THE ACTIVITIES OF CREATING AND VALUING ENGLISH DIGITAL TEXTBOOKS IN THE PROCESS OF TEACHING

Tatiana CHIRIAC, Nicolae BALMUȘ,

„Ion Creangă" State Pedagogical University of Chişinău

Elvira MUNTEANU,

Lyceum „Dante Alighieri", Chişinău

Digital textbooks can play an essential role in representing a school discipline's educational content through their interactive and multimedia features. The goal of the present research is to critically analyse some types of interactive educational resources developed using the MDIR Constructor 2.0 application to value English digital textbooks in the process of teaching. A content analysis of computers as an approach to language learning has been introduced by many researchers in the last few years. The current paper aims to show the impact of digital textbooks in the field of English language learning and provide examples of how the digital textbook might complement various classroom exercises to promote student-centred learning and individualization in language learning. First of all, the adoption of information and communication technology in the educational process in our country will be discussed. Secondly, an extensive review of a series of scientific studies about computer involvement in a language-learning environment will be examined. And finally, the practical aspects regarding the development of some interactive educational resources within the digital textbook for English language level A 1.2 will be presented.

Keywords: digital textbooks, interactive educational resources, MDIR Constructor 2.0 application.

ACTIVITĂȚI DE CREARE ȘI VALORIFICARE ÎN PROCESUL DE INSTRUIRE A MANUALELOR DIGITALE INTERACTIVE DE LIMBĂ ENGLEZĂ

Manualele digitale pot juca un rol esențial în reprezentarea conținutului educațional al unei discipline școlare datorită caracteristicilor lor interactive și multimedia. Scopul prezentei cercetări este de a analiza critic unele tipuri de resurse educaționale interactive dezvoltate prin intermediul aplicației MDIR Constructor 2.0 pentru a valorifica manualele digitale de limba engleză în procesul de predare. O analiză de conținut despre utilizarea calculatorului în învățarea limbilor străine a fost introdusă de mulți cercetători în ultimii ani. În lucrare se prezintă impactul manualelor digitale în domeniul învățării limbii engleze și se evidențiază capacitățile manualului digital de a sprijini diferite activități de clasă pentru a stimula învățarea centrată pe elev și individualizarea în învățarea limbii engleze. În primul rând, se va discuta despre adoptarea Tehnologiei Informației și Comunicațiilor în procesul educațional din țara noastră. În al doilea rând, vor fi examinate o serie de studii științifice despre implicarea computerului într-un mediu de învățare a limbilor străine. Și, în final, vor fi prezentate aspectele practice privind dezvoltarea unor resurse educaționale interactive în cadrul manualului digital pentru limba engleză nivel A 1.2.

Cuvinte-cheie: manuale digitale, resurse educaționale interactive, aplicația MDIR Constructor 2.0.

Introduction

The most important goals in fostering digital knowledge and skills are the upgrading of the educational system to a new technological and quality level and the application of digital didactic resources. The integration of information and communication technology in the educational process is one of the directions of modernization of the educational system adopted in our country through a series of policy documents and strategies for the training of digital skills for teachers and students. [8, 9, 10]. The use of digital educational resources in the process of teaching and learning especially influences the forms of education, with the emphasis being on multimedia representation, interactivity, and personalization of didactic content. The digital transformation strategy of the Republic of Moldova for the years 2023–2030 [10] identifies digital transformation as a strategic objective for ensuring an innovative and inclusive digital society. All societal

sectors, even the educational system, which will develop into a proactive education system that promotes digital transformation, must fit within the objectives of this change. Additionally, following these strategic directions, we consider that one priority for the improvement of education in our country is the digitalization of didactic materials and the implementation of an innovative educational environment.

.The digital textbook (e-textbook) represents a new approach to developing digital competence in teaching, learning, and assessment. It represents a modern educational source as a result of research, initiatives, imagination, experiments, and the development of new technologies in educational learning processes [11]. Digital textbooks are also considered to be a crucial component of the working tools used to improve learning. A digital textbook is very effective in the didactic process because it draws on both the subject matter of the discipline and the features and possibilities of multimedia technology. Since the interactive features of the e-textbook enable individualization and independent knowledge acquisition by students, it also has an impact on teaching strategies.

