

# **Workshop Proposal for Networked Learning Conference 2022**

*Convenor and/or Presenter*

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## **Designing for Networked Learning in 360VR - A scenographic turn in online learning environments?**

### **Workshop Description**

Despite the growing popularity of Virtual Reality (VR) in Higher Education (HE), there is a lack of studies dealing with networked and collaborative activities in VR (Radianti et al., 2020). Historically, VR has been promoted as an educational technology that can give access to exotic places or dangerous situations through computer-generated virtual worlds. Another area of application of VR has been therapeutical sessions exposing individuals to unknown situations. Concepts like interactivity, immersion and presence has been shaping the discourse of educational VR (Markowitz & Bailenson, 2019), but that is not necessarily supporting a networked or collaborative learning approach. Recently, 360-degree video cameras has made it possible to record situated practices, which can then be used as the canvas in the virtual world (McIlvenny & Davidsen, 2017). Pirker et al. (2021) argued that 360VR could potentially be a game-changer for distant education, but it is also clear that 360VR pose a new medium for supporting Networked Learning. Basically, 360VR presents a transition from logocentric platforms (e.g. Moodle) emphasising the exchange of text between peers towards platforms that build upon ideas of immersion, inhabitation and multimodality. The aim of the workshop is to discuss how principles of Networked Learning can inform the design of 360VR activities in HE.

CAVA360VR is a prototype Unity-based Windows application supporting 20 simultaneous participants to collaboratively analyse, visualise and annotate 360° video in VR. CAVA360VR is developed by the BigSoftVideo team ([www.bigvideo.aau.dk](http://www.bigvideo.aau.dk)) in Aalborg University (McIlvenny, 2020). In CAVA360VR, remote participants can share, view and interact with a 360° video together, draw on the 360° video, use a 'mirror-cam' to see what is behind you, use a laser pointer to guide others' attention, import a 2D image, view a transcript, and view a synced 2D video with the 360° video. Further, participants can talk to each other, and the audio is spatialized in the VR environment. In CAVA360VR, each participant is represented with an avatar that follows the orientation of the Head Mounted Display (HMD) of the individual participant and the controllers are showed as pair of avatar hands. The potential of CAVA360VR is also particularly interesting in the context of Networked Learning as it offers a new platform for designing for learning. CAVA360VR is not only available in VR, but can also run as a standard desktop application, which allows a larger, mixed group to participate in the analysis of the recorded data. Not all of the features available in VR are available in non-VR mode. For two years, CAVA360VR has been used in many video data sessions (Jordan & Henderson, 1995; McIlvenny, 2020) with participants – for example, from Ghana, Finland and Denmark – analysing 360° video data together. The potential of CAVA360VR is also particularly interesting in the context of Networked Learning as it offers a new platform for designing for learning. This includes addressing how to collect 360 video data, how to pedagogically design activities, and how to support students negotiating of meaning in 360VR, etc.

In the workshop we will share examples from a series of recent pilot experiments where medical students collaborate in 360VR. In these experiments students from the 5th semester medical programme in Aalborg University were collaboratively working with a 17-minute-long non-scripted 360° video showing a professor and two students examining the collateral ligaments of a knee. The 17 minutes is from a longer session lasting almost 100 minutes, but we decided to focus on this part to limit the time in 360°VR. In the video, one of the students is performing a physical examination of the knee collateral ligaments of the other student's knee and the professor is providing feedback and stimulating questions during their examination. In the original video it is clear that the students are making some errors as this is their first time examining the knee collateral ligaments, providing the basis for a type of failure-based learning activity (Kapur, 2015).



In image above, you see five students participating in one of the experiments. For each of the 3 experiments, the students were given a headset and a pair of controllers. Each of them was in separate rooms in the university building but could have participated from their home or a completely different place. The basic question we want to address with the participants in the workshop is how can principles of networked learning inform the design of 360VR applications and activities?

### **Intended Audience**

The workshop is relevant for all researchers and practitioners interested in discussing how principles of Networked Learning can inform the design and evaluation of collaborative activities in 360VR. No prior experience with VR-based activities is needed for participating in this workshop.

### **Participant Engagement**

Participants are invited to discuss how principles of Networked Learning can be used to design 360VR learning activities. During the workshop we will do a live demonstration of software designed to support up to 20 simultaneous users in Immersive Virtual Reality called CAVA360VR. We will bring a Virtual Reality Headset to the workshop to allow the participants to try networked 360VR.

### **Participant Outcomes**

Participants will get a first hand experience using a software prototype called CAVA360VR (McIlvenny, 2020) developed by the BigSoftVideo group in Aalborg University, Denmark. In addition, we will share data (for the participants to analyse) from a collaborative 360VR activity in medicine education.

### **Workshop Alignment with Conference Themes**

The workshop is first of all presenting a new type of learning environment in the context of Networked Learning. In addition, we invite the Networked Learning community to act as co-designers of 360VR activities.

### **Workshop Process/Activities.**

1. A brief introduction to 360VR research - what themes are currently emerging in the area of networked and distant learning using 360VR - 10 minutes
2. An introduction to and demonstration of CAVA360VR - this part will feature a live activity with networked participants. - 10 minutes
3. Participant will analyse video from our pilot experiment in a rapid data session (30 minutes)
4. A brainstorming session on how principles of Networked Learning can inform the design 360VR Learning Designs (This discussion will be captured and achieved using post-it notes/poster) - 30 minutes
5. Wrap up in plenum (10 minutes)

## References

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