



Accelerating Western Balkans University Modernization by Incorporating Virtual Technologies (VTech@WBUi)

WP3 - Deliverable D3.5

QUALITY ASSURANCE POLICY FOR TEACHING AND LEARNING

Project duration: 15/11/2019 - 15/11/2022

Due date of deliverable: 01/12/2020

Actual submission date: 12/02/2021

Version	Date	Change History	Author	Organisation
01	10/12/2020	Document drafted	Arbana Kadriu, Lejla Abazi Bexheti	SEEU
02	15/01/2021	First edition	Arbana Kadriu, Lejla Abazi Bexheti	SEEU
03	15/02/2021	First revision	QA meeting	Project partners
04	24/02/2021	Second revision	Arbana Kadriu, Lejla Abazi Bexheti, Albana Ndreu	SEEU, UAMD



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Introduction

Project Quality Committee (PQC) for VTech project has endorsed the Quality Monitoring Plan for the whole duration of the project. PQC will ensure the overall quality management of the project in terms of coordination and strategic leadership to the project implementation partners. The process of the end of project evaluation will be outsourced to an external evaluator to be able to measure the results of the project by the end-term of the project, with the prospects of the impact at the mid and long term.

Based on the main quality objectives defined in the Quality Monitoring Plan, PQC has established the Quality Policy on Teaching and Learning, which should ensure a commitment to continual improvement, that will be communicated and understood by all partners in the project. The aim of this policy is to identify all the effects that influence the project and ensure that the strategy and objectives concern these influences. All partners will need to periodically review this policy as necessary to ensure that any changes in context, interested parties or their requirements is reflected in the policy, and to determine whether objectives for each working package are affected. The Project Management should demonstrate that the quality policy is compatible with the strategic direction and context of the project.

In this document we have defined Policy Levers which stretch the main challenges, together with the corresponding key actions that should be taken regarding these challenges.

Main elements to consider regarding VR/ AR teaching and learning

Assistance for quality teaching and learning using VR and AR should take place at three inter-dependent levels:

At the institution-wide level

The universities in its strategy for innovativeness and quality in teaching/ learning should support the VR tech application in teaching and learning. Taking into consideration that today's students are digital natives, VR offers the possibility to better immerse students in their engagement in learning.

This at the same time would advance the VR/AR research in the institution and shrink the gap between the universities and businesses.

At program level

Comprising actions to measure and enhance the design, content, and delivery of the programs within a faculty or a school. VR teaching and learning has a great potential and high effectiveness levels by stimulating spatial memory and allowing users to master various skills in different fields. Each field of study has great opportunities in VR/AR and this should be incorporated in study program so that students are more prepared for the future job market.

At individual level

Including initiatives that help teachers achieve their mission, encouraging them to innovate and to support improvements to student learning and adopt a learner-oriented focus. One of the main advantages of using VR technology in teaching is that students can learn about the world outside of their classroom without leaving it. VR outspreads the range of education to anywhere teachers want to take their students. In this regard teachers should explore VR apps specific for their subject and integrate them into their curriculum.



Policy lever 1. Raising awareness about VR/AR in education

Challenge

The future of VR and AR use in education will be determined by better awareness around this technology, as well as improved experience for the user. There is a false impression that VR and AR only have applications for entertainment and video games, and that they cannot be used as a business tool. VR/AR technologies have excellent prospects in explaining complex concepts in fields such as medicine, healthcare, military, aviation, engineering, space etc., offering a unique advantage for virtual learning in higher education.

While there is a trend to include Virtual Technologies in academic culture of universities in developed countries, this is not the case with universities in developing WB countries. There is a need to introduce at Western Balkan universities the concept of virtual technologies as a tool for accelerating university modernization, while contributing on developing knowledge-driven society. This will increase the quality and level of efficiency in teaching and knowledge retention through virtual technologies, thus contributing on skills enhancement and further building of digital society at WB countries.

Key Policy Actions

- Foster the perception that virtual technologies can be used beyond games and entertainment
- Promote VR/AR as an instrument for improving education in learning multifaceted perceptions
- Establish Virtual Technology HUB that will serve as a HUB for other HEIs

Policy lever 2. Enhancing teaching methodologies

Challenge

HEIs have continuously been vanguard of novel technologies, pushing progress and establishing the afterward generation of scientists, businesspersons and engineers. Virtual and augmented reality technologies are at the border line of enlargement nowadays.



Improving and expanding the learning practice is at the core of what Virtual Reality can offer to learners and is one of the most effective ways that could transform the learning process.

There is need for academic staff to be equipped with the necessary comprehension, skills and approach to get habit of using Virtual Technologies for teaching. Once having their competencies for this purpose, they will be able to enhance teaching methodologies, which will increase student learning capability and enthusiasm.

