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# INTERACTIVE VIRTUAL LEARNING IN THE VIRTUAL WORLD

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**Abstract**. Today, virtual reality (VB) is widely used in various fields, especially in computer systems, engineering and medicine. However, it remains one of the main barriers to education due to the high cost of conducting experimental research. This article discusses how VB and virtual entity technologies are used in education, and the advantages and disadvantages of using these technologies in the classroom. This interactive virtual learning is very convenient and effective. Today, it offers great opportunities to improve the quality of education by creating new methods and techniques. Undoubtedly, this increases the cognitive activity of students, requiring them to work on themselves in their teaching and research activities. Makes the learning process brighter and more interesting.

**Keywords:** Virtual entity, active learning, smart classrooms, e-learning, touch and interactive communication technology, virtual entity applications and devices.

## Introduction

The establishment of virtual universities abroad is recognized as a modern innovative pedagogical technology. The number of supporters of virtual education is growing. In countries where the system is in place, such as the United States, the United Kingdom, Germany, Korea, and Japan, there are several million higher education institutions a year. This is because distance learning is both more convenient and cheaper for users than traditional methods of learning in educational institutions, and most importantly, it allows users to learn at a time that suits them.

General methodological principles for the development of software systems for creating models of the organization of the virtual 3D university educational process. Today is the beginning of the application of virtual reality technologies and principles for the development of virtual reality applications. This methodological principle approaches the software in three areas: passive virtual being monitored by a non-human autonomous graphic image with sound, scripted virtual being presented to the user in a limited number of scenarios, image, sound

selection, interactive virtual being tracking is that the user can control the virtual environment on the basis of the laws of the world, created using a special device that can perform its function. In many IT organizations, the development of virtual reality applications is a collaborative effort involving project engineers, managers, and other stakeholders. [3]

The principles of creating an interactive virtual learning environment are as follows:

- Implement learning content as if students were participating in a normal natural learning environment;
- Encourage effective participation. Here you can see all the participants, the presentation file, information about the session;
- There will be an opportunity to implement the lesson through various learning scenarios and serious games. Office and learning environment modeling;
- Diversity of teaching aids. It includes presentations, a webcam, a file sharing app, and voting systems.
- Support for student group status;

Today, a number of systems for evaluating virtual education in foreign countries (Codeingame.com, vAcademia.com, fun-mooc.fr, rwaq.com, VirBela.org etc.). [1,2]

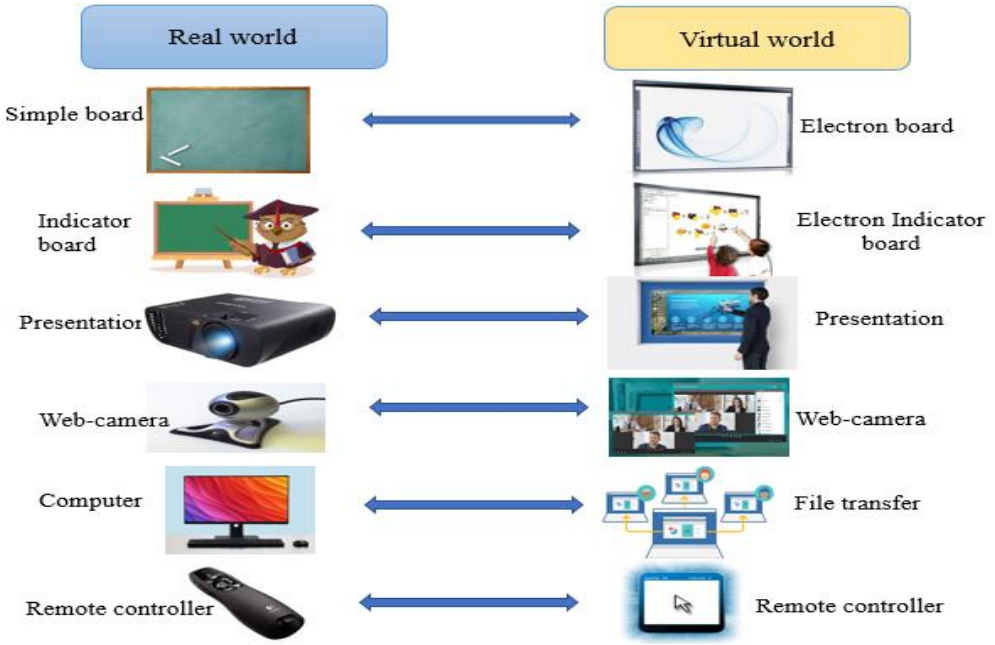


Figure 1: Difference between real and virtual world

**Advantages of vAcademia system:**

- ✓ Ease of communication with education management systems (LMS);
- ✓ All the necessary tools for training. Interactive whiteboard, presentations, app demonstrations, webcam, voice and text chat;

