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Learning and Teaching With Technology

E-learning as a motivation in teaching physics

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Abstract

The paper focuses on the E-learning Physics course, which we introduced in a test form in the teaching of physics at the University of Defence in Brno. Previously, traditional form of teaching has ceased to be unattractive for students, so we have introduced this modern didactic tool and thereby we increase student's interest in studying physics. We introduce E-learning course students through an interactive whiteboard. This kind of approach of the teaching is desirable. The paper presents a multimedia presentation on the topic of optics, used in teaching physics. Particularly important in optics is a graphical interpretation, allowing students to better understand the subject matter. The inclusion of interactivity and multimedia elements in the teaching of physics serves as a convenient means of awakening interest in students and enhances students' self-logical thinking. Further studies using e-learning is very effective due to the fact that each individual person can choose their rate of progress. Learning is not restricted by the lecturer or another student.

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Key word: E-learning; Physics; Motivation

1. Main text

This paper presents the output of Specific research at the University of Defence in Brno. The project is the E-learning course at "Physics", applicable to teaching physics at the baccalaureate level. E-learning course is in testing phase. The introduction of the modern teaching technology into vocational training at our university is important because through them can motivate students and enhance their interest in the study. The course is created in the Moodle software, which is by the University of Defence technically supported.

Character of physics teaching environment is so specific that the creation of e-learning tools was quite complicated. The authors try to incorporate not only distance education, but also through e-learning on campus with the help of a tutor. This is developed to engage in students' individual aspects separately, but still there is the opportunity to consult directly with the teacher. Which is the increased efficiency of work, where students can devote substantially more problems that just makes them wrong and not limited by standard teaching.

Our goal is not only prepare students for an exam in physics, but also the intention is to prepare students flexible, able to work in an interactive environment. As stated in [1]: University knowledge transfer must be understood as a

dynamic, complex process, open to changes or new conditions, not only able to provide graduate knowledge content, but also generate funds for the acquisition of certain characteristics, habits and skills to meaningfully manipulate them.

1.1. Methods

For creating e-learning course was used the software package Moodle. Methodology is based on partial steps that can be characterized by the following algorithm:

- Analysis of current situation and its subsequent evaluation.
- Theoretical treatment of tackle.
- Subsequent to the implementation of the Moodle software.
- Applications in teaching.
- Giving motivational presentation.

E-learning course is being pilot version that is still being developed and modified. The course is constantly improved through knowledge gained from the introduction to teaching. After reaching the set targets for increasing the current interest of the students was created motivational presentations on the interactive whiteboard.

1.2. E-learning course

E-learning course is composed of 16 topics, which are discussed in both semesters of the first year of bachelor study (8 of 8 in the winter and summer semester). Each topic is the content of one seminar, which follows on from theoretical lecture. The theoretical lectures are arranged important physical knowledge and the students are familiar with the physical phenomena and regularities in the field. It can be assumed that they are able to handle e-learning course without help of teacher and they are able to solve most numerical tasks independently. This course is used in addition traditional teaching and thanks to him the students are able to successfully manage object physics.

The course is divided into five sections in each topic:

1. The basic difficulty - Elementary numerical task. To solve these problems is sufficient knowledge of high school.
2. Medium difficulty - Counting problems that are addressed in the seminar. For these tasks, it is assumed that the students solved without much effort.
3. Higher difficulty - Counting problems that are addressed in the seminar, but you need an example of a complete interpretation of the teacher.
4. Theoretical test - in which the student verify that the acquired knowledge is sufficient. The test serves only as homework.
5. Theory - Interpretation of the curriculum in this topic, which is referenced in the individual steps in solving examples. Solving problems is extended to include comments explaining the steps that refer to the theoretical part of the course.

We try to apply a course in different ways. In this paper we will introduce one of the possible forms of applications, is a multimedia presentation.

We would like to mention that E-learning course might be used by students individually on separate classroom computer, but can also be used in a group setting around an interactive whiteboard. [7]

Multimedia presentation -

Motivation in e-learning students is one of the basic problems. We must realize that more effective educational journey is seen as a "blended learning", which is conceived in the narrower sense as a mix of e-learning activities and classroom teaching. If e-learning will add other elements of distance education, then we reduce some of the

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