SWOT analysis considering

1. Strenghts,
2. Weakness,
3. Opportunities/Chances and
4. Threats/Risks

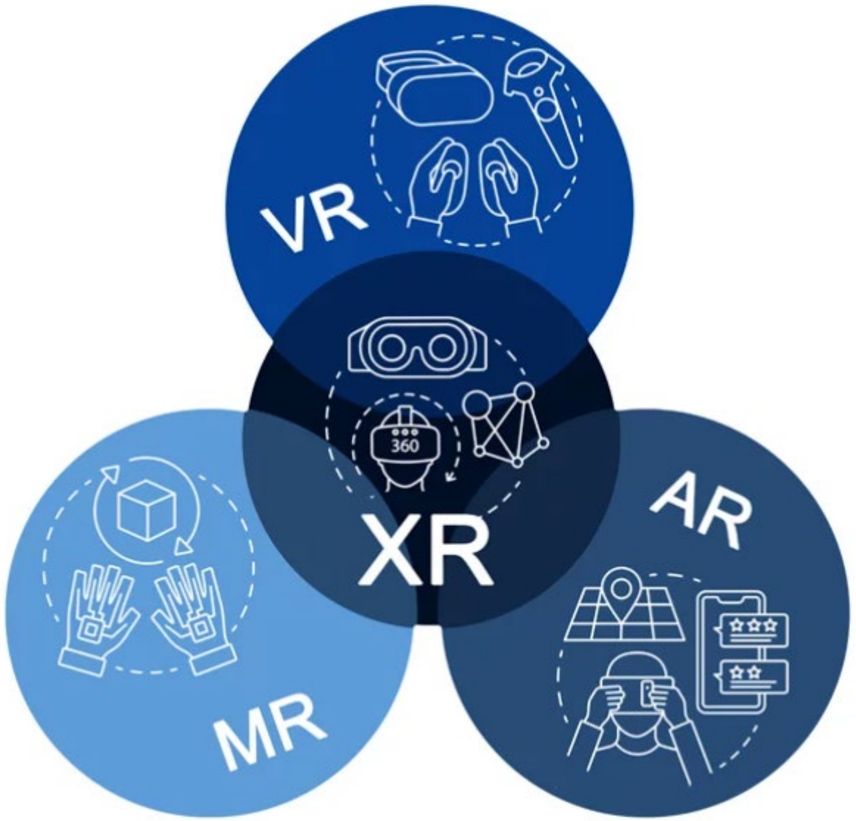
SLOVENIA

Gospodarska zbornica Slovenije

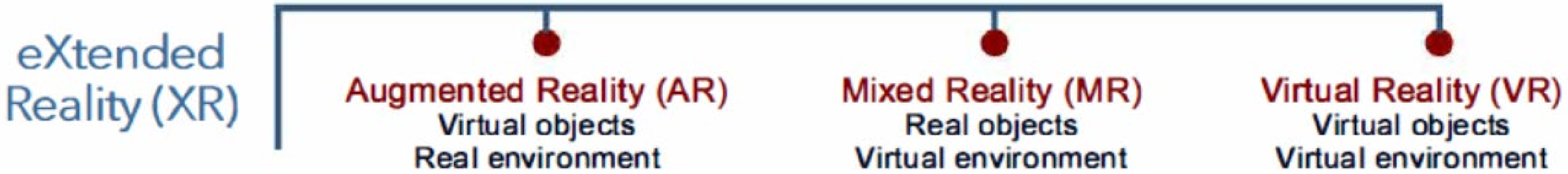
Zbornica gradbeništva in industrije gradbenega materiala

NOV. 2022 - ARTVET project, 2022-1-DE02-KA210-VET-000080803

Co-funded by the European Union



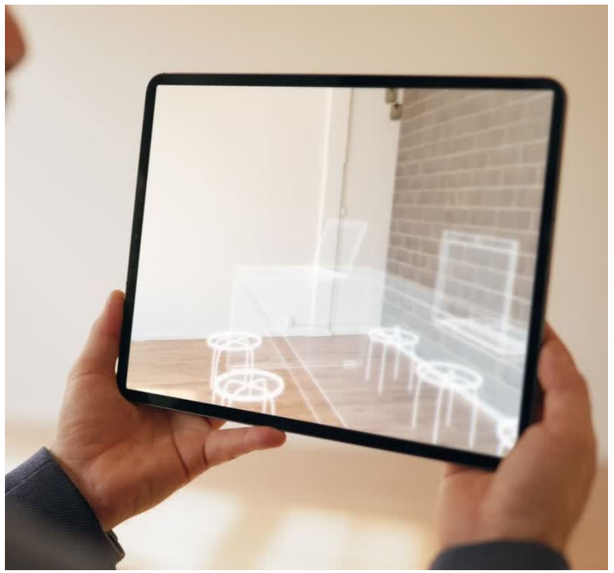
TERRAIN RESEARCH executed by company PROVITUALIA and CCIS CCBMIS: Nov 2022 Among 5 public VET schools and 1 large construction copmany.



