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THE SIGNIFICANCE OF MODERN PEDAGOGICAL TECHNOLOGIES IN TEACHING TECHNICAL SCIENCES IN HIGHER EDUCATION

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ABSTRACT

The article deals with the modern pedagogical technologies in teaching process of technical sciences. In other words, pedagogical technology is the innovative form of teaching, methods and tools help to improving the condition in educational process. To create a new pedagogical technology is very challenging and time-taking. One of the important parts of improving teaching is to practice and work hardly. Article analyses the impact of modern pedagogical technologies on teaching technical sciences to get result in higher education.

KEYWORDS: *Case Study, Simulation, Discussion, Deliberations.*

INTRODUCTION

Based on my previous research and comparing many new reviewed papers written by different researchers, it has become clear that education of technical sciences, especially in higher education is still in crisis in many parts of the world. In this context, modern problems related to the introduction of educational technologies will be identified.

The use of advanced pedagogical technologies with modern information technologies creates enormous opportunities for society. Nowadays, reforming and improving the continuous education system of country, which it has been on the path of independent development, it has led to a level of state policy that promotes the introduction of advanced pedagogical and information technologies, increasing the effectiveness of education.

Pedagogical technologies are used to teach in every sphere in all education of country. Pedagogical technologies - intelligent design of ways to achieve optimal pedagogical functions in the given or existing environment.

METHODOLOGY

Simulation. Students perform a particular activity in circumstances as close to the conditions of the real situation as possible. It is hard to adequately teach some parts of physics without experiments, or without the use of computers, multimedia and its applications. This is especially true for introductory courses, where motivating the students is very important. Sometimes we do not have dangerous materials or equipment available in the laboratories or classrooms; in these cases we should use the pre-recorded video files or simulation programs. A computer simulation is a model of real-life or a hypothetical situation on a computer. By changing variables in the simulation, predictions may be made about the behavior of the system. Computer simulation programs offer a unique opportunity for students to see and work with systems and substances that they would rarely, if ever, be able to actually practice with in reality. The use of simulations has many advantages. Using simulations dangerous experiments can be reconstructed, and running the simulation physics phenomena can easily be explained.

Discussion. Discussions occur when a group assembles to communicate with one another through speaking and listening about a topic or event of mutual interest. To illustrate, a group of learners convenes to discuss what it has learned. This is an educational method for solving controversial issues and specifying the contradictions. It consists of exchange of information for reconstructing the issue, clearing up the alternatives, their evaluation and consent on the final version. It requires a general understanding of the meaning of the basic terms used on the subject.

Deliberations. A technique very close to discussion. This is a method of dialogue through which teacher and students exchange information, share feelings, experience, thoughts and ideas, clear up points of view, formulate hypotheses, give certain opinions for evaluation and outline solutions. It is one of the main methods for team work, a basic step to the solution of each problem.

Brain attack (brainstorming, joint generation of ideas). This method gives the opportunity for numerous suggestions for solving a certain problem to be given in a short period of time. It is used to stimulate the creative activity of students. The teacher clearly and briefly lays the problem that needs to be solved and does that in a way that attracts the attention of students. They freely express ideas and opinions. The suggestions made get evaluated through discussion and eventually the most appropriate ones are selected in order to perform the motor task. In order to generate creative ideas, learners are asked to withhold judgment or criticism and produce a very large number of ways to do something, such as resolve a problem. For example, learners may be asked to think of as many they can for eliminating world hunger. Once a large number of ideas have been generated, they are subjected to inspection regarding their feasibility.

Inquiry. It is connected to a specific problem that needs to be solved. The inquiry drags into a joint discussion, into decrease of difference in opinion, into compromise thesis formulation. Inquiry learning is used when students are encouraged to derive their own understanding or meaning for something. For example, students are asked to find out what insulation acts as the best barrier for cold or hot environments. Experiments that are not teacher demonstrations are part of inquiry learning.

On-line instruction and learning. A self-directed and automated approach that utilizes hypermedia (internet browsers, etc.) for communication that generally provides independence from the architectural constraints of classrooms.

Presentation and lecture. Students listen to a person who talks about a topic. To illustrate, the teacher, or a guest speaker, tells the class all about the invention of the transistor.

CONCLUSION

Students of the 21st century need digital skills to leave the universities with an adequate knowledge. This is necessary for finding and keeping a good job. Therefore combining traditional methods with active learning and the use of videos during the lectures will more and more increase their attention in the digital world. Nowadays all top jobs require digital skills, the understanding how the digital world works around us or how to manage basic processes from home, or how to be in competition with others at international level. All these activities based on ICT increased students' academic knowledge and their core competencies.

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