The Development of an Online Platform for Studying Ukrainian Literature

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Abstract – **The authors of this article adduce facts according to which the development of an online platform and an electronic book for the study of Ukrainian literature by secondary school students is relevant. We described the structure and basic functionality of the process. The features and advantages of e-learning resources have been identified. The quantitative status of the development of e-books in Ukraine has been analyzed. The lack of e-book regarding Ukrainian literature for secondary school is indicated. It is reported that the developed online platform operates in three modes. The e-book of Ukrainian literature contains fiction texts, analysis of fiction texts, presentations, video and audio files for fiction texts, control unit. The results of the students' surveys regarding the use of the online platform in the educational process have been presented.**

Keywords – **e-book, online platform, secondary school, informatization of education.**

1. Introduction

Major transformations which occupy the structure and functionality of modern society information and communication technologies (ICT) are of great importance.

Their application makes it possible to increase significantly opportunities in social, economic, industrial activities, etc. The processes of global informatization have led to the possibility to obtain any information to solve both personal and professional problems. The Internet has succeeded in reducing communication restrictions, increasing the flexibility and mobility of person-to-person relationships [1], to provide access to a wealth of information. As a consequence, people nowadays should be able to use ICT and navigate the information space.

Along with the development and application of information and communication technologies, education remains an important factor for successful human life. The education level often corresponds to the level of social and economic development of the state.

The combination of powerful information and communication technologies and new pedagogical technologies in the direction of education informatization has led to the emergence of new generation learning tools. They include distance education systems, mass open online courses, cloud technologies and others. E-books are one of such types within modern learning tools combining both didactic capabilities of local electronic learning tools and the powerful capabilities of networking technologies.

Various aspects of education informatization in Ukraine have been reflected in the works of V. Bykov, M. Zhaldak, N. Morze, O. Spirin, O. Spivakovsky and other scholars. Researchers consider the informatization of education as one of the promising directions for strengthening the intellectual potential of the state, and emphasize that Ukraine is purposefully going to information society building.

Z. Avdeeva, Y. Taratuhina, V. Toktarova, V. Vlasova and other scientists worked on the development of principles and styles comprising teaching in the context of electronic educational environments.

V. Lapinsky, M. Shyshkina and others were involved into requirements formation for the creation of electronic educational tools, including e-books. S. Sharov, T. Sharova were engaged in the development of electronic educational tools for providing the students' self-study in Ukrainian and foreign literature.

Quantitative indicators for the development and implementation of electronic educational purposes into secondary school education process over the past 20 years have been researched by A. Gurzhiy, V. Lapinsky.

Research on the use of electronic textbooks in the educational process was conducted by I. Vorotnykova. According to her research, more than half of Kyiv school teachers use electronic educational tools in their professional activities.

Comparison of electronic textbook capabilities on «Rozumniki» and «MozaWeb» online platforms has been given in A. Antokhova's research.

Despite significant shifts in quality e-learning tools working out, this process in Ukraine has not been completed. Nowadays there are a tiny number of e-books in Ukrainian literature for secondary schools that makes their development an urgent task.

The purpose of the article is to review the current state of domestic electronic educational resources development, to report on an online platform and electronic textbook development for Ukrainian literature studying by secondary school students, as well as to describe its functional blocks and capabilities.

2. General Background of Research

In an information society, the formation of a unified educational environment is a promising approach for the development of education system. Components of the learning environment include multimedia equipment and related software enabling to reproduce the content and the learning process control [2].

Previously, software and pedagogical tools, electronic databases, and specialized computer programs were used to accomplish these tasks. The advent of the Internet and the active introduction of ICT into learning activity within educational institutions have led to the creation of a networking paradigm of learning, being characterized by the following features:

- free access to training information from anywhere;
- increase of influence and educational motivation on personal development;
- freedom to choose a place of study in the virtual learning space;
- certain changes in the structure of the educational system;

- increasing the level of individualization and differentiation of learning;
- empowerment in acquiring knowledge and gaining competencies;
- the increase of personal competitiveness.

