

A STUDY OF A VIRTUAL 3D CONTEXT IN A VIDEO COLLABORATIVE VIRTUAL ENVIRONMENT IN CELEBRITY QUOTES, DREAM HOUSE, AND DESERT SURVIVAL GAME

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ABSTRACT

Over the most recent couple of years, thoughts from the Collaborative Virtual Environment (CVE) have been utilized in an assortment of gadgets. The motivation behind the investigation is to examine the result of 3 layered (3D) virtual climate and increased reality applications, which length from armed force fighting recreations to different regular citizen modern employments. The main role of the tests shrouded in this proposal was to check whether individuals who teamed up in video CVEs felt and acted more like they were up close and personal than individuals who worked together utilizing customary video conferencing strategies.

Keywords: Video, Virtual, Conference, Communication, Environment.

1. INTRODUCTION

The objective of continuous telecom media is to diminish the distance between geologically scattered gatherings and give the possibility that individuals are cooperating when they aren't. Present day video conferencing innovation can make this deception, and video interceded correspondence (VMC) is generally promoted as the following best thing to eye-to-eye correspondence. At the point when one considers the advantage of having the option to see the other individual's facial feelings during video talks, which is absurd with conventional calls, this idea doesn't appear to be that outlandish. In any event, when contrasted with up close and personal correspondence, VMC seems disconnected, difficult, unnatural, and remote. A defect with wide video cooperation that prompts this discernment is the deficiency of the 3D setting among people and their common work area managed by eye-to-eye exertion. Therefore, it's hard for members to distinguish what others are seeing, what they're doing, or even who they're addressing through the video. The majority of which could cause them problems on the off chance that they don't organize their collaboration endeavors.

The newest VMC interfaces, called "video Collaborative Virtual Environments" (video CVEs), try to ease these worries by again providing a virtual 3D environment where people from far away can feel like they are in the same place and can meet each other and the earth. Working examples of video CVEs have shown that they are useful, but research into how video CVEs can be

used to help people work together remotely is still in its early stages, and the human factors aren't well understood.

2. VIRTUAL ENVIRONMENTS FOR COLLABORATION

CVEs (Collaborative Virtual Environments) are PC empowered, appropriated virtual places or locales where individuals can connect and get together with one another, with specialists, and with virtual things. The authentic wealth of CVEs differs significantly from 3D augmented simulation to 2D and text-based settings. Modern and military staff preparing, cooperative style just as designing, and multiplayer games have been the central applications to date.

The CVEs designing expects to change web networks into 3D traversable and populated spaces that consider agreeable work and relational play; in any case, the utilization of CVEs brings about a medicalization of the work, and that implies we move from an authentic up close and personal situation to one in which we utilize a virtual world orchestrated by PC projects to meet up. Unfortunately, this better approach for carrying on with work normally debases among proprietors some data that is basic to the cooperative interaction, like the accompanying.

- i. The partner's behavior.
- ii. The partner's motivations.
- iii. The other person's point of view.

A CVE's style is currently considered to be an authentic test. The issues are various, and they are plainly mechanical, mental, and social in nature.

3. GAME OF SURVIVAL IN THE DESERT

The main goal of the Desert Survival Game experiment, which we'll look at in this section, was to see if a few very emotional rating scales could be used to compare both traditional video conferencing and video CVEs, so that we could figure out which one gave clients a more in-person-like experience.

Experiment design

The review was considered and completed in cooperation between the creator and individuals from the Multi Media Systems Research Laboratory (MSRL)

Participants

The test had 42 members (36 guys and 6 females). Every one of the three individuals from a group took part in three preliminaries throughout fourteen meetings, for an aggregate of 126 preliminaries. The members' ages went from nineteen to 63 and half years (middle age 33 years). Aside from the way that the preliminary's objective was to analyze video conferencing arrangements, they had no earlier information on the examination.

Data analysis

Social presence is an important part of the quality of a medium. The semantic differential scales were used to figure out what the average attributes were, and they were also used to fix common social presence mistakes. $F(2, 52) = 81.9$, $p = 0.001$ showed that the medium seemed to have a very important effect. Also, post-hoc pairwise analyses showed that FtF's social presence ($M = 6$, $SD = 0.75$) was rated much higher than vCVE's ($M = 4.5$, $SD = 1.1$, $p = 0.001$) and sVC's ($M = 3.9$, $SD = 1.0$, $p = 0.001$) Also, vCVE was rated as having a better social presence overall than sVC ($p = 0.023$).

4. DREAM HOUSE

The goal of the trial Dream House, which is shown in this section, was to see if this result could be repeated in a study with the same kind of connection points but a different kind of cooperative work.

