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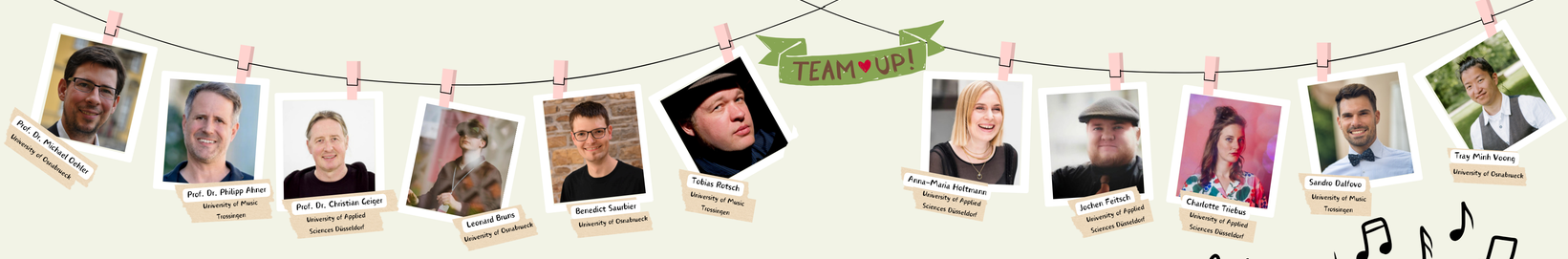
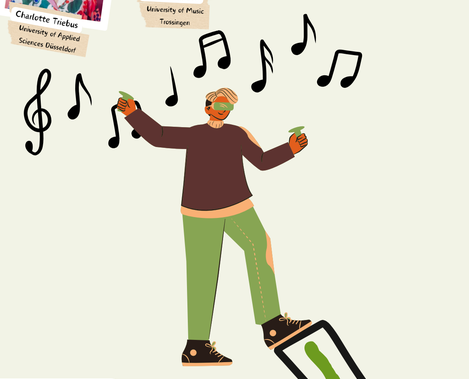


The project in a nutshell

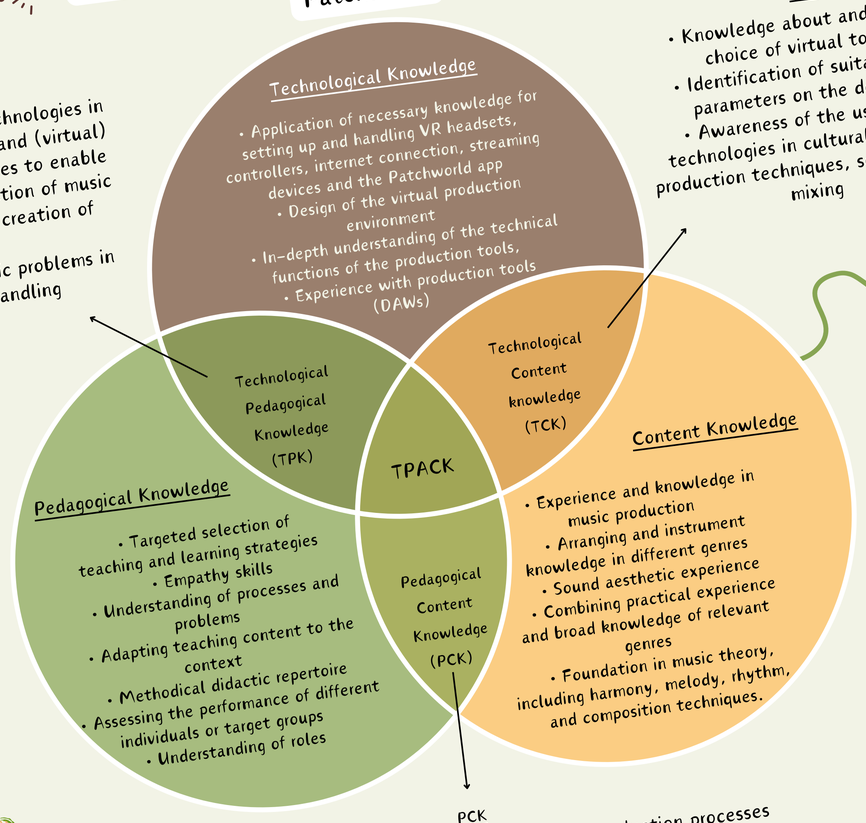
The joint project LEVIKO-XR focuses on the development of specific teaching and learning designs for music education based on already developed VR/AR tools for music-making, reception, music theory, history and in interdisciplinary contexts which will lead to a series of training measures with cooperation partners throughout Germany in 2025. The innovative potential of the project lies in the development of portable and mobile virtual and augmented reality training formats for music teachers, based on open standards.