The concept of the digital textbook was introduced in the Republic of Moldova in 2015. This national policy emphasizes that the adoption of digital textbooks in the classroom will aim to provide all participants in the educational system with access to the largest possible volume of modern, interactive digital educational content presented in various formats, adaptable to the needs of each student, and professionally made by didactic, psychological, information technology, and design standards [5].

From the standpoint of digitalization and educational innovation, the new modifications in the implementation of the new curriculum also encourage the necessity for e-textbooks or digital aids in the classroom in the context of the current changes endorsed by the national policies and strategies.

Research methodology

The authors of the paper examine several possible types of educational resources that might be added to the digital textbook for English language level A 1.2 [6] and provide a theoretical study of the experience and benefit of utilizing digital textbooks in educational activities. We emphasize the importance of curriculum-aligned content and a range of learning activities in digital English textbooks to boost student motivation, engagement, and knowledge. The digital textbook offers students and teachers a new learning environment that can support or improve the learning process.

The analysis is done as part of the research project ,,Development and implementation of interactive digital textbooks in pre-university education", no. 20.80009.0807.25 (State Program 2020–2023), in order to experimentally validate various interactive digital textbook prototypes that are designed and produced for general school discipline. Our research group has focused on creating several interactive digital textbooks during the last two years.

Literature review

This section provides a concise outline of key aspects that emerged during the research. The use of information technology as a teaching tool for the instruction of foreign language learners was highlighted by Warschauer & Healey (1998), Beatty (2010), Alsaleem (2020), and other researchers. Many of the changes in language learning paradigms are connected with the development of multimedia technology that helps students study specific language skills and advance their language abilities in an integrated way. Although the learner may develop a variety of skills, including language skills such as reading, listening, and grammar, speaking is the skill that benefits the most from technology-assisted language learning, and there are several apps that allow users to record both audio and video. Computers give students access to different electronic or digital products, making learning interesting and, also, making teaching more productive in terms of improvements. Additionally, one of the great benefits of the growth of multimedia is grammar practice by means of grammar and vocabulary drill programs. According to the above-mentioned authors [12, 3, 1], the advantages of using information technology for language instruction are many, and the most significant ones include:

- individualization of learning;
- collaborative, pair, or group work on projects;
- multimodal exercises with feedback;
- vocabulary acquisition;
- voice recording and playback;

- collaboration and competition;
- a variety of resources including text reconstruction, cloze activities, sentence jumbles, crossword puzzles, and many others;
- writing process;
- investigational learning with large amounts of information.

In this context, teachers tend to have more positive opinions of technology in general and of integrating technology into learning in particular. Today, a huge amount of literature on the use of technology in education has been produced. There is a strong tendency to overemphasize the necessity of technology in education, but less is said about the teacher's role and the significance of being familiar with the most up-to-date and efficient technologies for creating digital educational resources. The main idea is to change the typical instructional strategy of teaching through technology-assisted interactive lessons. Because of this and the fact that students' learning patterns have changed, it is essential for language teachers to possess a high level of digital competence.

One aspect related to a teacher's digital skills is the development of digital educational resources. By „digital educational resource", we mean didactic material in an electronic format that is presented with the help of a computer or mobile device and used by the teacher to achieve the educational objectives of the lesson. We will list some examples of digital educational resources: digital textbooks, electronic presentations, electronic dictionaries, virtual labs, didactic films, virtual simulations, etc. [4]. Digital educational resources are used for the interactive presentation of the content and for various methods of understanding didactic material. Based on the standards of digital skills for teachers [8] and the standards of digital skills for students [9], the foreign language secondary school curriculum suggests that the teacher should use illustrative, attractive, and modern didactic materials (collages, images, conceptual maps, infographics, and digital products), as well as modern educational tools (computers, mobile phones, and interactive whiteboards). Fun activities and exercises (simulations; viewing digital resources; role-playing; brainstorming; debates), as well as digital supports (films; collages; comics; websites; various software; and so on), are also recommended [6, p. 124].