1. Strenghts

- Attracting pupils and students and adult workers willing to prequalify to construction professions.
- Students can be informed/acquainted/enthusiastic about the introduction of modern technology in the construction industry.
- Strengthening students` digital mindset.
- Exploit new unique technology.
- Developing new free tailor-made applications that address common VET school teaching needs would enrich teachers and trainers' tools, and attract hi-tech enthusiasts to detect their career potential and develop students' talent.
- Technology will become integral BIM part and enable further exploitation of other advanced technologies fit for being used in the construction sector.
- A free new XR app that is accessible to everyone, both with phones as well as tablets would be an additional enrichment of teaching tools
- Combining practical and theoretical knowledge
- An excellent basis for working with other advanced technologies

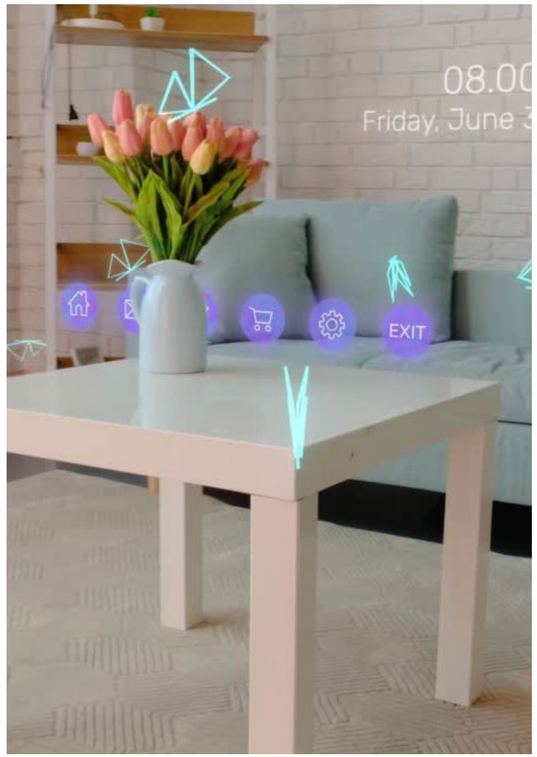
2. Weakness



- A lot of expensive software and tools to be purchased by the VET schools (expensive licenses and tools).
- Return period of such technology.
- Fast developing of the technology and selection of the right (fit for purpose) application software.
- Question of precision and quality of purchased apps/software.
- Weather changes/impact on software deliverables and outputs/results.
- Additional training needed for teachers and trainer in VET schools: train the trainer events, on annual basis.
- Internet availability on construction sites (tunnels ..).
- Some XR equipment is not complying with OSH standards for the construction site (can cause injuries and dizziness and vertigo as well as unpredictable scenario responses – in case of detection serious defect or improper built-in material for example – rapid heartbeat, cardiac arrest, etc.).
- Special facility needed for pretraining and testing such tools in the pedagogic process and before using those on the construction site (funds for such investment?).
- Careful due diligence needed when developing XR applications, and exposing them to end users, is definitely a necessity (and guidelines exist).
- Ability to access/use specific (external) databases.