A particular advantage of the online learning paradigm is to ensure interaction between participants in the virtual learning process. By means of teamwork, students can solve their educational tasks as well as problems that have been set independently. In addition, in the process of communication in the Internet space, users gain experience of practical and professional activity, increase their activity [3], and gradually prepare to active life in the modern information society.

Modern requirements with regard to preparation of young people for the traditional forms of studies require changing, that is to renew maintenance of education, develop for students flairs to independent work [4]. Today we can talk about the introduction of computer-based systems of education (distance education, mass-open online courses), mobile technologies, multi-agent educational systems into the national educational process. The authors have practical experience in using the Moodle distance learning system [5] and Ukrainian mass-open online courses, including Edera [6] and Prometheus to study Ukrainian language and literature.

In our opinion, these open educational resources (OER) are characterized by the following features and advantages: high level of students' interest in additional education; integration of different sources of knowledge on a single platform; using different learning, communication and assessment tools; ensuring the principle of open education; high degree of interactivity; using a variety of feedback tools; the presence of a large number of online courses in different directions; free access to any course.

These benefits are confirmed in research [7] (ensuring the principle of openness and accessibility of education); [8] (possibility to use OER on various electronic devices).

2.1. Opportunities of the e-Book

One of the areas regarding the use of information and communication technologies in the educational process of higher and secondary schools is the introduction of electronic educational tools (EET).

This type of electronic educational resources is characterized by the following didactic capabilities:

- management of the educational process by authorized users;
- saving the learning results in the form of a database or external files;
- online feedback and computer testing;

- improving the clarity of the training material;
- using different ways of presenting information;
- providing individual mode of work and differentiation of training.

In A. Gurzhiy and V. Lapinsky studies it had been noted that by 2005 about 300 electronic educational tools were developed for the national educational institutions, which received the corresponding marks of Ministry of Education and Science of Ukraine. During 2005-2015 approximately 400 EETs were developed to support the secondary school learning process. About 15 institutions and organizations of different ownership took part in the development of software products have been officially registered by the Ministry. Foreign language, geography, labor education, mathematics, as well as primary education subjects are among those for which the greatest numbers of software products have been developed. It should be noted that most EETs were local PC-based then. Therefore, their further use in a multi-user learning and Internet-based learning process has become a problematic issue. Only electronic training tools that have developed a system of lesson design or have a subject-oriented environment could be adapted to modern requirements [2].

A few years ago, developers of EET and e-learning resources began to focus on the Internet and cloud technology [9]. The use of them increases the capacity of electronic resources and provides multi-user access to educational information. Such e-learning products are called e-books, corresponding to the educational program. They are characterized by a systematic presentation of educational material, containing a variety of multimedia objects which provide an interactive mode of work with users [10].

Nowadays the e-book is one of the promising digital education tools being used successfully at high and secondary schools. They can be used at different stages of the lesson: while learning new material; practical application of the acquired knowledge; independent work; control and self-control of knowledge.

Its features include the following: provision of quality education in the information society; ensuring equal access to education for all users; development of information culture of users; increasing the visibility of educational material [11]; reducing the cost of developing and updating educational content; involving the teachers and leading specialists in the forming of educational content; realization of differentiation and individualization during the training; opportunity to get prompt help from a teacher/lecturer [12].

The integrative nature of the e-book allows us to combine different educational components (theoretical material, test tasks, video lectures and interviews with leading experts) into one [13], create a comfortable educational environment, develop students' communication skills [14], etc. Thus, it creates a unified educational environment within one educational institution, region and country. The users of such electronic educational resources could be students, teachers, heads of educational institutions and structural units, regulatory authorities, content-managers and administrators.

3. Research Results

3.1. Conditions of e-books Development for Secondary School

Up-to-date Ukrainian educational environment, online e-books are relevant, and they should not be stored on physical media, copied and downloaded to a personal computer. The main tool for working with such electronic educational resources is a registration on the appropriate resource.