Activities for developing a digital interactive textbook (English, level A 2.3)

The digital interactive textbook for English language level A 1.2 (Figure 1) was created with the help of the MDIR Constructor 2.0 application [2]. This application was developed within the project „Development and implementation of interactive digital textbooks in pre-university education", State Program 2020-2023 (project coordinators: Nicolae Balmuș and Tatiana Chiriac). The digital textbook uses the pdf version of the printed English language level A 1.2 textbook [7] as background. In this case, the page displays of the digital textbook are identical to the pages in the printed textbook. The most important difference of the digital textbook is its ability to be interactive and multimedia, relying on plenty of e-exercises and tools.

Based on the tools integrated into the MDIR Constructor 2.0 application, teachers can create their own didactic materials, adapted to the needs of the students. The content of the digital textbook is supplemented by the teachers with various types of interactive educational resources and multimedia content (audio and video) important for accomplishing educational activities in the classroom. Thus, in the application interface, the user identifies tools for creating (educational resources will be created on the pages or in the fields of the book) and editing (in the given case, the educational resources can be inserted on the pages or in the fields of the textbook).

**Figure 1.** Digital textbook interface, English level A 1.2.
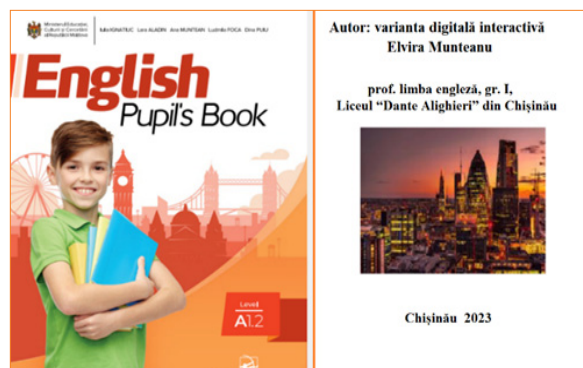
The English e-textbook was filled with audio and video resources, which were created within the virtual services pilot program run by Peace Corps Moldova in collaboration with America House Moldova and the NGO Academy for Innovation and Change through Education with the support of the Ministry of Education and Research of the Republic of Moldova in the period April – June 2022. The recordings were released with the support of Virtual Services Pilot Program participants Brooke Nagle, Grete Phillips, Linda Wessling, Marquis Walsh, and Patty Harlan. (https://americahouse.md/moldovan-textbooks-read-aloud-virtual-library/).

The interactive digital activities recommended by the foreign language curriculum created or inserted into the English digital textbook through this tool, level A 1.2, are audio, video, images, ppt presentations, documents, tests for choosing the correct answers, true or false, the Hot Potatoes applications, quizzes, and image quiz, and different kinds of crossword. Based on the investigations and the analysis of activities and products recommended by the National Curriculum for Foreign Languages [6], the following interactive exercises were developed and included: eliminating intruding words; ordering the events of a text based on the logical sequence; identifying statements as true or false; ordering the words in the sentences; reading a text aloud, filling the spaces with the appropriate words; choosing the correct option; and doing association exercises.

The following image shows a digital interactive true-false exercise on the topic „Does he ride his bike?” Exercise 1, page 12. For solving this exercise, the students should tick the correct answers and then access the button „Checking”. For solving this exercise, the students should tick the correct answers and then access the button „Checking”.

