
SocialVR in art education – from immersive excursions to collaborative creativity



Figure Nr. 1 SocialVR Platform *Sansar* is offering art educational guided tours. Dr. Philippe Martinez with a group of avatars in a reconstruction of *Gebel el-Silsila* [14] Picture: Irana Pey



Figure Nr. 2 Collaborative VR painting in MasterpieceVR
Picture: MasterpieceVR.com

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Abstract

SocialVR offers new ways of reception and creation of art with platforms for joint exploration, cooperation and presentation. Creation and perception of art now is intertwined with the impression of virtual embodiment in shared environments. In this workshop we present a classification of Social VR for art educational concepts integrating practice-oriented considerations, from art educational tasks to mobbing prevention. We discuss ways how Social VR specifically contributes to art educational concepts. Where is the potential and challenges looking at both receptive and productive applications? This workshop builds upon our previous study, XR-based art educational formats in historical spaces [1].

CSS Concepts

• **Applied Computing->Education; Arts and Humanities; Human-centered computing; Collaborative and social computing**

KEYWORDS

SocialVR; art education; immersive designing; idactic framework; Ethical Challenges



Figure Nr. 3 VR- Designing as platform for Virtual emorials. Suchacek/Traub



Figure Nr. 4 *Flock* (2017) Participatory VR Art, David Lobser. Picture: davidlobser.com

SocialVR and mobbing

When pupils are visiting SocialVR worlds, mobbing incidents may occur. Adult VR users experienced SocialVR-based scenarios as more intense than those in desktopbased Virtual Worlds. [6]. Some SocialVR platforms use several techniques e.g. a social bubble to restrict approaching one's avatar or muting and blocking along with AI-based detection of verbal harassment [7].

Introduction

SocialVR in art education enables exploring and designing within VR-space. Opportunities lie in heightened accessibility to cultural heritage as well as new forms of guidance within virtual worlds. Visiting digital twins of cultural heritage or art exhibitions now becomes a new experience embodied via VR and interconnected with a growing SocialVR-network.

The avatar is a vital core element of SocialVR, from designing digital identities to sensomotoral feelings along with the avatar's explorations. Teachers need to be aware of physio-psychological effects of VR, e.g. when the sublime impression of teleporting through architecture shifts to cybersickness. As compared to single VR experiences, what is unique is the strong experience of social presence with potential for cooperation, from joint drawing or designing environments. There is a growing choice in SocialVR platforms apt for art educational purposes with highly intuitive avatar-design options or guided tours. Joint creation is enabled in *MasterpieceVR* or *Unbound Alpha*. Yet, art educators need to carefully select their ideal SocialVR platform for educational purposes. Selection criteria may be mobbing prevention or scalability addressing heterogeneity in terms of media competence.

Definitions

Virtual Worlds can be defined as "A synchronous, persistent network of people, represented as avatars, facilitated by networked computers" [2]. Virtual Reality (VR) is now merged with this concept. VR was already envisioned in the early 1960s when Sutherland described it as an effort to "make that (virtual) world in the window

look real, sound real, feel real, and respond realistically to the viewer's actions" [3]. This early vision of immersion and interactivity is now getting closer to realisation. VR is continuously evolving as technology, with high-quality head-mounted displays with stereometric audio-vision and new dimensions of body tracking [4]. This leads to an increasing impression of presence, understood as the psychological state subdivided in personal (identifying within space) as well as social (social perception of space) and environmental presence (sensing virtual scenes) [5].

Related Work. Research on Virtual Worlds and Social/VR in art education

Research in SocialVR with relation to art education is scarce, but promising. Regarding architecture training, both the collective mode as well as VR modality contribute to problem solving and spatial cognition [13]. Developing a framework for collaboration in VR [14] was a vital step towards current SocialVR platforms. Looking at studies on SocialVR's predecessors, there are research projects in desktopbased virtual worlds as well as VR-based projects. Regarding desktopbased Virtual Worlds in art education such as *Second Life*, art students expressed less inhibition in presenting or commenting on each others artwork (c.f. research by Lu) [8]. Virtual Worlds may be regarded as platforms for avatar-based identity exploration c.f. didactical framework by Yoon [9]. There is an increasing number of VR-based high-quality projects which would provide opportunities for educational research, e.g. KLIMT MAGIC GARDEN, a VR project on Gustav Klimt's *Beethoven Frieze* [10] or

