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ELECTRONIC TEXTBOOK AS AN INNOVATIVE TOOL IN EDUCATION

Abstract: *The article demonstrates the development of the electronic textbook "Cognition" on the Turbosite platform. The advantages and results of the study are given when using this electronic textbook in the process of teaching English. It was concluded that thanks to the colorful design, the presence of various forms of presentation of educational material, it allowed students of different ages to study the material much faster and better. The main difference between the electronic version of the textbook and the traditional paper version is in the open system of the first. If the information becomes outdated and needs to be updated, then the paper version of the textbook will have to be issued in a new edition, which will take more time and high financial costs. And in the electronic version, you can easily add, replace or delete information without much financial and time losses.*

Key words: *innovative technologies, electronic textbook, TurboSite, education, students.*

Introduction

Thanks to the accelerated introduction of digital technologies, the modern education process has undergone dramatic changes, the rapid growth of scientific knowledge and the active introduction of information and communication technologies (ICT) in many areas of human life poses new requirements for future specialists. Modern students are very different from students of previous years: they use digital resources much more efficiently and are more adaptable to technical innovations. At this stage, students can perform several tasks at the same time, have stable access to the Internet and thus become dependent on a continuous flow of information. Smartphones, tablets, laptops are used to access and store information.

Today, many questions arise in the field of education, as the amount of new information increases daily, and the urgent need for qualified specialists exists, as before, but at the same time, the amount of time allocated for obtaining this knowledge cannot be increased. Given the scientific and technological progress, there is also a need to retrain existing specialists. For these reasons, the problem of improving the quality and efficiency of the educational process is more relevant than ever.

Main part

Modern computer technologies are widely used in all forms of software: didactic materials, teaching aids, examples of practical and laboratory work, learning platforms have been developed, and many programs for creating electronic textbooks have also appeared. As a result, the efficiency and quality of education increases significantly. Electronic textbooks are considered the most useful information and communication forms. They can be used at all levels of education: schools, colleges, universities. And with a distance form of education or with learning and self-development throughout life, this type is completely universal.

Electronic textbooks allow solving a number of pedagogical tasks: basic training in a particular discipline; familiarization with its basic concepts and terminology; verification, control and evaluation of knowledge; updating knowledge, skills and abilities; increasing the level of motivation in the study of the material.

An electronic textbook (ET) is a set of information, methodological and software tools that is designed to study a particular discipline and includes tasks, questions for self-control and testing, and also involves feedback.

The most important thing that electronic textbooks can give is savings. Save space in your backpack, bag, as textbooks for all subjects will be on one device. Save time and effort on finding the right module, chapter, section, etc. Electronic textbooks minimize financial costs. Most often, difficult situations associated with a shortage of textbooks arise in schools, where students are forced to order and buy a set of necessary books. And electronic textbooks, depending on the cost of buying out the program itself for their creation, will require significantly lower financial costs; in some cases, textbooks can be provided to students completely free of charge [1].

The electronic textbook – "Cognition", which is presented in this article, was created on the basis of the Turbosite program. Turbosite is a free static HTML website builder. The program is suitable for creating a blog, portfolio, e-book, manual or textbook. In the course of work, projects can be "generated" and then viewed in any browser. What is special is that an electronic textbook created on this platform can be accessed without an Internet connection. Absolutely everything that was uploaded by the author will function and work, with the exception of links to sites. Online sites cannot be displayed in a browser without a connection to the World Wide Web. The program with a Russian-language interface is available for download on the official website of the Brullworfel developer. Requires installation on a computer with Windows operating system (XP, 7, 8, 10, Vista) [2].

