Research Article

THE STUDY OF TEACHING APPLIED DECORATIVE ARTS IN HIGHER EDUCATION INSTITUTIONS THROUGH SOFTWARE SOLUTIONS: A REVIEW OF METHODOLOGICAL LITERATURE

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ABSTRACT

This article discusses the challenges of teaching applied decorative arts through software tools in higher education institutions. It examines the degree to which pedagogical, psychological, and methodological literature has studied these challenges and analyzes the current state of the subject within the higher education system. The paper emphasizes the importance of using digital resources and educational technologies to enhance learning outcomes, improve teaching quality, and align with international standards.

KEYWORDS

Didactic, experiment, abstract, synthesis, navigation, hypertext, visual, illustration, multimedia, content, digest, virtual, interactive, verbal adaptation, animation, individual, differentiated.

INTRODUCTION

Throughout the centuries, applied decorative arts have been a vital part of Uzbekistan's cultural heritage, representing one of the most vibrant and prominent aspects of its artistic traditions. The artistic styles that flourished in this region are known worldwide for their uniqueness and unparalleled beauty. The roots of Uzbek applied decorative arts trace back to the early stages of human history, providing evidence of their origin in primitive societies. Excavations have revealed artifacts demonstrating that the practice of creating artistic objects through craftsmanship began as early as the Stone Age and has continued to develop over the centuries. Today, this artistic heritage has evolved into a subject taught in higher education institutions, preserving its historical significance.

The successful integration of interactive, intellectual, and software-based teaching methods in education is proving effective in both foreign and Commonwealth countries. Digital textbooks and educational manuals

are now recognized as essential tools in the teaching process.

In developed countries, software applications such as CourseLab, iSpring, AutoPlay, Automax, and Adobe Dreamweaver are used to enhance the teaching of art subjects, foster innovation, and improve the learning experience. Increasing attention to scientific and technological advancements has led to the widespread use of modern technologies in the arts. As a result, software solutions, electronic textbooks, and creative technologies are becoming integral to teaching. Educational institutions today are equipped with the latest software, multimedia content, virtual exhibitions, and other interactive tools.

As technological innovations continue to become an essential part of daily life, their integration into the learning process has become inevitable. Gadgets and other advanced technologies are evolving year by year, becoming inseparable from modern living. It is undeniable that enhancing the teaching process with these innovative tools makes learning more engaging and dynamic. Educators now regularly incorporate software tools and electronic textbooks into their lessons, recognizing the advantages these technologies provide.

The Role of Digital Textbooks and Educational Software

Digital textbooks and manuals serve as specialized tools or software applications that replace traditional paper-based books in the educational process. However, the concept of an e-book varies across different sources. Some define it simply as the electronic version of a printed book, while others describe it as a comprehensive system that includes multimedia content and interactive elements for monitoring students' progress. Many of the latest digital textbooks are designed with visual content to make them more engaging. Teachers consistently report that students find these resources easy to use and that their interest and motivation increase when interacting with digital materials, both at school and at home.

The theoretical and practical aspects of becoming a skilled professional through teaching with software products, electronic textbooks, and manuals have always been essential. Our ancestors also emphasized training the younger generation in crafts, educating them within the master-apprentice system, and raising competent, well-mannered individuals who serve the progress of the nation. Many foreign scholars have provided valuable insights into this critical issue in their research. Scholars such as Matthew D. Barton, August Namuth, Bruce Chase, Atiyah Curmally, A. Nurwijayanti, Budiyono, L. Fitriana, Lee Choon-Sig, A.V. Kaysina, and M. Belousov highlighted that these electronic materials enable students to develop professional competencies.

In recent years, our country has been working towards enhancing the efficiency of educational processes at higher education institutions by aligning them with international education standards, ensuring the quality and competitiveness of personnel training, and developing effective methods for implementing information and communication technologies (ICT). Additionally, the rapid integration of new-generation educational literature, created with virtual and multimedia technologies, into the learning process is gaining momentum. The prioritized tasks in this regard include: "further improving the continuous education system, constructing educational institutions, strengthening their infrastructure through modern teaching and laboratory equipment, computer technologies, and instructional manuals, and promoting scientific research and innovation activities by creating effective mechanisms for implementing

scientific and innovative achievements in practice" [3]. These efforts expand the pedagogical potential of creating and applying new-generation software products and electronic educational literature in training future teachers at higher education institutions, particularly given the current global changes.

Moreover, prominent scholars and researchers have noted the emergence of terms such as "software for electronic computing machines," "state registry of software products," "interactive educational complexes," "interactive teaching tools," and "interactive electronic textbooks and manuals" with the active introduction of interactive education into the learning process [7; p.5, 8; p.5, 9; p.6].

Various scholars in our country have addressed the issues related to the development of methods and technologies for creating electronic educational literature and their wide application in the education system. Scholars such as F.J. Tokhirov, M.Z. Qambarov, I.I. Umirov, Kh.A. Umarov, A.A. Iskhaqov, M.A. Tursunov, G.V. Sharapova, M.S. Usmonov, S.G. Siddiqova, J.Kh. Donaeva, Kh.Kh. Muratov, E.A. Mo'minov, and G.A. Botirbekova have explored these topics in their works. For example, F.J. Tokhirov focused on enhancing students' algorithmic thinking in programming at higher education institutions [4; p.6]; M.Z. Qambarov studied the development of professional competence in future engineers under conditions of informatization of education [5; p.5]; I.I. Umirov worked on developing technological competence in students using electronic educational tools [6; p.6]; and Kh.Kh. Muratov examined the development of the educational environment through electronic resources and multimedia teaching tools [12; p.1132].