TO DO LIST:

MUSIC LEARNING WITH XR



TPACK in LEVIKO-XR: Examples of teacher competencies for collaboratively producing music in PatchWorld



TPK
- Targeted integration of technologies in teaching and learning settings and (virtual) devices and creative possibilities to enable communication and co-production of music
- Conscious selection or creation of learning media
- Dealing with VR-specific problems in communication and handling

TCK
- Knowledge about and targeted choice of virtual tools
- Identification of suitable sound parameters on the devices
- Awareness of the use of these technologies in cultural practice: production techniques, sound design, mixing

PCK
- Experience and knowledge in guiding music production processes
- Creative learning and producing strategies suitable for learning
- Connection between practice and theory
- Knowledge about skill acquisition in cultural practice
- Assessment of the VR experience in relation to the topic in music education and projection of the experiences into other teaching-learning settings and music lesson sequences

Impressions of the Study

Prestudy on social presence

Leviko-XR conducted an empirical study, in which social presence, id est, a sense of physical presence with others in a virtual environment (Witmer & Singer, 1998), was investigated within a collaborative VR music application. This is particularly significant, as various studies show that increased social presence in VR environments not only affects immersion and engagement (Bell et al., 2023; Kerrebroeck et al., 2021) but also positively correlates with learning satisfaction and perceived learning effectiveness (Makransky & Lilleholt, 2018) as well as learning behavior (Miao & Ma, 2022).
By grading the perception level of the test persons of each other in real space through different methods (i.d. by using headphones or placing persons in different rooms in real space), we measured the degree of social presence perceived by the participants. Preliminary results from this study indicate that for the 27 participants communication and working on music producing tasks in VR multi-user scenarios (with 3 simultaneous users) is generally possible and the degree of social presence is rather high. Furthermore, the music teachers among the participants gave qualitative feedback that the practical use in music classes is conceivable. In addition to music producing, this also applies to other application scenarios such as interactive (remote) collaboration in the field of historical music-related aspects or other creative tasks.

Insights into it?

WHAT'S NEXT?

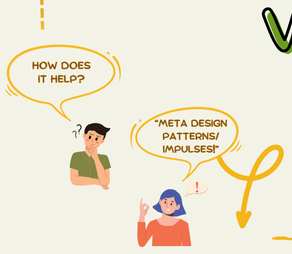
The follow-up study focuses on (social) presence in music-related applications, not only in VR but also in comparison to AR (Augmented Reality) and MR (Mixed Reality), as it is intended to include those technologies in the prototypes. Various practical scenarios of the preliminary study are providing a basis to streamline and select the experimental conditions for the follow-up study accordingly.

Video

SCAN ME
or use this link: https://linktr.ee/levikoxr

VIRTUAL AND AUGMENTED REALITY IN THE CLASSROOM:

LEVIKO XR



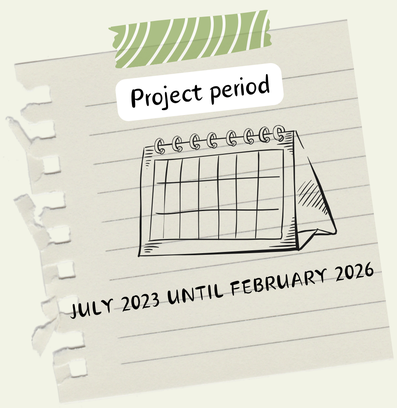
Due to the identified music production skills, there is a broadening of content in the creation of teaching and learning designs, for example through the integration of non-VR production settings (such as drum design, sampling, arranging tools and knowledge, music apps). Accordingly, videos from producers will be incorporated.

Photos

OBJECTIVES

Development of teaching and learning designs

The didactic conception and reflexion is based on didactic models that focus on technological and musical aspects, for example the TPACK model (Mishra & Koehler, 2006) or process-product didactics/Mev (Wallbaum 2000, 2018). These designs aim to demonstrate both the fundamental technical and didactic possibilities and the limitations of using virtual and augmented reality in music education, as well as to train their application. By the end of the project, the teaching-learning designs should be easily and intuitively usable and further developable by actors in teacher education in various scenarios.



COMBINING FUN AND LEARNING: A CHILD PLAYING THE DRUMS IN A VIRTUAL ENVIRONMENT!

Analysis and identification of possible applications

For the identification of suitable music applications we focused on interactive software. Further critera are multi-user-interaction or immersive music creation.

Based on CAMIL (Makransky et al., 2021) and the overview model Dimensions of experience in (non-)media-induced environments (Kerres et al, 2022) we focus specifically on the dimensions of presence (the feeling of being immersed in the virtual environment) and agency (the user's ability to control their actions and make meaningful changes).

#MusicmeetsXR

PLAYING DRUMS IN A VIRTUAL ENVIRONMENT

CONDUCTING AN ENTIRE ORCHESTRA IN VR!

SCAN ME for References, Website and more!
or use this link: https://linktr.ee/levikoxr

Funded by the European Union

Funded by the European Union – NextGenerationEU and supported by the Federal Ministry of Education and Research. The expressed views and opinions are solely those of the author and do not necessarily reflect the views of the European Union, European Commission, or the Federal Ministry of Education and Research. Neither the European Union, European Commission, nor the Federal Ministry of Education and Research can be held responsible for them.