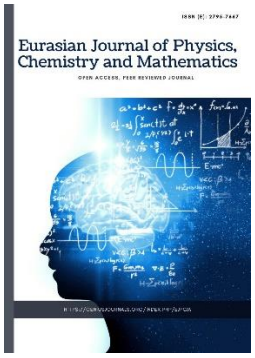

Peculiarities Of Using Digital Educational Resources In Physics Teaching

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ABSTRACT

The article examines the role of digital educational resources in education and their impact on the development of society as a whole. The ways and possibilities of optimizing physics teaching based on digital resources are shown. The importance of digital educational resources for obtaining quality education is shown. In this work, it was proposed to use digital educational resources to study a section of the general physics course for students. It is shown that a digital educational resource can fully provide knowledge, assimilation and consolidation of educational material and will contribute to the training of qualified personnel in the field of natural sciences.

Keywords: education, knowledge, digital educational resource, information, educational technology, information technology.

Introduction

Education, being an important element of the social system, is determined by the state and development trends of society, and, in turn, actively influences them. Consequently, changes occurring in the system of social relations entail modifications in education. Education provides its owner with the most favorable conditions for choosing a life path, increasing mobility and social security. It is education that helps to anticipate social and personal problems, ways to solve them, and actively influences the development of society. Consequently, the teaching of the disciplines being studied, in particular, the teaching of physics, must keep up with the times, i.e. using modern electronic means and existing pedagogical technologies [1]. Pedagogical technology is a set, a special set of forms, methods, methods, teaching techniques and educational means, systematically used in the educational process, based on declared psychological and pedagogical guidelines. The didactic aspect of educational technology has been studied by a number of scientists [2]. Various approaches to the classification of educational technologies have also been proposed [3]. Among the pedagogical technologies the following can be noted:

- algorithmization of learning,
- programmed training,
- technology of collective educational and cognitive activity,
- problem-based learning technology,
- learning optimization technology,
- learning intensification technology,
- developmental education technology,
- differentiated learning technology,
- person-centered learning technology,
- level differentiation technologies,
- heuristic learning technology,
- computer teaching technologies and others.

New pedagogical technologies, and any others currently used, are unthinkable without the widespread use of new information technologies, computer ones in the first place. It is new information technologies that make it possible to fully reveal the pedagogical and didactic functions of these methods and to realize the potential inherent in them. Undoubtedly. a person trusts the organ of vision, and more than eighty percent of information is perceived and remembered through the visual analyzer. And, according to most psychologists and teachers, the use of information technology during classes activates the mental processes of students. Perception improves, attention is focused, i.e. cognitive processes are activated. Today, information technologies include computer programs and educational systems, electronic textbooks, teaching aids, virtual laboratories, knowledge testing systems, systems based on multimedia technologies, etc. As is known, digital educational resources are easy-to-use information sources that contain text, digital, speech and other information [4]. In educational institutions, they can be used as additions to traditional modules and conduct dynamic, interesting, unforgettable, modern classes, because digital educational resources do not replace traditional methodologically appropriate teaching tools, but only complement and expand their capabilities. And this, in turn, increases the efficiency and quality of training [5].

Experimental part

The authors of this work developed and created digital educational resources for a section of the general physics course. The goal of the discipline is to present electromagnetism as a theory that arose as a result of generalization of observations, practical experience and experiment within the framework of lectures, practical and laboratory classes. The implementation of which involves using the entire arsenal of opportunities, including an innovative approach to teaching the course, to provide the undergraduate student with theoretical and practical skills in understanding the fundamentals of electromagnetism and acquiring the necessary competencies that he will be able to demonstrate upon completion of the discipline.

