

The Role Of Electronic Textbooks In Developing The Professional Competence Of Future Preschool Educators

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Abstract. This article examines, through an analytical approach, the theoretical foundations, didactic potential, and practical possibilities of electronic textbooks in developing the professional competence of future preschool educators. Within the framework of the study, the influence of electronic textbooks on the cognitive, methodological, digital, and reflective components of professional training is clarified, and their functional significance in the preparation of students in preschool education is substantiated. The advantages, practical opportunities, and existing challenges associated with the use of electronic textbooks are also considered as interrelated pedagogical factors. The findings demonstrate that electronic textbooks constitute an important means of activating the independent learning activity of future educators, developing their methodological thinking, enhancing digital literacy, and strengthening the integration of theory and practice. The article also offers relevant conclusions for the scientific and methodological improvement of the processes of designing and implementing electronic textbooks.

Keywords: future preschool educator, professional competence, electronic textbook, digital pedagogy, preschool education, digital competence, independent learning, reflective approach, interactive learning, competency-based approach.

Contemporary educational development is imposing new requirements on the content of teacher training. Today, future preschool educators are expected not only to master theoretical knowledge, but also to adapt that knowledge to changing pedagogical situations, work effectively with information, and use digital tools consciously for professional purposes. The field of preschool education requires particular attention in this respect, because pedagogical activity at this stage relies on the alignment of children's developmental characteristics, the communicative environment, and practical methods. Therefore, the use of electronic textbooks in the preparation of future preschool educators should be considered not merely as a technological innovation, but as one of the mechanisms for developing professional competence. Digital educational resources make it possible to organize instructional content visually, guide independent learning, strengthen reflection, and model practical situations. For this reason, this article analyzes the role of electronic textbooks in the development of the professional competence of future preschool educators from both theoretical and practical perspectives.

This study is based on an analytical approach to the problem of developing the professional competence of future preschool educators through electronic textbooks. The conceptual framework of the analysis relies on the interpretation of professional competence as an integrated indicator combining theoretical knowledge, practical skills, communicative culture, the capacity for independent decision-making, and reflective activity. In relation to future preschool educators, this competence is understood not only as the assimilation of professional knowledge, but also as the ability to apply it appropriately, effectively, and creatively in real pedagogical situations. A review and synthesis of scientific literature made it possible to identify three priority dimensions in approaches to professional competence: first, the integrity of knowledge, skills, and personal qualities; second, readiness for continuous self-development and innovative thinking; and third, the ability to organize educational processes through modern, particularly digital, tools. Within this analytical framework, electronic textbooks are examined as a didactic environment that integrates these three dimensions by presenting information in a systematic and multimodal form, creating conditions for independent work and self-monitoring, and ensuring continuity between theory and practice through methodological situations, interactive tasks, and modeled pedagogical processes. Thus, the methodological

basis of the article consists of theoretical generalization, comparative pedagogical analysis, and interpretive synthesis of scholarly views on the role of electronic textbooks in professional training.

The analytical findings indicate that electronic textbooks should be interpreted not as ordinary digital texts, but as multifunctional didactic environments that influence the professional formation of future preschool educators. Their effectiveness is manifested not only in their technical availability, but also in their capacity to represent educational content in multiple formats, support students' independent activity, and model pedagogical situations. In the field of preschool education in particular, visibility, emotional impact, communication orientation, and the priority of practical training make electronic textbooks more functionally significant than traditional resources. Accordingly, their value should be assessed not simply through the criterion of convenience, but through their contribution to the development of methodological thinking, digital literacy, reflective practice, and professional adaptability among future educators.

Dimension of Advantage	Scientific and Pedagogical Meaning	Impact on the Preparation of Future Preschool Educators
Interactivity and multimodality	Electronic textbooks integrate text, audio, video, animation, infographics, and interactive tasks within a single environment. Such multimodal presentation strengthens perception through different sensory channels and helps learners understand complex pedagogical concepts more clearly. Studies note that multi-format resources sustain learners' attention longer and support deeper content mastery.	Students observe lesson scenarios, methods of communication with children, and methodological situations in a visual format; as a result, methodological thinking, attentiveness, and professional imagination develop.
Individualization of learning	Electronic textbooks allow students to study material at their own pace, revisit necessary sections, and check their level of mastery through self-directed testing. This supports differentiated and learner-centered approaches. Scholarly sources emphasize that such flexibility contributes to self-regulation and metacognitive skill development.	Future educators acquire stable learning strategies for independent work, time planning, identifying knowledge gaps, and addressing them effectively.
Development of digital competence	While working with electronic textbooks, students learn to navigate, select, evaluate, process, and apply digital information in accordance with pedagogical goals. Contemporary studies show that digital competence is an indispensable component of effective pedagogical activity for pre-service teachers.	Digital literacy, technological adaptability, and the ability to make informed choices about pedagogical technologies are formed, creating a foundation for innovative professional activity in preschool institutions.
Integration of theory and practice	By including situational tasks, cases, video observations, and practical assignments, electronic textbooks connect theoretical knowledge with real pedagogical activity. This is especially important in preschool education, where subtle aspects of working with children need to be modeled for future educators.	Students develop professional-practical skills such as pedagogical decision-making, lesson design, and selecting appropriate approaches in problematic situations.
Increased motivation and learning engagement	Interactive exercises, prompt feedback, the attractiveness of visual materials, and the dynamic nature of the learning process strengthen students' intrinsic motivation.	Future educators develop greater professional interest, stronger motivation for self-improvement, and readiness for innovative activity.

