

Bodystorming in SocialVR to Support Collaborative Embodied Ideation

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The COVID-19 pandemic has forced the world to explore the possibilities of online media as a method of social interaction, for both work and leisure activities. Almost overnight we have transferred business meetings, academic lectures, medical consultations, conferences, book clubs, bingo games and family gatherings online, primarily through the medium of real-time video. While most of these online activities have their drawbacks relative to face-to-face (often exacerbated by the rapid, imperfect implementation), there is a growing consensus that certain activities are particularly difficult to do via video, or they lose a lot of their essential features. One example is collaborative creative work, including brainstorming, collaborative ideation or co-design. 2D design can be mediated reasonably well by a screen, though a lot of the social cues of collaborative design are lost, however, other domains, such as 3D design lose much more. Perhaps the most challenging creative process to take online are those involving movement such as choreography or movement interaction design. Contemporary interaction design approaches increasingly include full body movement[4] or gestural interaction[3]. The design process for these movement interaction techniques is increasingly done through movement itself using approaches such as Embodied Sketching[7] or Soma-design[5, 9]. Video communication loses the sense of moving together that is vital to these approaches. This raises the question: can virtual reality provide a suitable alternative to video for collaborative movement based creative work?

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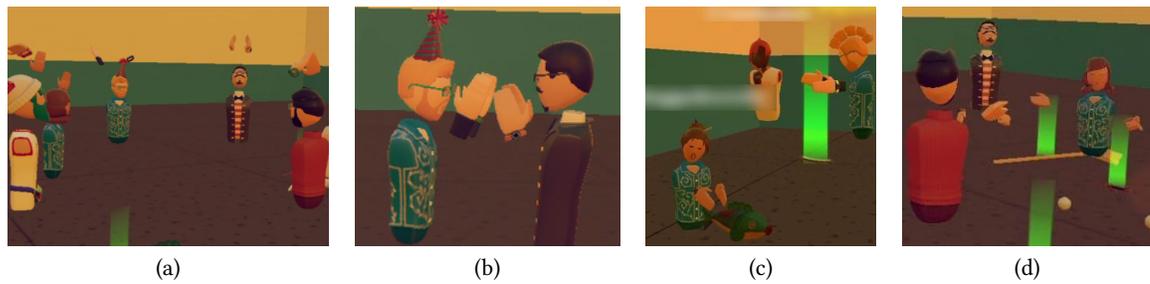


Fig. 1. Various activities observed during bodystorming in VR. (a) Body sensitizing activity, in synchrony; (b) embodied demonstration and participants copying each others' movements; (c) using elements from the space among several people (common spatial awareness); (d) gaze and pointing used to facilitate turn-taking

Over the last 9 months we have explored this possibility, taking a movement based ideation workshop[8] modelled on the Form Follows Sound process[2] online both using video (zoom) and a virtual reality environment (RecRoom <https://rec.net>). The aim of the workshop was to design movement based interaction techniques for virtual reality experiences. As such movement was central to the design process, but the capacity for movements was limited to those that could be recognised with commodity VR hardware, meaning that little was lost by performing these movements in a VR platform.

The sessions began with a body sensitization activity, in which all participants performed movement exercises inspired by dance (Figure 1, a). This was done together in a synchronised way. This moved into collaborative movement ideation or “bodystorming”[10]. Participants demonstrated and explained potential movements to members of their group, who would then collaborate to develop the movement into an interaction design for a VR game or experience. Sessions were recording using the video recording features of each platform and analysed following an interaction analysis[6] and a visual form of inductive thematic analysis[1].

A number of behaviours were observed in VR that were absent or less frequent in video based sessions. These include participants demonstrating movements in an embodied way during conversation, and other members of the group copying the movements to better understand it (Figure 1, b). Participants also used props available in the environment to demonstrate movements, for example, one participant used a fish to demonstrate an action of petting a dog (Figure 1, c). Participants also demonstrated more standard social cues, such as the use of gaze and pointing to facilitate turn taking (Figure 1, d). This last shows the strength of the shared space that Social VR users inhabit, as compared to video communication in which each participant is in their own spaces and gestures such as gaze and pointing lack a shared referent that they need to be mutually understandable. Overall, the VR sessions exhibited more playful behaviour, more laughter suggesting a more creative environment.

These initial results (which will be published in full on completion of the analysis) suggest that Social VR has the potential for supporting collaborative creative work in a way that realtime video cannot, due to features such as a shared space, supported social cues and a shared “physical” environment including props.

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