Interactive methods of teaching Physics on MOODLE Platform in educational process

Nadezhda S. Kravchenko, Elena V. Lisichko, Ekaterina I. Postnikova, Natalia V. Daneikina
Tomsk Polytechnic University
Pr. Lenina 30, Tomsk, Russian Federation
kravchenko@tpu.ru, elenalis@tpu.ru, katyapost@tpu.ru, mischenko@tpu.ru

Abstract

In modern conditions of society development, improvement of production technologies and economic globalization, new demands to the training of engineers appear. Federal State Educational Standard (FSES) facilitates creation and search for new methods of organization of independent work of students. The introduction of interactive teaching methods in educational process activates the students. The paper is devoted to the methods of implementation of educational environment Moodle for the efficient organization of independent work. Module electronic course structure is presented, designed to meet the individual learning paths of each student, taking into account the specificity of training and the requirements for learning outcomes. Various forms of work in e-learning courses in physics have been tested. The learning possibilities provided by e-learning course are shown. Methodology of experiment and the analysis of the results of its formative stage of pedagogical experiment are presented. The dynamics of change in the coefficient of learning outcomes is shown after testing students on topics of general physics. Disadvantages of using e-learning course are indicated. The conclusion about the effectiveness of the proposed method and the use of e-learning with the use of information educational environment for the improvement of the efficiency of teaching physics to engineering students is made.

Keywords
methodology, experience, independent work, interactive educational environment, Moodle

Biography

Nadezhda Stepanovna Kravchenko is an Associate Professor of the Department of Experimental Physics, Institute of Physics and Technology, National Research Tomsk Polytechnic University. Sphere of interests: E-teaching in Technical Institutions of Higher Education in the sphere of Physics; project activity of the students, design of information educational environment as a tool for organization of educational programs in Technical University; methodology of teaching Physics in specialized classes and Technical University based on joint project activity of students.

Elena Vladimirovna Lisichko is an Associate Professor of the Department of Experimental Physics, Institute of Physics and Technology, National Research Tomsk Polytechnic University. Sphere of interests: E-teaching in Technical Institutions of Higher Education in the sphere of Physics; project activity of the students, design of information educational environment as a tool for organization of educational programs in Technical University; methodology of teaching Physics in specialized classes and Technical University based on joint project activity of students.

Ekaterina Ivanovna Postnikova is an Associate Professor of the Department of Experimental Physics, Institute of Physics and Technology, National Research Tomsk Polytechnic University. Sphere of interests: E-teaching in Technical Institutions of Higher Education in the sphere of Physics; project activity of the students, design of
information educational environment as a tool for organization of educational programs in Technical University; methodology of teaching Physics in specialized classes and Technical University based on joint project activity of students.