	Electronic resources transform learning from passive reception into active participation.	
Rapid assessment and reflection	Electronic textbooks may include tests, mini-tasks, automated results, and feedback tools that enable students to analyze their learning outcomes regularly. This reflective approach is among the key factors of professional growth.	Students monitor their own competence level, work on errors, and plan subsequent stages of professional development more precisely.

When the dimensions systematized in the table are generalized, it becomes evident that the impact of electronic textbooks on the preparation of future preschool educators manifests itself in several interrelated directions. First, they facilitate the perception of educational content and reveal the practical meaning of theoretical knowledge. At the same time, the very process of working with digital resources activates students' self-regulation, critical selection, and analytical skills. Qualities particularly important for preschool education, such as communicative ability, attentiveness, and methodological flexibility, are also formed consistently through interactive and situational tasks. Thus, the advantage of electronic textbooks lies not only in the delivery of information, but also in their capacity to bring the mechanisms of the future educator's professional development into an integrated system.

The practical value of electronic textbooks is revealed in their flexible integration into different forms of educational activity. In lectures, they transform theoretical content into explanatory and visual formats, helping students master topics not only by listening, but also by observing, comparing, and analyzing. In disciplines related to preschool education, where process, movement, and communication are especially important, the video, audio, and schematic materials incorporated into electronic textbooks enrich the professional imagination of future educators. As a result, educational content does not remain at the level of abstract theory; rather, it is perceived in connection with practical activity. In this respect, the electronic textbook serves not merely as a tool for increasing the volume of information in lectures, but as an analytical environment that supports the understanding of professional situations.

In seminars and practical classes, the role of electronic textbooks becomes even more active, because at this stage the student appears not as a passive recipient of ready-made information, but as a subject who solves pedagogical problems. Through interactive tasks, cases, and problem situations, students compare different variants of pedagogical decisions, justify them, and attempt to substantiate them methodologically. Such a process is particularly important in issues related to working with preschool-aged children, since this sphere often requires flexible approaches rather than standard solutions. Model lesson plans, assessment criteria, and visual observation materials contained in electronic textbooks systematize students' methodological thinking and create a close connection between theory and lesson design. Therefore, this tool does more than enliven seminars; it turns them into a space for testing future pedagogical activity in advance.

The practical potential of electronic textbooks becomes even more evident during pedagogical practice and independent study. In preparation for pedagogical practice, students can preview lessons through digital resources, imagine possible situations, and attempt to plan their own activity in advance. This creates a basis for more confident and well-grounded action during practice itself when unexpected situations arise. In independent learning, the value of the electronic textbook is manifested in strengthening students' autonomy within the educational process: they can revisit material, assess their degree of mastery, identify shortcomings, and determine independently how to overcome them. Consequently, at these stages the electronic textbook acquires importance not simply as a source of ready-made knowledge, but as a tool that activates mechanisms of self-development and reflective learning.

Electronic textbooks also have particular practical significance in assessment and reflection processes, because they make it possible to monitor learning outcomes not only through final indicators, but also through the dynamics of the process itself. Tests, step-by-step assignments, electronic portfolios, and feedback elements help identify where students encounter difficulties. This approach transforms assessment from a mere control instrument into a developmental mechanism. At the same time, the organizational measures currently being implemented to introduce digital learning are creating favorable conditions for the deeper integration of electronic textbooks into higher pedagogical education. In this sense, the practical opportunities associated with electronic textbooks are defined not by embellishing or simplifying instruction, but by their ability to

integrate the planning, observation, analysis, and improvement of the professional preparation of future preschool educators.

Although the didactic possibilities of electronic textbooks are assessed highly, their actual effectiveness directly depends on the conditions under which they are used in educational practice. For this reason, the issue should be considered not only from the perspective of advantages, but also together with existing limitations and risk factors. The analytical approach shows that the problems associated with the use of electronic textbooks are usually determined not by a single factor, but by the interaction of technical support, methodological design, user preparedness, and the assessment system. Therefore, to increase the effectiveness of this process, it is advisable to analyze these problems not separately, but as components of an integral pedagogical system.