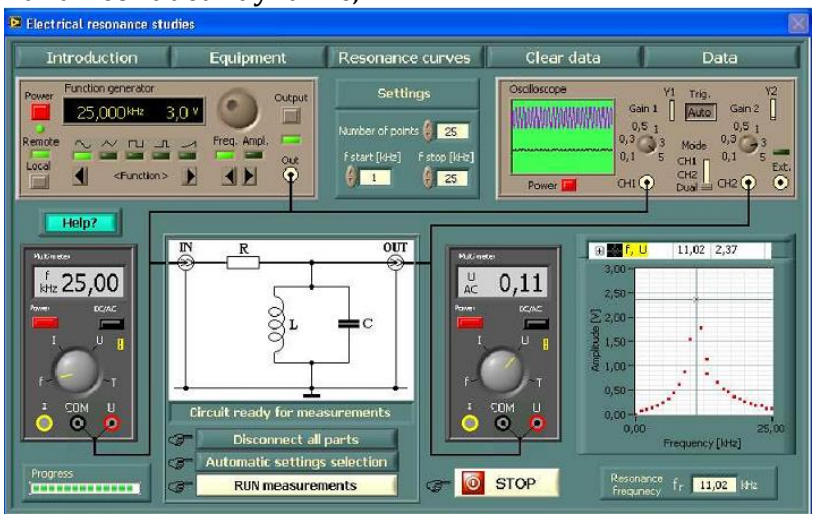

Figure 1

Digital educational resources were developed using Adobe flash professional CS5.5 (Figure 1). Today flash technologies, i.e. interactive web animation technologies combine many powerful technological solutions in the field of multimedia information presentation. Actionscript is an object-oriented programming language that adds interactivity, data processing, and more to the content of Flash applications.

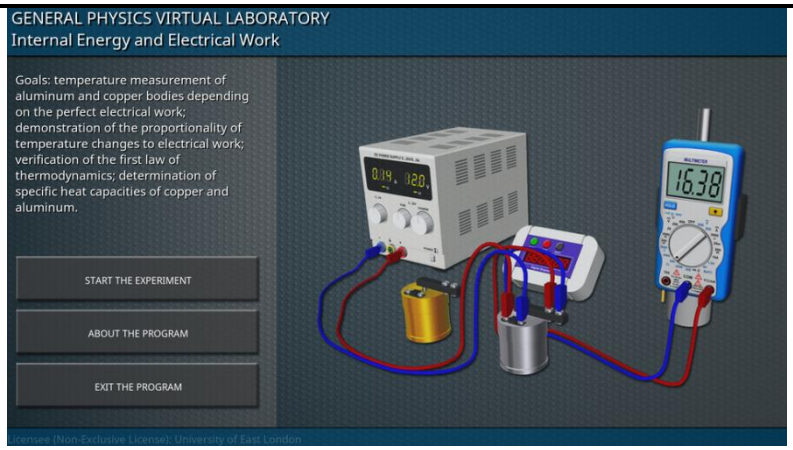

Figure 2

The structure of the proposed digital resource is presented in Figure 2. Theoretical material, laboratory work, and test work were converted into Print2Flash (Figure 2).

The theoretical material of the digital educational resource is presented using illustrated slideshows, animation module "physical model", interactive educational didactic materials modules: "Did you know", "glossary", "bibliographic links", etc. For clarity of presentation of theoretical materials, fragments of physical experiments demonstrating the fundamental nature of many theories, laws, postulates, etc. Control modules with test tasks and tests are provided for all topics. I would like to note that a digital educational resource can provide control and self-control over the assimilation of educational material. In our digital resources, the "test" module is created using Adobe flash professional CS5.5 and programmed in Actionscript.

Conclusion

Thus, this work presented the prospects for using digital educational resources, using the example of a course we created using the Adobe flash professional CS5.5 program and showed all the capabilities of this program. To consolidate theoretical material, the proposed electronic tools allow you to include control and test tasks of different formats. In addition, it is shown that a digital educational resource, in addition to everything else, can provide control and self-control over the assimilation of educational material. Using the developed digital educational resources, you can conduct an interesting, exciting lesson for both the teacher and the student.

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