The impetus for their development was an all-Ukrainian experiment on the introduction of e-books, called «E-book for secondary education (EBSE)». Its implementation is being realized in the period of 2018-2021. The Institute for Education Content Modernization of Ukraine (IMZO) and the Ministry of Education and Science of Ukraine appealed to well-known domestic developers of educational software for the purpose of developing e-books at the expense of public funds. All versions of e-books should be created as a form of an alternative educational tool in printed version for the textbook recommended by the Ministry of Education and Science of Ukraine for secondary schools. It is supposed that the e-books having been developed will be competitively selected and implemented into the educational process in the secondary school at the level of pilot project. Within three years, the number of e-books will increase until it covers most subjects for all grades [15].

The developed electronic textbooks will be placed on a special electronic platform (e-platform), which should perform the following functions: granting access to e-books of educational subjects for registered users; providing expertise of e-books by selected experts; ensuring interaction between participants in the educational process from different educational institutions; accumulation of reporting and supporting information to analyze the effectiveness of the developed e-books; analysis of student performance based on collected service information [16].

All projects of e-books are downloaded on the official site of the Institute for Education Content Modernization of Ukraine. There one can find online tutorials for grades 1, 2, 5 and 6. For example, pupils of the New Ukrainian School in grade 1 can work

using e-books on the following subjects: «Ukrainian», «Mathematics», «I am exploring the world» and «Art». For class 2 pupils have only two e-books from the «Natural history»/«I am exploring the world» and «Art». The following versions of e-books are presented for middle-school pupils (grades 5-6): grade 5 – «Introduction to History», «Handicraft»; grade 6 – «World History. History of Ukraine (integrated course)», «Geography».

The list of e-books to be developed within 2018-2021 was defined in the Order [15] on the experiment. The total number of e-books developed in different subjects within the Ukrainian experiment is shown in Fig. 1.
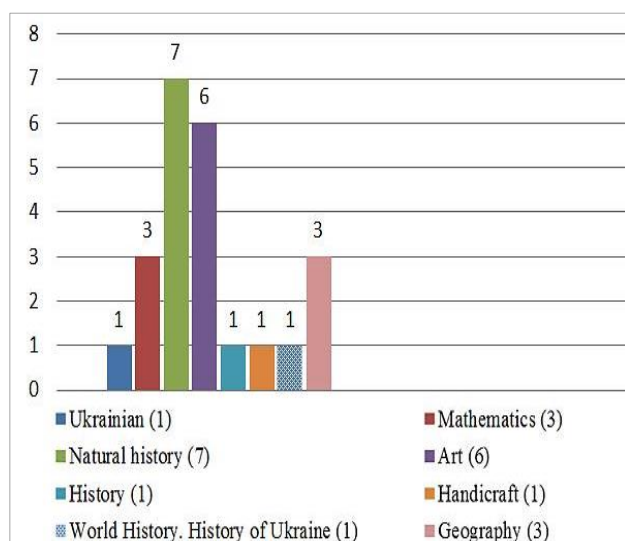

Figure 1. Number of e-books on IMZO-website

The total number of e-books for different classes' subjects is shown in Fig. 2.
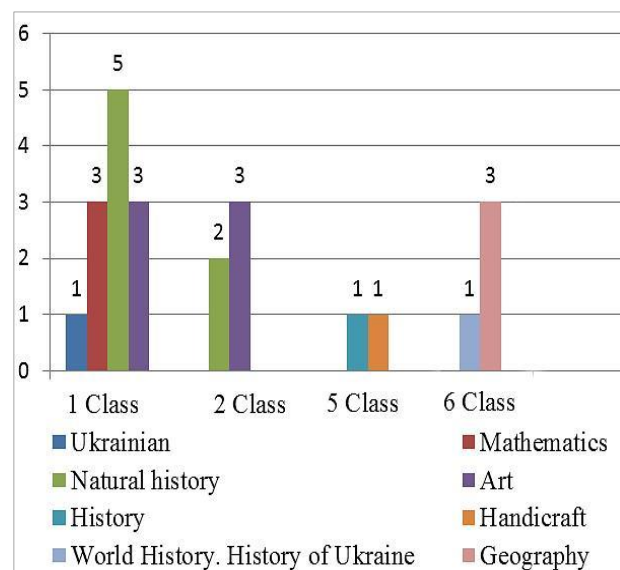

Figure 2. Distribution of developed e-books by subjects and classes on the IMZO-website

The detailed characteristics of some electronic textbooks and electronic training tools are presented in the works of A. Antokhova [17] and I. Vorotnykova [11].