✓ The ability to record lessons in 3D is a new form of e-learning content

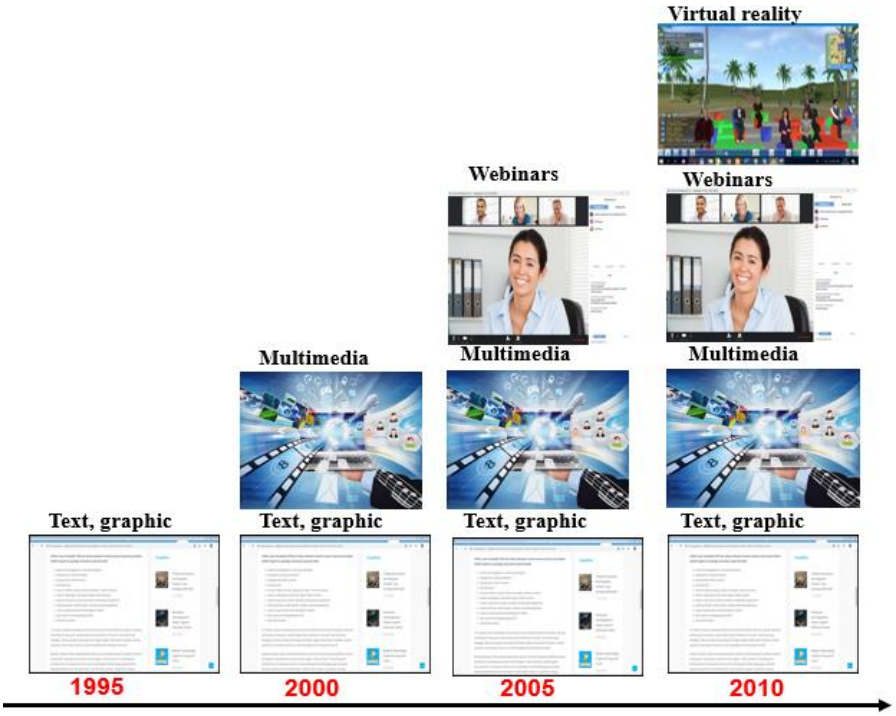


Figure 2: E-learning development tools

E-books, YouTube and MOOC all bring the same content to more students. Teaching methods are still the same as they were 50 years ago. There is no real innovation there. We can immediately give millions of student's free access to cutting-edge laboratories!

The development and implementation of a single platform for virtual education will allow our university and other higher education institutions of the Republic to work together. Learning controls are also implemented through this system, which allows users to log in, solve problems, listen to lectures, and perform virtual labs. The system is implemented through a distance learning portal. [4]

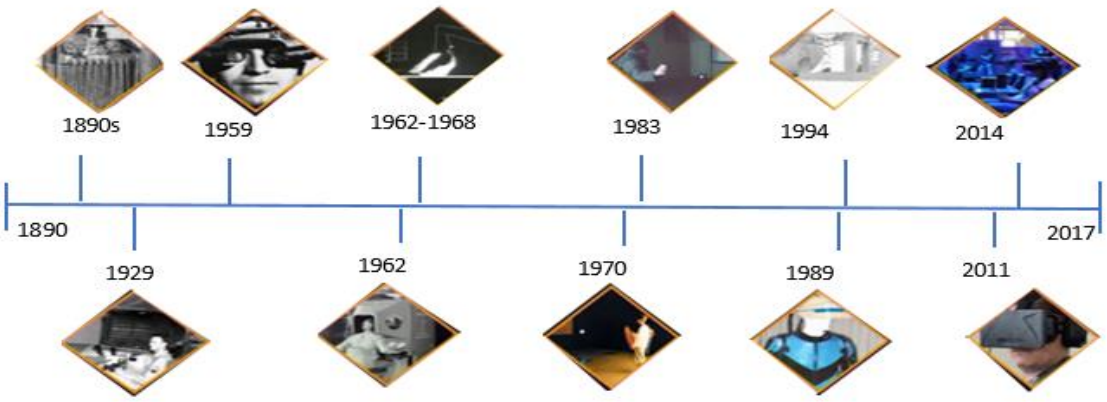


Figure 3: Evaluation of virtual reality step by step in the world.

Virtual reality helps create virtual objects that, when combined with the real world, provide students with an immersive learning experience. This allows students to visualize invisible systems or processes and enhances their learning experience. In addition, students tend to pay more attention when given a difficult task. Game elements, such as difficulty levels, points, ranking, virtual gifts, help motivate students and encourage them to acquire skills in the subject. Students interact better with each other when game elements are introduced into the learning process.


Figure 4: View virtual reality platform interface.

## Conclusion

The research project "Development of a national software system for the organization of the educational process of the virtual 3D university" will be prepared and tested at TUIT. Work is underway to create virtual generalized 3D models for the integrated learning environment of universities in the country.

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