The textbook is called "Cognition" not by chance, from English the word is translated as "Knowledge", i.e. students of all ages have the opportunity to study educational material both with a mentor and independently (Fig.1). The textbook consists of two main sectors: Grammar sector and Reading sector. For the grammatical sector, 10 main topics were selected, in the study of which students have difficulties. Topics were selected with the help of a sociological survey of students in schools, colleges and Shakarim University, Semey. Each topic has 3-4 subparagraphs: theoretical material with tables and figures, presentations, videos, exercises to test knowledge and links to online tests or links to additional material on a particular topic (Fig. 2). The student can easily return to the section that causes certain difficulties and read it again, after completing the exercises, send it to the teacher for verification, so the connection with the mentor is not interrupted. The role of the teacher in this case is to lead, to direct the student to independent study, and not to be a source of information, as was the case in previous years.

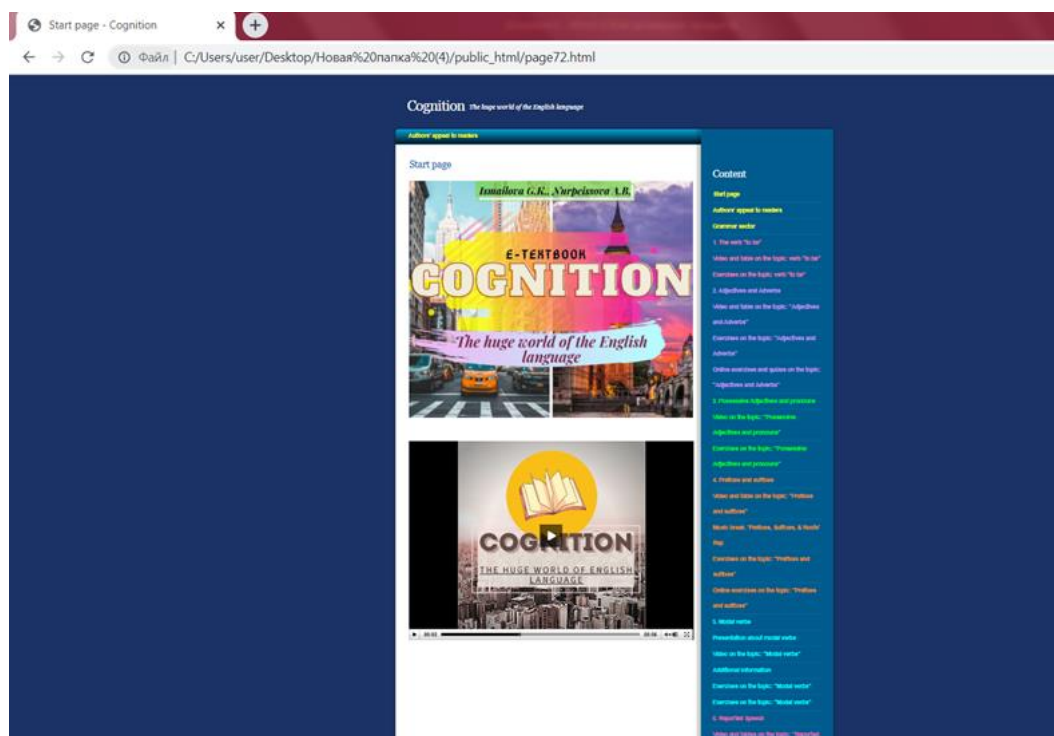


Figure 1 – Screenshot of the start page of the electronic textbook.

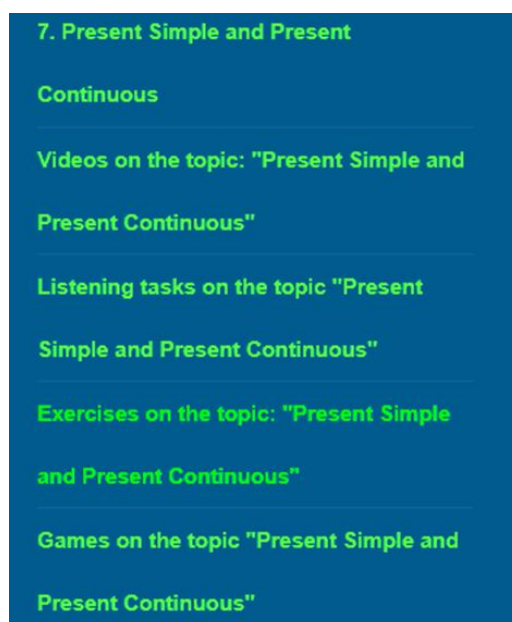


Figure 2 – Screenshot of the 7th topic of the electronic textbook "Cognition"

