

## A Systematic Approach to the Creation of E-Textbooks for Full-Time and Distance Learning of Students of Pedagogical Institutes

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**Abstract.** *The purpose of this article is to discuss the informatization of education in an informed society, the role of information and communication resources and educational resources in a modern education system, the definition and classification of electronic educational resources, the typical structure of electronic educational resources, the requirements for their creation, and the principles and stages of creation. This article collects and analyzes information on the didactic principles of creating electronic information educational resources for students of pedagogical institutes. We can also cite the recently developed online learning environment as an example of how e-learning tools can help to achieve these goals..*

**Keywords:** *online education, distance learning, e-learning environment, didactic principles, educational content management systems.*

The role of textbooks in pedagogical literature and practical teaching activities in creating electronic textbooks for pedagogical university students, peculiarities of teaching and using textbooks in the information and educational environment, changing the definition of electronic textbooks; didactic possibilities and effectiveness of their use in the educational process

Since its inception as a mass phenomenon, that is, since the invention of print, the textbook's position in the pedagogical process has been continually altering. Simultaneously, in didactics, the textbook's perception changes throughout time as the textbook's requirements alter to meet the demands of the times.

Originally, a textbook was defined as a "book for teaching a particular subject," which is directly related to its form (book) and purpose (for teaching). As V.I. Vernadsky identified this phenomenon, the "explosion of scientific creativity" marked the growth of the role of science in public life in the twentieth century, leading to an expansion of the generally accepted definition.

In the information society, the goal of education is formed not in the form of a set of knowledge, skills and abilities, but in the form of different types of competencies, the school pupil and the student are no longer objects of education, "at least able to partially determine the educational trajectory of Google" and full-fledged subjects of the educational process who have such an opportunity at the ICI". The competent approach underlies the theoretical teaching of the changes taking place in modern didactics; there are two subjects in the information-educational environment - the teacher and the student; education will be variable, meaning that each student will move along their own educational trajectory". Textbooks for use at ICIs, in particular, begin with the selection of teaching materials for the new generation of textbooks. The choice of educational material should begin with the authors, defining the didactic approach, because with it the idea of the subject, i.e the idea, the concept, the project of the content of the subject itself, its leading component: in the traditional approach knowledge, competence in a competency-based approach, values and meanings are identified in the choice of a person-centered approach.

The didactic bases that guide the selection of teaching materials for new textbooks are:

- 1) the relevance of the teaching material to the chosen didactic approach and the corresponding subject;
- 2) The textbook has four components of learning content: knowledge, methods of activity, creative experience and experience of values, the ratio of which depends on the didactic approach and the nature of the subject being studied;
- 3) the selected educational material should be aimed not only at describing the content of the subject, but also for the students to organize the learning process completely independently;
- 4) provide opportunities for individual, pair and group work in the classroom;
- 5) to take into account the individual characteristics of the learning process by students, to ensure the variability of the presentation of the material and the mastery by students who are able to independently design an individual learning trajectory;
- 6) give students the opportunity to create their own learning product that is included in the textbook;
- 7) include in the textbook material describing life situations in order to form and solve the various problems that arise in these situations.

Over the past decade, due to the rapid development of computer and Internet technologies, a new type of e-textbook has been actively used in the educational process, including distance learning, especially in higher education.

Naturally, research has emerged in the development and use of e-textbooks and the use of information technology in education.

The pedagogical literature pays particular attention to the concept of e-textbooks, the definition of which is constantly evolving. Initially it was not seen as a separate teaching tool, but as a digital form of presenting educational information in a traditional school or university textbook, and later a navigation system became a requirement. In the early 1990s a number of authors (A.S. Demushkin, O.B. Zhuravleva, B.I. Kruk, etc.) considered it as a programme-methodological complex combining features of laboratory practice. The Floppidisk collection book format is more in line with the concept of a "computerised textbook". In the late 1990s, L.Kh. Zainutdinova gave a different definition of e-textbook: "An e-textbook is an information retrieval, mathematical and computer-visualisation tool which provides theoretical material, ensures continuity and completeness of the didactic cycle of the learning process, controls exercise and knowledge level as well as interactive feedback, provides simulation modelling and service functions" is a comprehensive, targeted training software system. Thus, the paper-based medium, which is one type of didactic ED software, should provide you with all the essential functions.

