



Accelerating Western Balkans University Modernization by Incorporating Virtual Technologies

VTech@WBUi

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ETHICS OF USING VIRTUAL AND AUGMENTED REALITY IN UNIVERSITIES

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Introduction

Virtual and Augmented reality (VR/AR) opens a new way of visualizing processes and actions. New forms of online education, distance learning initiatives, and virtual technologies inclusion have given rise to the new virtual university. From digital communication to the inclusion of VR/AR as a new methodology of teaching in shared electronic environments.

From simple presentations to the advanced virtual world, these new technologies improve the quality of teaching and learning. Students are getting more interactive and evaluating the process of learning using these technologies.

On the other hand, there is not enough scientific research knowledge of the impact of these technologies in the long run. As with all technological innovations, VR/AR comes with a positive and a negative impact, it can be used for good or bad.

The following sections are written to help universities build better regulations, ethics, and policies while considering the challenges that might arise while integrating these technologies into their programs and teaching and learning methodologies.



I. Curriculum update and adjustment

Professors and lawmakers in the university should add VR/AR to the curricula not just as a new technology to be taught but as a new form of teaching and learning. Adjustments need to be done on how to manage the use of this new technology during classes, to explain the role and clarify the advantages and the problems it might cause.

- a) The current curriculum should be updated and adjusted to deal with technological innovations and the integration of the new opportunities VR/AR provides for teachers and students.
- b) Defining dependencies on what is written and how it can be treated during virtual world classes.
- c) Changing students' evaluation forms.
- d) Adding more practical sessions than theoretical ones.

II. Software development and technical management

Multi-users can be included in this virtual environment, which allows lecturers to recreate "places" that are not created otherwise. Science-based subjects (e.g., medicine), and math-based subjects (e.g., physics) tend to be very suitable for virtual environments. Representing the real world in the virtual one without losing the sense of the real-world problems and situation is another thing that needs to be taken into consideration when designing virtual-world problems. Designing correctly the environment should be essential for solving the problem successfully.

- a) Lack of proper regulation on how to use virtual technologies might bring new ethical problems on how appropriately devices and software are being used.
- b) The quality of products developed for teaching usage should also be measured. Regulations and guidelines should be developed to regulate the quality of the software and the virtual environment and how to assure and measure the quality.
- c) Clearly define responsibilities between different types of stakeholders. The role of the lecturer and the role of the students. The role of the developer and the role of the person taking care of the devices.
- d) In case of non-respecting the regulation, what is the punishment? How to measure the impact of breaking the regulation and how to monitor if everything goes as it should.



- e) Team management vs. individual management. Professors teaching the same subject will use the same software or professor teaching the same subject will use different software based on their preferences and characteristics.
- f) Capacity building for all the users before using the virtual environment and equipment.
- g) Story-telling elements and capabilities while developing software for teaching purposes and usage.

III. Mental, health, and capacity problems

In the virtual world, students, and lecturers, who are part of the world, are too engaged in virtual activities and this might cause problems. This is not only the case of using the virtual world for universities but also for public and general use. Students' capacities, incompetence, and potential to adapt to the non-real world need to be considered.

- a) Students might experience traumas. What is the support of the university or the approach for including VR in teaching?
- b) Students might not be capable to adapt to this new form of teaching. What are the consequences?
- c) Older Professors might not be able to adapt to this new technology. In the case of mandatory use, how is going this problem to be managed?
- d) VR gear might harm students' eyes.
- e) Due to intense training, the virtual world might develop "dreaming beyond normality", living in a non-real world.
- f) Students might not develop the right perception of reality.
- g) Will this have a positive or negative impact on critical thinking capability?
- h) What is the impact on cognitive, affective, and behavioral processes?
- i) Students should be trained to adapt to experimentation and role-playing activities.
- j) Students should be allowed to repeat the lesson.
- k) Students should be encouraged to deal with their embarrassment while acting in the virtual world.
- l) Lack of access to virtual technologies should be taken into consideration.



IV. Human Rights

Collecting data from the reaction of students might help the lecturer to analyze data and the results but there should be regulations developed on how to save, record, analyze and protect those data.

- a) How will the data be collected?
- b) Where the data will be saved?
- c) Who will be responsible for accessing the data?
- d) How will students receive their evaluation?
- e) How will students express their right to contest the evaluation?
- f) What will be the security measurements for these data?
- g) What are the consequences and the punishment in case of data leakage?

V. Social Impact

- a) Chaining the requirements for employing lecturers and students' enrollment.
- b) Real human interaction versus virtual world interactions. This new form might have the same impact as social networks or distance learning which are challenging community relations and group interactions.
- c) What are the measurements to be taken to balance in-class interaction and the VR world?



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