contexts. Equally important are transformative competencies, which enable students to adapt to change, reflect critically on their learning experiences, and engage meaningfully with evolving societal demands.

To cultivate these competencies, educational programs must integrate tailored didactic and programmatic supports that empower students to become T-shaped professionals—possessing both deep expertise in their fields and broad skills that foster innovation and lifelong learning.

Thus, reinforcing students' self-preparation through comprehensive strategies focused on transversal and transformative competencies is imperative for preparing



adaptable, self-regulated learners capable of thriving in the dynamic landscape of digital education.

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