Key Policy Actions

- Build capacities for academic staff to incorporate Virtual Technologies in teaching
- Develop teaching methodologies availing of technology and/or ICT tools
- Transform the role of the teacher to be more as a co-learner, coach and development collaborator
- Create learning environments so that they better respond to the challenges of new teaching methodologies using VR/AR

Policy lever 3. Engaging students

Challenge

The full expression of technologies potential is in line with Einstein' s quote "The only source of knowledge is experience". VR/AR technologies need to be directly practiced, because unlike a lot of other emerging technologies, virtual technologies are extremely visual. It's all about presenting that information in a valuable way that helps applications in different areas to accomplish their objectives. It operates alongside with the user.

A lot of learning areas depend on the students' imagination – students should imagine a place or the internal structure of a body or chemical element. Students' in-class engagement is an issue that requires continuous improvement, through permanent investigation of new techniques and approaches.

With virtual technologies students can visit places far away, all from the learning lab. They can explore the inside of a human organ, the structure of a molecule, the architecture of a computer or network, or practice flying a plane. With these technologies, students can experience and interact with beings and things, which they might never see their lives.



Key Policy Actions

- Increase engagement via interactivity
- Boost learning potential
- Personalized learning experiences
- Practical learning
- Equip students with competencies to use/access tools, software and platforms
- Increase interaction between teachers and students
- Increase the level of understanding and reduce the grasping time and the effort that students need to learn information by using 3D concepts instead of 2D ones
- Offer a better delivery of basic knowledge even for complex issues, higher learning efficiency and better learning experience by AR/VR techniques
- Transform the role of the student to be a junior collaborator with the teacher and be part of the learning process

Policy lever 4. Foster innovativeness in teaching and research

Challenge

Innovation is one of the main drivers of quality teaching improvement and research advance. Innovations in teaching and research can be advanced a lot by using virtual technologies, which will bring in narrowing the gap between the academy and industry.

There is a common agreement between students of studying really hard for an exam just the day before and forgot everything studied a week later. It is shown that interactive 3D solutions increase student's attention levels by 92% and increase test scores by 35%.

Mostly in Western Balkan countries teaching methodologies are still traditional so the introduction of AR/VR will be an innovation in their education systems. The need for modernization of study programs is becoming as important as the quality. The usage of a development/training hub is an essential component that allows students to get acquainted with the industrial equipment, which they will meet in the industry/business later.

While innovation is a progressive idea in itself, there is an issues of availability of high-end technology, that can disadvantage some students. The institutions should pay



cautious awareness to the evaluation of innovative practices and monitor the effect of innovation on teaching and learning outcomes, while ensuring they become common practice requires appropriate provisions and managerial capacities.

Key Policy Actions

- Experiment with innovative teaching methodologies like actions based learning, gamification, virtual reality and augmented reality
- Define a new classroom ecosystem transforming the teaching process from a Teacher based education to a Student centered education.
- Make learning more flexible and excited
- Train students for the future
- Encourage experimentation and innovation in teaching practices, while recognizing that experiments that fail are also important learning opportunities.
- Foster exploratory approaches and incremental changes, including pilot testing and careful evaluation of innovative teaching methods.
- Involve students in the design, implementation and evaluation of innovative teaching and learning experiments.
- Adjust teachers' performance evaluation to inspire and acknowledge innovation suitably

Policy lever 5. Internationalization and networking

Challenge

Beside innovative teaching methodologies that will increase learning capability and motivation, an important aspect is the international dimension, exchange of knowledge and interactive networking.

The EU partners will contribute with their expertise in the domain of user experience design and evaluations, considering VR content consumption specifics. Using their experience in this domain they will create the UX design guidelines and pass on the knowledge to partner countries' personnel during teacher training visits. Additionally, they will lead the evaluations of the developed solutions, helping to identify possible issues and find optimizations.

Partner Countries in the project are in Europe Pre-Accession Phase. They should learn to build capacities, standards and criteria used in Higher Education systems of EU countries.

National higher education policy development in Western Balkans is very much influenced by two major European initiatives in higher education – the Bologna Process and the developments around and following the EU’s Lisbon Strategy – both related to the project of establishing a “Europe of Knowledge”.

The Western Balkan countries are putting attention on the processes of taking European level processes into the national context, the process of Europeanization of systems of higher education (top-down perspective), therefore the cross-regional cooperation is very welcomed for targeted partner country institutions.

Key Policy Actions

- Foster cooperation between academy and industry by organizing open days, joint product developments, thesis supervision etc.

Develop capacities for future joint research and innovative ideas with the support of Virtual Technologies.