3.2. Structure and Functionality of an Online Platform for Studying Ukrainian Literature

The analysis of the developed e-books, which are available on the official IMZO website, revealed the lack of electronic educational resource on Ukrainian literature that is taught in secondary school from grades 5 to 11. At the same time, observations and communication with teachers of the Ukrainian language and literature have shown that it is quite difficult to motivate students to read great works in the school curriculum recently. The developed online platform and e-book will help students of the grade 8 to learn Ukrainian literature faster and to cope with the school curriculum. There is a brief review of the main functionality respecting the developed software products.

The online platform provides the user's work in three modes: admin mode, teacher mode, student mode. Each mode is automatically activated depending on the login and password that have been entered by the user during authorization.

The most functional is the admin mode, enabling to perform the following tasks:

- entering, deleting and updating educational content, changing its sequence, hiding appropriate sections and topics (section «Editing the e-book»);
- viewing the contents of the e-book (section «List of e-books»);
- adding information about the student, teacher, headmaster (section «Control panel»);
- changing of user's information (section «My profile»);
- adding, modifying information about the institution and departments (section «Control panel»);
- viewing information about the test results of any user (section «Statistics»).
- In teacher mode, the user can perform the following tasks:
- view the contents of the e-book (section «List of e-books»);
- add information about the student (section «Control Panel»);
- view information about the student, his or her educational activity (section «Statistics»), test results (section «My profile»).

The general scheme of user's work in the mode «Teacher» is shown in Fig. 3.
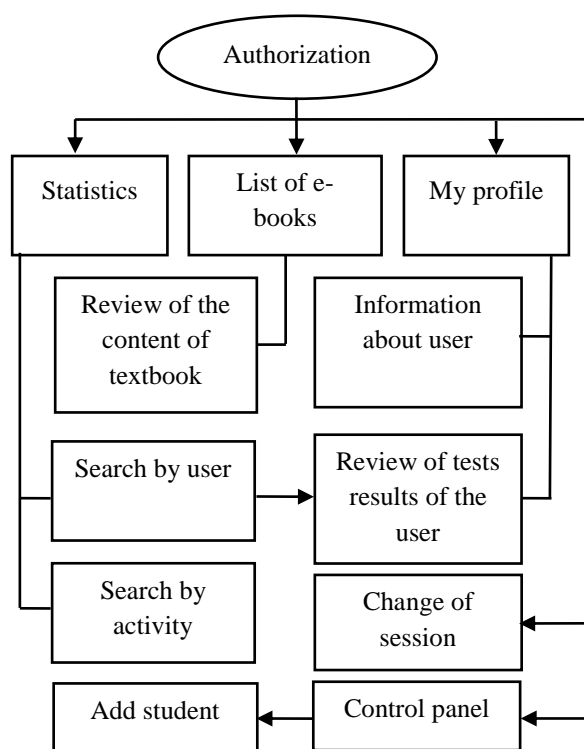
Figure 3. General scheme of work in teacher's mode

In student mode, the user can perform the following tasks:

- view the contents of the e-book (section «List of e-books»);
- computer testing on selected topics (topic in a specific section);
- view the results test (section «My Profile»).