Type of Problem	Nature and Impact of the Problem	Ways to Address It
Insufficient technical infrastructure	In some educational institutions, the limited number of computers, outdated devices, low internet speed, or unstable connectivity prevents the full use of electronic textbooks. As a result, continuity in the educational process is disrupted, students do not have equal access to resources, and the quality of digital education declines.	It is advisable to modernize the technical base of educational institutions step by step, ensure stable internet access, develop offline versions of electronic textbooks, and introduce platforms adapted for mobile devices.
Content that is not methodologically well designed	Some electronic textbooks contain numerous multimedia elements, but these may not be aligned with didactic objectives. In such cases, content remains merely decorative, the logical coherence of learning material is weakened, and students' attention may be distracted from the core content.	The development of electronic textbooks should involve collaboration among pedagogues, psychologists, methodologists, and IT specialists; every multimedia element should be linked to a clear instructional objective, and content should undergo expert review and pilot testing.
Insufficient digital pedagogical competence of faculty	The effective use of electronic textbooks depends not only on teachers' technical skills, but also on their ability to integrate them in pedagogically appropriate ways. If instructors cannot apply digital tools methodologically correctly, the didactic potential of electronic resources cannot be fully realized.	Regular training sessions, seminars, and practical workshops should be organized for faculty, and professional development programs based on digital pedagogy and the TPACK approach should be introduced.
Variation in students' digital literacy and independent learning skills	Not all students are equally able to work with electronic resources. Some experience difficulties in navigation, selecting information, analyzing content, or completing online tasks. This can intensify differences in learning outcomes.	Introductory modules, concise guidelines, video instructions, and special sessions on digital literacy should be organized for students, and differentiated support mechanisms should be developed.
Content that does not correspond to national and age-specific characteristics	If electronic materials designed for preschool education do not fully correspond to local cultural context, language characteristics, and the age psychology of children, their practical value decreases. Future educators then encounter difficulties in adapting such materials to real pedagogical situations.	When developing electronic textbooks, it is necessary to take into account national values, state educational standards, the developmental characteristics of preschool children, and regional needs, and to localize content accordingly.

Weak assessment and monitoring system	If the effectiveness of electronic textbooks is not assessed regularly, it becomes difficult to determine their actual pedagogical impact. As a result, their use may become formalized and their influence on instructional quality may remain insufficiently measured.	It is necessary to develop criteria for evaluating the effectiveness of electronic textbooks, collect user feedback, establish monitoring of learning outcomes, and improve content regularly on the basis of analysis.
Problems of psychological adaptation and motivation	In some cases, excessive use of digital tools may lead to student fatigue, reduced attention, or a decline in interest in the resource. In addition, adaptation to new platforms also requires time.	It is important to maintain didactic balance in the use of electronic textbooks, combine traditional and digital methods, create user-friendly interfaces, and employ interactive approaches that enhance motivation.

When the problems reflected in the table are considered in a generalized manner, it becomes clear that the effective use of electronic textbooks cannot be ensured simply by introducing a single resource. Technical capacity, methodologically grounded content, the digital preparedness of teachers and students, and monitoring mechanisms all function as mutually complementary factors. If one of these is weak, the potential of the others also cannot be fully realized. Therefore, in order to achieve the expected pedagogical outcomes in developing the professional competence of future preschool educators, the process of implementing electronic textbooks should be organized according to a comprehensive, phased model grounded in continuous improvement.

In conclusion, electronic textbooks possess distinctive scientific and practical significance as an innovative and systemic pedagogical tool for developing the professional competence of future preschool educators. Their effectiveness is determined not merely by the digital transmission of educational information, but by their capacity to integrate the cognitive, operational, communicative, and reflective components of professional training. The theoretical analyses carried out in this study demonstrate that electronic textbooks are an important factor in deepening methodological thinking, activating independent learning activity, developing digital literacy, and ensuring continuity between theory and practice among future educators. At the same time, their practical effectiveness is closely linked to the technical infrastructure of educational institutions, the didactic quality of digital resources, the digital-pedagogical preparedness of faculty, and the consistency of monitoring systems. Therefore, in training future specialists in preschool education, the use of electronic textbooks should be regarded as an important component of the competency-based approach, while the process of creating and implementing them should rely on a scientifically grounded methodological model. In the future, one of the pressing scholarly tasks will remain the evaluation of the effectiveness of electronic textbooks on the basis of empirical criteria, the identification of their influence on pedagogical practice through experimental research, and the improvement of technologies for creating interactive content adapted to preschool education.

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