Several scholars, including G.A. Botirbekova [13; p.799], Kh.Kh. Muratov [11; p.21], F.M. Tadzhieva [14; p.39], J.Kh. Donaeva [10; p.55], D.S. To'xtasinova, and V.S. Khamidov, have investigated the creation and formalization of electronic educational materials in their research on innovative electronic textbooks.

The methodological manual by the experienced educators D.S. To'xtasinova and V.S. Khamidov, aimed at educators in medical institutions, also addresses key issues related to our research. These electronic educational resources are intended to broaden students' perspectives, develop and deepen their initial knowledge, and provide additional information. They are created primarily for subjects that require in-depth study. With the continuous development of science and technology in the education system, the need for limited-edition electronic educational materials for general and specialized subjects is growing [15; p.5].

S.G. Siddiqova, in her dissertation titled *"Methods for Creating and Implementing New-Generation Electronic Learning Resources for Special Subjects in Professional Education,"* highlights the relevance of developing such resources for teaching special subjects and improving educational activities in professional education. However, the lack of sufficient scientific grounding and the pedagogical challenges of integrating these resources into practice demonstrate that these issues remain unresolved and require further investigation [9; p.7].

According to experts in various fields of pedagogy, electronic textbooks should be designed to allow teachers to monitor all actions performed by students independently. Today, the information environment in higher education institutions is viewed as an interactive information exchange setting that aims to meet the informational and technological needs of

students, graduate students, and researchers. This interactive communication environment includes interpersonal communication tools (such as email, phone calls, chats, forums, and video conferences), access to internal and external information resources, and the provision of relevant educational resources to students. Electronic textbooks make up a significant portion of the primary information resources used for studying various subjects at higher education institutions. They integrate nearly all relevant materials into a unified information package.

Modern electronic textbooks provide the required interactivity, visual elements, mobility, compactness, low production costs, multiple options, progressive learning stages, and an abundance of assignments and tests for evaluation. The primary advantage of such textbooks lies in effectively fostering students' independence and active participation in the learning process. Incorporating electronic textbooks into education offers students a comprehensive view of subject material, enables them to learn independently, supports individualized instruction, enhances control and self-monitoring, and ultimately improves learning outcomes. Additionally, electronic textbooks make lessons more engaging and dynamic [11; p.20].

Ensuring the interactivity of teaching must consider the specific features of each subject and be carried out systematically. Electronic textbooks should offer opportunities for repeated exercises and various ways to monitor student progress. Organizing electronic communication in education includes conducting practical exercises, monitoring students' responses, verifying the correctness of answers, performing mathematical calculations, checking graphical data inputs, and controlling the analytical expressions provided. Regardless of the level of education, electronic textbooks must adhere to certain principles during their creation. A review of methodological literature reveals that many issues related to teaching with software products have been explored theoretically. However, research on preparing future teachers in higher education remains insufficient and requires further investigation.

To properly define the focus of this research, it is essential to clarify the concept of "software products." Philosophical, pedagogical, psychological, didactic, and methodological literature addresses various aspects of electronic resources for students and learners, although some challenges remain unresolved. Consequently, there is no unified definition of "software product."

The differences in perspectives on this issue can be attributed to several factors. Some authors associate software products with teaching methods (Zarubina V.S., Belousov M.G., Torlopova N.I., among others). Others view them as a type of educational activity. Some researchers consider them as teaching tools (Tadjieva F.M., Kaysina A.V., Alekseeva T.V., Gubina L.V., among others).

Software products used in the educational process involve students working independently, though under the teacher's instruction, within specified deadlines. Students consciously apply their intellectual and physical efforts to achieve the objectives outlined in their assignments. The role of the teacher remains critical in guiding students' creativity and enhancing their motivation to learn.

Maintaining continuity in education depends on the interconnectedness of its components—goals, content, methods, tools, and forms—which together form the methodological system. This raises the question: do today's curricula meet current needs? The content and methods in education are interconnected, and the challenges of instructional methods often revolve around the question, "How and whom should

we teach?" Thus, the development of instructional methods must align with the content being taught. These two aspects complement each other, despite their inherent contradictions. Many works in pedagogy have discussed the shortcomings of traditional teaching methods. For instance, V.I. Onishenko and M.N. Gendin argue that a lecture represents a generalizing process: on the one hand, it conveys information from the teacher, while on the other, it reflects the students' reception of that information.

Electronic learning materials provide opportunities to link theoretical knowledge with practical applications. They also enable the formulation of problem-based scenarios and encourage collaborative problem-solving with students, fostering independent thinking and a deeper understanding of the subject matter. The creation of multimedia-based electronic textbooks offers a promising solution for organizing such problem-based learning environments. The methodology of teaching through multimedia tools significantly differs from traditional methods. It offers educators and students new ways to present learning materials visually, organize differential and individualized instruction, assess learning outcomes, provide feedback, enable self-monitoring, and demonstrate the dynamic processes of the subject matter through animations, graphics, multimedia, and sound. Furthermore, multimedia tools foster strategic learning skills in students, create new conditions for independent study, and support distance education while promoting cost-effective approaches to conducting laboratory work [18; p.289].

CONCLUSION

In conclusion, the virtualization of education offers solutions to many issues associated with traditional learning, such as rigid class schedules, commuting difficulties, monotonous lectures, and missed lessons.

Moreover, it fosters critical and creative thinking in students. While I firmly believe that virtual and global education brings more benefits than harm, it should not entirely replace face-to-face learning. Instead, individuals should choose the learning approach that suits them best and continuously strive for self-improvement.

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