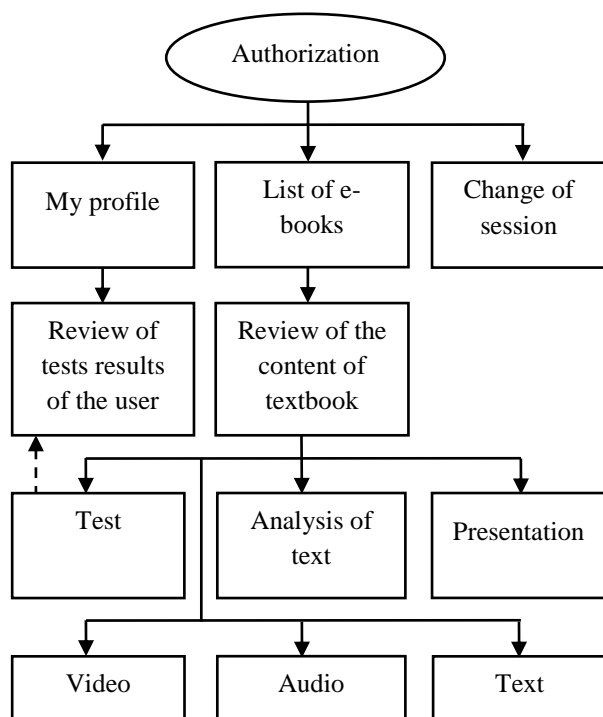The general scheme of user's work in the mode «Student» is shown in Fig. 4.

Figure 4. General scheme of work in student's mode

The filling of the electronic textbook with educational content was carried out on the basis of a printed textbook for the students of 8th grade of secondary school (author of textbook: O. Avramenko). The textbook corresponds to the standard of the New Ukrainian School, recommended by the Ministry of Education and Science of Ukraine. It contains basic information on the theory of literature, works of writers in accordance with the curriculum, information about the biography of artists [18].

We can consider the functionality of the e-book example from the section «Folk oral literature», which is provided in the curriculum [19]. During its study, students should develop the following subject competences:

- understanding the meaning and function of the song in the life of the Ukrainian people;
- gaining historical information about the times depicted in the songs;
- defining and explaining the means of artistic expression in works of art.

Such competences can be developed by means of careful reading of fiction texts and their analysis. As a result, students can learn about national heroes, learn to characterize the images of knights-defenders from their native land; discuss what people respect their heroes for; express their attitude to the main characters of songs and works of art; to reflect on the spiritual connection with the historical past of the native people.

While studying the theme «Folk oral literature» at Ukrainian literature lessons, the second cross-cutting line – civil responsibility stands out. It involves the formation of students' emotional attitude to the state and the nation. In this case, it is awareness of the chivalry, courage, spiritual, and physical strength of the ancestors of the Ukrainian people. In addition to studying historical songs, the curriculum [19] provides an introduction to the works of well-known Ukrainian writers. These include Y. Vinnychuk, T. Shevchenko, Lesya Ukrainka, V. Sosyura, V. Goloborodko, V. Gerasymyuk, I. Malkovich, I. Pavlyuk, G. Kyrpa, V. Drozd, M. Kotsubynsky, O. Dovzhenko, etc. Different amount of lessons is given to study the works of each writer that students can use to work on with the e-book.

The simple user interface of the developed e-book enables students to read easily the content and find quickly the material they need. For example, when analyzing the content of the theme «Historical Song», you can learn about the works for compulsory reading in grade 8: «Oh, how kozak Sirko shouted», «Oh Moroze, Morozenko», «Maxim Kozak Zaliznyak», «The sun rises behind Siberia», «Oh, don't go, Hrytsyu», «Winds blow, storms blow», and others (Fig. 5).

Figure 5. List of artistic works of the educational theme «Historical song»

After reading a fiction or poetry work, students are invited to become familiar with the analysis of the work. This document contains the theme and idea of the work, main thought, genre, composition of the work and artistic means. At the end of each analysis of the work, there is a reference to the source from which the information was obtained.

To the right of each artistic or poetic work presented in the e-book, there are icons, which indicate its functionality (fig. 5): opening the list of topics for study, analysis of the work, viewing the presentation, watching video, listening to audio, and testing.

The e-book on Ukrainian literature contains a block of additional materials: literature for home reading; a list of works to learn by heart; literature for additional reading. Besides, students are encouraged to familiarize themselves with the vocabulary of terms and concepts. Using the vocabulary, students can review concepts of literature and art and use them in the future to discuss a particular topic in the lesson.

3.3. Survey Results Processing

In order to determine the positive effect and interest of students in the use of e-books, we conducted a survey among 8th-grade pupils in Melitopol.

About 30 students participated in the survey. They were invited to get acquainted with the developed e-book while working with the section «Historical songs». A few days later, students were asked questions that can be divided into two blocks.