3. Opportunities/Chances

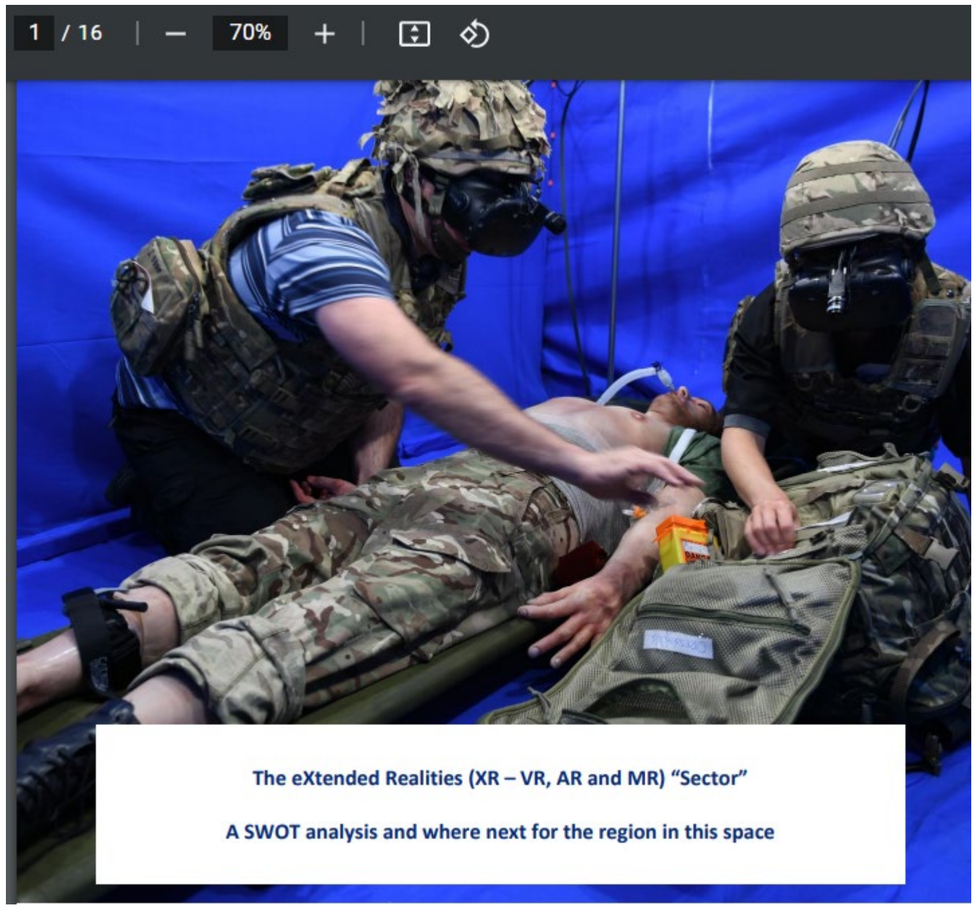
- Learning and teaching in VET schools reflect real work demands and tasks on the construction site and in the back office.
- Introducing new school knowledge through courses for workers to learn how to use the app (cVET).
- Exciting and close connection and cooperation with the business community and its needs.
- Outstanding regional sector/company/VET performance.
- Opportunity for professional development for teachers.
- The modular concept of app development offers the possibility of constant updates and adaptations.
- Abroad cooperation between the different stakeholders = exchange of ideas, inspiration, competition advantage, market positioning ...
- A step towards new legislation adoption.
- Enabled cross-curricular integration in the school learning process.
- Connecting different profiles and practices.



4. Threats/Risks

- The XR app / software could turn out to be too complex/ demanding and not easy to use, so the **finals users would not want to use it.**
- The XR app /software could not reach the desired quality and not meet the actual needs of the partners and fulfil their expectations.
- Problem launching the app (age of devices on of which we are installing the application).
- Operation of the XR application on different devices & Excessive application requirements regarding device configuration.
- The XR app /software could fail to address the actual needs of the teaching or construction process.
- The question about control over sensitive BIM data connected with XR app /software.
- Economic crisis or other big changes in the construction industry could stop the development or make the app useless.
- Disputes about free access of the code, IPR, and data used in a such tool/app/software.
- Cases of “Metaverse” hacking and cyber-attacks.
- Education (school and university) – resistance to adoption at teacher/school/college level. Training costs?
- Inadequate prior knowledge of teachers and lack of interest.
- Inappropriate and erroneous use of definitions and terminologies.
- The sensitivity of personal data (images, telephone data, ...) in connection with the XR application.

Other SWOT analysis on the topic being researched



Contents

https://www.thenewmidlands.org.uk/wp-content/uploads/2021/07/eXtended-Realities-SWOT-Prof-Bob-Stone-July-2021.pdf

January 2023: sectoral stakeholders meeting on the operational topics related with ARTEVT theme

Face to face meeting between VET schools, ITC developer, chamber, NAVET body, construction companies' representatives.

Defining actual common needs and how to exploit new AR, VR, MR, XR technology.

The plan of the CCIS CCMBIS:

Development of new project idea within Erasmus+, K2, COOPERATION PARTNERSHIP, call 2023!

3 PPs from Slovenia: developer, VET school/NAVET, chamber CCIC ?

Foreign partner: buildingsmart.org, craft chamber, NAVET

KEY RESULTS: FREE APP for correlation of BIM 3D models whereever on the terrain with XR dimenstion (geolocation)

THANK YOU

Co-funded by
the European Union

Gospodarska
zbornica
Slovenije

Zbornica gradbeništva in
industrije gradbenega materiala