Figure 2. True/False, Theme: „Does he ride his bike?” Exercise 1, page 12.
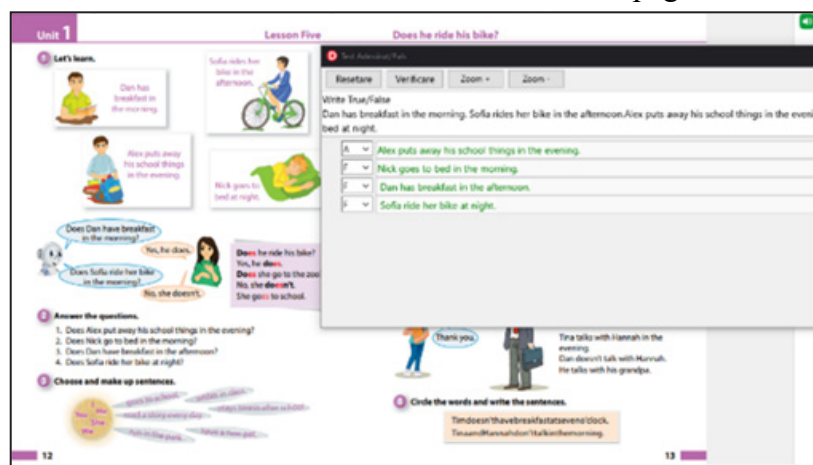
Another example is „Choose the correct answer”. This exercise was included in Chapter 4, Lesson 1, Exercise 4 (Figure 3).

**Figure 3.** Choose the correct answer, Chapter 4, Lesson 1, Exercise 4, page 62.

The MDIR Constructor 2.0 application offers a number of tools for producing digital instructional materials, as was already stated. Another type of educational resource is called „image texts" or „tagged texts". These activities are very attractive, captivating, and exciting for students. An example of this type of exercise was created in Chapter 1, Lesson 2, Exercise 1 (see Figure 4).

In this way, several types of interactive activities were created on the pages or fields of the English digital textbook. As a result, the English digital textbook level A 1.2 is valuable and helps students have all the resources required for learning the subject matter.

With the spread of technology, the functionality of digital textbooks has greatly expanded. Currently, there are many applications on the market that allow users to introduce and edit qualitative images, audio recordings, video clips, parts of texts, animations, and other educational resources. The digital textbook incorporates search features, zoom options, embedded tools, and useful applications, thus making that type of modern e-textbook much more sophisticated than in years past. Also, digital textbooks can be updated more often than printed textbooks, which is why they have a positive impact on the learning environment.

Figure 4. „Image Texts/Tagged Texts", Chapter 1, Lesson 2, Exercise 1, page 8.
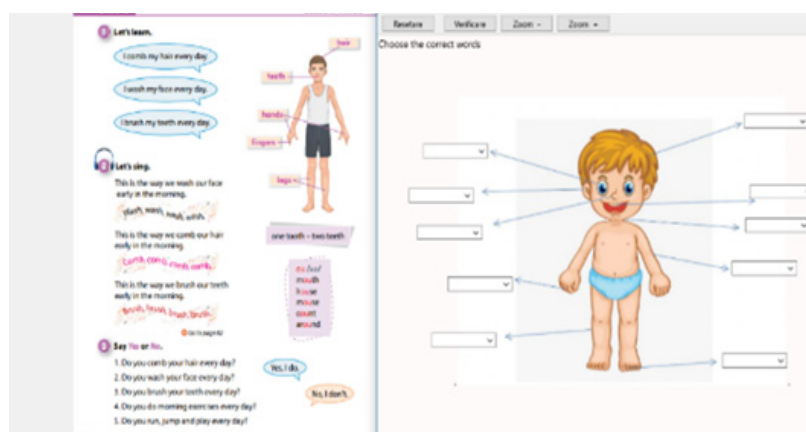
Conclusion

As mentioned, the digital textbook introduces a new paradigm for the teaching-learning-evaluation process. The advantages offered by the interactive character of the digital textbook promote metacognitive structures, association abilities, and the integration of knowledge. It integrates theory and practice and fosters students' curiosity through technological exploration.

Modern technology is widely used by students today, so it's essential to investigate how it may be incorporated into educational activities since it supports learning.

Digital textbook development must correspond to the national guidelines and particulars of in-class instruction, taking into account technological features and online technologies. The entire process, from design to digital content distribution, must be covered.