The first block of questions was about identifying students' attitudes toward the opportunity to learn specific subjects through online educational resources, especially e-books. The analysis of the survey results showed that local curriculums are uninteresting for students (72.1%) because they are inconvenient to use and require a personal computer. At the same time, 82% of students find e-books more practical in terms of learning.

42.8% of the students are indifferent to the textbooks they could use (print or electronic). At the same time, 57.2% of students expressed a desire to use electronic textbooks instead of printing, provided they had a tablet at home and at school.

The students listed the advantages of e-books: the clarity, the dynamic of the educational material, the opportunity to switch to other educational resources with the help of built-in QR-codes or Internet-links, and the availability of multimedia files. At the same time, some students confirmed that in addition to learning, they would play online games or surf social media. Therefore, addressing the problem with regard to increasing students' learning motivation is a very urgent task and needs further study.

The second block of questions is related to the usefulness of the developed online platform and the e-book for the study of Ukrainian literature. More than half of the students (76.8%) approached the possibility of studying Ukrainian literature using an e-book as an alternative source of information. A small part of respondents decided to use only the printed version of the textbook. They explain their decision by not having a tablet or computer at home and unwillingness to use additional sources of information.

The students were asked to determine which of the multimedia tools built into the online platform is the most effective for learning about works of art. In addition, students had to define the relevance of their use. To the multimedia tools that are integrated into the online platform, we include fiction text, text analysis, presentation of artwork, video, audio, and

topic testing. It turned out that not all students want to read fiction texts, but they need just to get acquainted with the analysis of the work and listen to the text in audio form.

4. Discussion

Implementation of information and communication technologies in the educational process, including electronic educational resources, is impossible without the support of educational innovations by the state, educational institutions, scientists and teachers. Such support will lead to creation and adaptation of OER to educational needs, and their consistent dissemination [8]. These processes include regulatory development, funding, recognition of digital non-formal education, and more.

At the same time, there will be a change in the paradigm of learning and updating the content of education taking into account the possibilities of ICT, orientation on the student's personality, globalization of educational processes, ensuring the principle of openness in education. O. Golubev and V. Testov hold similar opinions and consider the development of ICT a global phenomenon that will lead to the emergence of a new educational paradigm based on network technologies [3].

Consequently, the modernization of learning forms, tools, methods, and technologies are the demands of time. Under these conditions, students will independently develop individual learning abilities, master modern technologies. At the same time, motivation of students to get knowledge [20], their desire to develop their own competencies and become more successful will play an important role in e-learning.

The use of electronic educational resources, including an e-book for the study of Ukrainian literature, should provide a specific methodology for their use, taking into account the curriculum, age characteristics of students, and other factors. In such cases, scientists emphasize the creation for specific models of learning based on network technologies. Using them will give the following advantages:

- forming individual educational space enabling students to achieve their own life and professional goals [20];
- educational process centering at students and their educational opportunities;
- developing students' ability to search and process information [21];
- providing lifelong learning.

5. Conclusion

Nowadays, e-learning is being actively implemented in the educational process of Ukrainian higher and secondary schools. The creation of regulatory documents at the level of the Ministry of Education and Science of Ukraine, the development of electronic educational resources, the use of distance learning and mass open online courses provide lifelong learning.

One of the important school subjects in each state is the national literature, enabling students to get acquainted with the national traditions of the people, the norms and rules of morality, and learning about famous writers and artists. Ukrainian literature for students in 8th grade of secondary school will allow them to get acquainted with folk art, to learn about the works of T. Shevchenko, Lesya Ukrainka, V. Sosyura, V. Pidpaly and other writers.

Reading and analyzing artistic texts will allow students to develop civic competence, form creative and personal abilities. While preparing to the lesson, students can use the e-book and get acquainted with the works of word art, view presentations, listen to audio works, and watch thematic video clips. The e-book contains test tasks formed for each topic, which enables to test knowledge and consolidate educational material.

A developed online platform can hold a large number of textbooks if they are developed on that platform. It is also planned to create e-books for various subjects of the secondary school after testing the platform under real conditions.

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