The addition of the "Reading" sector is the author's decision (Fig.3). After all, the development of reading skills and the replenishment of vocabulary should also be more cognitive in nature. Ordinary reading of texts is the last century. The authors previously noted that students do not understand classical works at all, do not know many foreign authors and do not know how to analyze the text correctly. Therefore, it was decided to insert an item with the "Text analysis" scheme into the "Reading" sector, which will help students to study the work more carefully, and understand its main idea; describe both protagonists and antagonists; determine the type, genre of text; highlight phraseological units, parallelisms, epithets, etc.

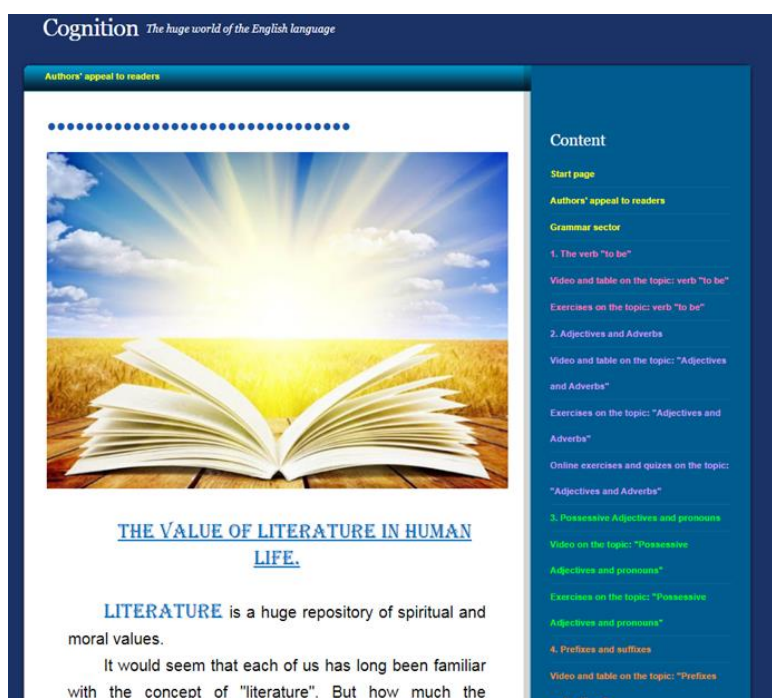


Figure 3 – Reading sector start page

Results and discussion

Within two months our product was used in practice. Participants: a second-year group of the Faculty of Philology and a group of teachers who attended additional courses in a foreign language. When conducting several classes, the electronic textbook "Cognition" was used. Already from the first lessons, he aroused interest among students, since all topics were colorfully

designed, the presence of various forms of presentation of material, both in text and multimedia formats, allows you to individualize the learning process; makes it possible to study the material much faster and better. *Practical* exercises were performed together with the teacher, and online tests were performed individually to test knowledge. Many participants positively noted that if a particular student does not have the opportunity to attend the lesson, then there is an opportunity to study and pass it on their own, while the student will not worry about missing the necessary material.

Conclusion

We can note a significant difference between the electronic format of the textbook and the traditional one. The paper medium assumes the final level of education, what is included in its modules and sections cannot be updated. The electronic version is an open system, you can supplement, correct, modify information. An electronic textbook can contain material not only at different levels, but also in a variety of presentation forms. The visibility is significantly higher than in the printed version [3].