References:

1. ALSALEEM, B. *Computers in Teaching English Language* European Journal of Scientific Research. ISSN 1450-216X / 1450-202X. Vol. 155, No 4 March, 2020, pp. 463-468. https://www.researchgate.net/publication/349829219_Computers_in_Teaching_English_Language#fullTextFileContent (accessed on 09.03.2023).
2. BALMUS, N. MDIR Constructor 2.0 software pentru crearea manualelor digitale interactive. In Proceedings of the National Virtual Education Conference, 18th online Edition, October 31, 2020, Modern Technologies in Education and Research - MODELS & METHODOLOGIES, TECHNOLOGIES, SOFTWARE SOLUTIONS. http://c3.cniv.ro/.
3. BEATTY, K. *Teaching and researching computer-assisted language learning* – 2nd ed. Pearson Education Limited 2003, 2010. https://ebook.upgrisba.ac.id/ebook/bahasa/teaching-researching-computer-assisted-language-learning-pearson-education-esl/download (accessed on 12.03.2023).

4. CHIRIAC, T. Cadrul psihopedagogic şi metodologic al manualului digital. În: Acta Et Commentationes Sciences of Education, 8(1), 105-114. https://doi.org/10.36120/2587-3636.v8i1.105-114.
5. Concepţia manualului digital, Ministerul Educaţiei al Republicii Moldova, Chişinău 2015. https://mecc.gov.md/ro/content/conceptia-manualului-digital (accessed on 10.01.2023).
6. Curriculum naţional la limba străină pentru clasele a V-IX, Chişinău 2020. https://mecc.gov.md/sites/default/files/limba_straine_gimnaziu.pdf (accessed on Jan 25 2023).
7. IGNATIUC, I., ALADIN, L. [et al] English. Pupil's Book: Level A1.2 / Arc, 2019 (Tipogr. ,,Balacron"). http://ctice.gov.md/manuale-scolare/ (accessed on 18.02.2023).
8. Ministerul Educaţiei al Republicii Moldova. Standarde de competenţe digitale pentru cadrele didactice din învăţământul general. Chişinău, 2015. https://mecc.gov.md/sites/default/files/cnc4_finalcompetente_digitale_profesori_22iulie2015_1.pdf (accessed on 10.01.2023).
9. Ministerul Educaţiei al Republicii Moldova. Standarde de competenţe digitale ale elevilor din ciclul primar, gimnazial şi liceal. Chişinău 2015. https://mecc.gov.md/sites/default/files/cnc4_final_competente_digitale_elevi_22iulie2015_1.pdf   (accessed on 10.01.2023).
10. Strategia de transformare digitală a Republicii Moldova pentru anii 2023–2030 (STDM 2030). Concept. https://particip.gov.md/ru/document/stages/anunt-privind-initierea-elaborarii-strategiei-de-transformare-digitala-a-republicii-moldova-pentru-anii-20232030-stdm-2030/9355 (accessed on 10.01.2023).
11. VLADA, M. Ce este un manual digital? http://mvlada.blogspot.com/2014/09/ce-este-un-manual-digital.html (accessed on 02.02.2023).
12. WARSCHAUER, M., & HEALEY, D. (1998). *Computers and language learning: An overview*. In Language Teaching, 31, 57-71. https://education.uci.edu/uploads/7/2/7/6/72769947/computers_and_language_learning-_an_overview.pdf (accessed on 14.03.2023).

Data About Authors:
Tatiana CHIRIAC, associate professor, ,,Ion Creangă" State Pedagogical University of Chişinău.
ORCID: 0000-0002-6122-1937

Nicolae BALMUŞ, associate professor, ,,Ion Creangă" State Pedagogical University of Chişinău,
ORCID: 0000-0002-0491-2918

Elvira MUNTEANU, English teacher, 1st degree, Lyceum ,,Dante Alighieri", Chişinău.
ORCID: 0009-0002-8250-5186