Variations SocialVR in Art education	Examples for Art educational concepts/ tasks
1.Autonomous Visitor in Virtual Worlds, self directed joint explorations	Task-based exploration when visiting exhibitions or cultural heritage reconstructions
2.Guided Visitor, Virtual World, tours in VR-cultural heritage or art exhibition	Guided tours with information on the spot, providing support in Navigation/Designing tools
3.Virtual remote visit, Virtual Visitors in actual Spaces	Task-based exploration,Potential for cultural heritage preservation
4.Art-Interactor as collective, Visitors engaging in joint VR concepts as part of the artistic concept	Interactors within the VR-artpiece. VR art analysis, e.g. comparison with other digital artwork
5.Individual Designer/Virtual World, individual project for joint Virtual Worlds	Avatar-design / dress design / Environment design for joint exploration
6.Codesigner in connected Interface ,joint designing in VR	Tutor vs codesigner-role, Painterly Codeign vs Modular designing

Figure Nr.5 Classification of SocialVR in art education, Overview by authors

SteamVR Museum of Fine Art [11]. Now, Peez/Meik are pioneering in art educational research of VR-painting, exploring the specifics of the medium in a qualitative case study with the VR-painting software *Google Tiltbrush* [12]. Peez et al see a potential of designing within endless spheres with options for multiperspectivity but also challenges when it comes to precision or navigation. In our previous study on XR in art education, students created emorials in VR drawings on Bavarian Revolution (1918/1919) c.f. Figure Nr. 3. Red clouds represent ambivalence of violence and communism in the revolutionary [1]. As compared to such single VR drawing concepts, SocialVR now may provide empodied exploration, but also joint design of future actual memorials as participatory platforms of commemoration culture.

Classification: SocialVR in art education

The following classification is suggested as framework for further art educational research and implementation (Figure Nr. 5). Nr. 1-4 address varations of VR-based receptive/interactive forms of art education, Nr 5-6 refer to variations of designing for or within joint VR-spaces. SocialVR as individual exploration of art exhibitions (Nr. 1) refers to autonomous art educational explorations as offered in SocialVR. Differences are higher flexibility (time/space) and intimacy as compared to actual visits c.f. The VR Museum of Fine Art (SteamVR) e.g. *Terracotta Army* [11]. SocialVR as guided art educational concept (Nr.2) resembles museal guides, yet now guidance is offered by an avatar in SocialVR. Examples are *Media Art Exhibition* by *Lab Gree* 2018 (*VRchat*) [15] or *Sansar`* s guided tours, e.g. the Egyptologist Dr Martinez as avatar guide in high quality scanned environments (Figure Nr 1) [16]. *SocialVR* offers new options in terms of deictic

information (situated referencing) and swift teleporting in multiperspectivity e.g. for stylistic comparison.

Virtual Visitors in actual spaces (Nr.3) refers to forms of exploring spaces which are still existing, yet which are hardly accessible and now offered as remote visit (e.g. via drones or robots). Such remote exploring may increase experiences of exploring authentic spaces of cultural heritage as compared to fully computer-generated virtualisations. Examples are still preliminary strong in academia (e.g. the Project ROVINA) [17].

Now, art-interactors in SocialVR concepts (Nr. 4) refers to users engaging in art work as integral component. For example, the participatory VR artwork *Flock* (*David Lobser, 2017*) is reflecting on VR and social alienation with VR-users meeting as virtual birds (Figure Nr.5). Such art concepts may fuel inspiration for pupils` own SocialVR-art projects.The concept individual designers (Nr.5) refers to individual creations for VR-environments. Designing unique avatars or creating environments on SocialVR platforms or participating in exhibition competitions may be interesting.Now, codesigning within SocialVR refers to a collaborative interface for joint designing (Nr.6). This fusion may trigger “a unique feeling of symbiosis and potential for constant mutual inspiration” [18]. VR drawing platforms offer a variety of ready-made modules or algorithmic functions as well as variety of tools, from painterly to sculpting mode for quick visual effects c.f. Figures 6/7.

Conclusion

As platforms for immersive joint exploration, SocialVR transforms ways or reception and creation of art.



Figure Nr. 6 MasterpieceVR - From modularised avatar design to embodied action. Screenshot: MasterpieceVR.com

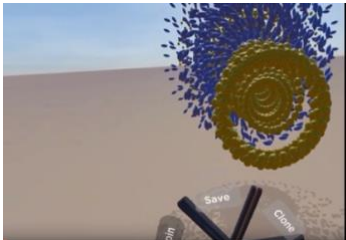


Figure Nr. 7 Algorithmic painting in collaboration (*Unbound alpha*)

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SocialVR intertwines social and spacial presence, providing high potential for embodied experiences. Hybrid creativity, mutual learning or site-specific learning are possible in new ways of embodiment. Ad-hoc-voyages to cultural heritage or actual feelings of the sublime within SocialVR. Immersive social platforms are matching pupils` (social) media culture with autonomy and connectedness, the avatar as alter ego for identity exploration. Yet, looking at mobbing or sensorial stimulation, further research is vital to provide save and substantial concepts of art education in SocialVR.

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