The definition of an electronic textbook as a separate type of electronic educational publication is considered in the main provisions of the concept of electronic educational publications and resources outlined in the works of A. V. Giglavy, M. N. Morozov, A. V. Osin and etc., classified according to the form of information placement: e-learning publications are distributed externally and educational resources are available on networks; depending on their purpose, they are divided into three types: for information transfer, for practical exercises and for attestation.

In addition to simulators, reference books, various test systems, etc., e-learning publications and resources, including e-textbooks, are new pedagogical tools: "interactivity, multimedia, computer modeling of real processes, communication":

The creation of e-textbooks in the pedagogical literature is often considered in connection with the

study of the general problem of using ICT in teaching, as well as the creation of various software products designed to increase the effectiveness of the educational process.

Similar structural elements pertaining to the e-textbook have been noted in the work of a team of authors from the Institute for Educational Development, including S. M. Avdeeva, L. L. Bosova, V. V. Volkov, A. N. Leibovich, K. V. Tarasova, N. V. Tarasova, and others. They also discussed the didactic and design-ergonomic requirements for the electronic textbook, the definition of ED, recommendations for its development, taking into account its importance in the development of the educational process based on information and communication technologies, as well as expanding the tasks of the textbook. options are formed. These include, first and foremost, the visualisation of learning information and the interactive interaction of participants in the learning process and learning tools in a convenient, comprehensible environment both in face-to-face teaching and in self-study activities. An e-textbook is a textbook for a variety of purposes: problem sets, reference books, anthologies and more: a set of tasks, reference books, anthologies, etc., which allows for the technical integration of all the teaching materials in the subject. At the same time, with software tools, it is possible to create an active learning environment where each student can move along the individual trajectory of learning the learning material, and the teacher can access all mobile devices in the overall network with the opportunity to manage the learning process.

Modern e-textbooks can and should be universally usable without the need for special software to install them, making it a technical requirement for their creation. E-textbooks developed in various distance education systems used by educational institutions should be made available. This is a set of technical requirements for the implementation of the electronic textbook software, which allows one to use it in various electronic control shells without losing functionality.

The modern development of electronic technologies and the diversity of gadgets used place special demands on the software implementation of e-textbooks, which is important in the system of distance education, especially in higher education. The implementation of this software should be cross-platform, i.e, it should be successful for different types of electronic devices, providing more options for the user.

Among the requirements for e-textbooks as part of the information-educational environment based on information and communication technologies and aimed at the application of modern forms and methods of teaching in the educational process are cross-platform, e-textbook specifications are open to all presentation in formats.

Thus, when assessing the quality of an existing e-textbook, we can preliminarily check its compliance with the qualifications, sanitary rules and norms, didactic and constructive requirements adopted by SES, but the process of constructing e-textbooks itself is not standardised.

Developed effective teaching aids based on the laws of psychology to study the process of textbook construction, including electronic tools. Founded by American psychologist Robert Gagne, the course focuses on pedagogical design. ADDIE (Analysis, Design, Development, Implementation, Evaluation) model, which includes the stages of creating an e-learning tool, both on the basis of the existing print version and independently, as one of the technologies for creating an effective tool for learning . The steps involved in creating an e-learning tool, regardless of its type, include: analysis of the target audience and expected measurable outcomes; designing or engineering a textbook model; technical implementation of the project; uploading into the education management system; evaluating the effectiveness of the use of teaching aids, adjusting and updating the interpretation. A similar division of the process of preparing and introducing e-textbooks as a collective publication is described in the work of the Republican Institute for Educational Development.

Currently, e-learning systems are used as an opportunity to host unstructured learning materials

without taking full advantage of modern e-shells. However, the widespread use of information technology, the shift to e-courses, the need for feedback and communication between students and teachers, the active participation of teachers in the creation of e-courses show that e-learning is a reality today and requires a systematic approach to the development and use of e-textbooks.

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