The electronic textbook "Cognition" developed by us on the Turbosite platform has shown its practical significance in foreign language classes and can be used as an additional teaching aid of a new format.

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ЭЛЕКТРОНДЫҚ ОҚУЛЫҚ БІЛІМ БЕРУДЕГІ ИННОВАЦИЯЛЫҚ ҚҰРАЛ РЕТІНДЕ

Аңдатпа: Мақалада Turbosite платформасында «Cognition» электронды оқулығының әзірленгені көрсетілген. Зерттеудің артықшылықтары мен нәтижелері осы электронды оқулықты ағылшын тілінде оқыту процесінде пайдалану кезінде беріледі. Түрлі-түсті дизайнның, оқу материалын ұсынудың әртүрлі формаларының болуының арқасында әртүрлі жастағы студенттерге материалды әлдеқайда жылдам және жақсы меңгеруге мүмкіндік берді деген қорытынды жасалды. Оқулықтың электронды нұсқасы дәстүрлі қағаз нұсқасынан басты айырмашылығы біріншісінің ашық жүйесінде. Егер ақпарат ескіріп, жаңартуды қажет ететін болса, онда оқулықтың қағаз нұсқасын жаңа басылымда шығаруға тура келеді, бұл көп уақыт пен үлкен қаржылық шығындарды талап етеді. Ал электронды нұсқада көп қаржылық және уақыт шығынысыз ақпаратты оңай қосуға, ауыстыруға немесе жоюға болады.

Түйін сөздер: инновациялық технологиялар, электронды оқулық, TurboSite, білім беру, білім алушылар.

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ЭЛЕКТРОННЫЙ УЧЕБНИК КАК ИННОВАЦИОННЫЙ ИНСТРУМЕНТ В ОБРАЗОВАНИИ

Аннотация: В статье продемонстрирована разработка электронного учебника «Cognition» на платформе Turbosite. Приведены преимущества и результаты

исследование при использовании данного электронного учебника в процессе обучения английскому языку. Были совершены выводы, что благодаря красочному оформлению, наличию разнообразных форм подачи учебного материала позволило обучающимся разных возрастов намного быстрее и качественнее изучить материал. Главное отличие электронной версии учебника от традиционной бумажной в открытой системе первого. Если информация становится не актуальной и ее требуется обновить, то бумажную версию учебника придется выпускать в новом тираже, что займет большее количество времени и высоких финансовых затрат. А в электронную версию можно легко добавить, заменить или же удалить информацию без особых финансово-временных потерь.

Ключевые слова: инновационные технологии, электронный учебник, TurboSite, образование, обучающиеся.

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ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ РАБОТЫ ТЕПЛОСНАБЖАЮЩИХ ПРЕДПРИЯТИЙ НА ПРИМЕРЕ ПРИМЕНЕНИЯ БИНАРНОГО ЦИКЛА ВОДА – ФРЕОН-410

Аннотация: В настоящей работе рассматривается возможность применения в системах теплоснабжения городов цикла бинарной паротурбинной установки, в которой нижний цикл осуществляется насыщенным паром низкокипящего рабочего тела (НРТ), а в данном случае фреона-410. Преимуществом данного вида фреона является то, что он практически нетоксичен, химически стабилен, а в фазовых превращениях поддерживает постоянную температуру. В области высоких температур принимается в качестве рабочего тела вода (водяной пар), которая имеет такие преимущества, как доступность и безопасность, а недостатки – это ограниченно низкая критическая температура и высокая теплоемкость. В работе определен термический коэффициент полезного действия бинарного цикла и установлена его зависимость от термического коэффициента полезного действия цикла Карно.

Ключевые слова: бинарный цикл, паротурбинная установка, эффективность, цикл Карно, фреон-410, КПД (коэффициент полезного действия).

В Восточно-Казахстанской области во время отопительного периода, средняя продолжительность которого составляет 240 суток, наблюдаются низкие температуры,