Because of the first finding, the important theory that needed to be tested was much clearer: work in video CVEs feels a lot more like working face-to-face because the social presence of the technology is decided to be higher than that of a standard video conferencing connection point.

Designing an experiment

Once more the essayist and individuals from the Multi Media Systems Research Laboratory teamed up on this investigation (MSRL). The objectives and results that were important to our examination are introduced in the accompanying areas. The examination utilized a two-condition inside subjects plan. Members worked in gatherings of three on a particular action, with one individual filling in as an experimenter and the other as an arbitrator.

Participants

Thirty-six volunteers (20 males and 10 females) were gathered for that experiment. Each person took part in two trials during each of the 18 sessions, for a total of 72 trials. Participants' ages ranged from seventeen to fifty (median age: twenty-six), and they were only aware of the experiment's comparison of video conferencing technology; they were not aware of the experiment's analysis emphasis.

Results

A total of 35 data sets from eighteen sessions were analysed. One participant was recruited twice due to a misunderstanding among the experimenters. As a result, the participant's other data set was eliminated and isn't included in the analysis.

Social Presence Differences

It looked like the main result was a big deal. Participants gave condition vCVE ($M = 5.4$, $SE = 0.17$) a much higher score for social presence than condition sVC ($M = 4.6$, $F(1, 34) = 17$, $SE = 0.21$), $p = 0.001$.

5. CELEBRITY QUOTES

The impact of the amount of video CVE passed on the client experience just as cooperative conduct was the target of this examination. The degree to which a correspondence medium's connection point is really developed to intellectually ship members from their genuine actual world to a remote interceded setting decides the medium's transportation property. Thus, the level of transmission of a correspondence medium is inseparably connected to the vibe of being there in a far-off room.

Inclination, mindfulness, copresence, social presence, and substantial presence were completely estimated in the test. It additionally incorporated various inquiries assessing the gadget's convenience, which were educated by the ease of

use gives that showed up in the Dogs and Owners analyze.

Experiment task

For that analysis, a cooperative pair matching undertaking was planned. In every one of the four

adjusts, each group was given ten photos of notable individuals just as ten huge statements. Each round, the group's objective was to find however many right big-name statement matches as could be expected under the circumstances.

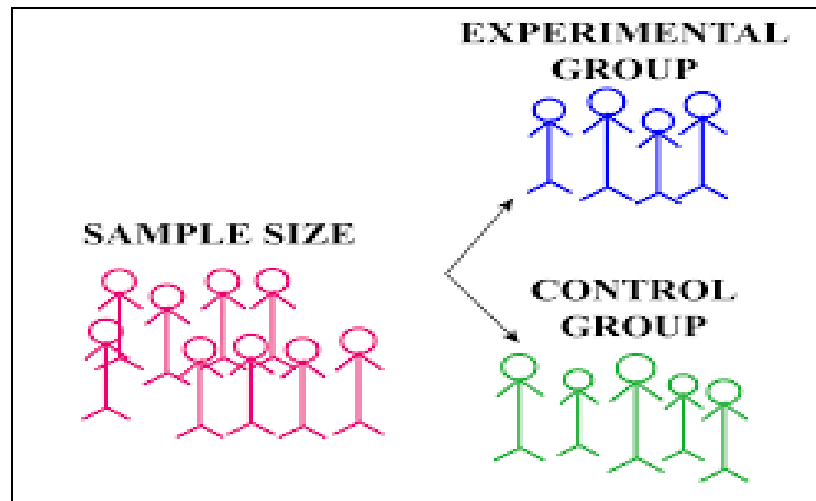


Figure: 1 A set of quotes and photographs to use as an example. To locate matching pairs, participants have to work together

6. DATA ANALYSIS

Social presence

$F(3, 48) = 43, p < 0.001$ was found to be a big, important result. Being there in a friendly way Compared to sVC ($M=4.4, SE=0.19$), vCVE work area ($M=4.3, SE=0.17$), and vCVE im ($M=4.4, SE=0.15$), there was a huge primary effect ($F(3, 48) = 43, p < 0.001$).

Even so, pairwise comparisons showed that none of the situations were very different. There is also a large correlation between gender and distance from the middle ($F(3,48)=5.7, p=0.002$), which shows that female members' social presence decreased as their distance from the middle grew, while male members' social presence grew.

Having an actual presence

There was a huge distinction between the two vCVE interfaces, $p=0.003, F(1,34)=10$, with the more vivid vCVE quality giving a bigger feeling of actual presence. There's additionally a critical cooperation Medium Gender, $p=0.039, F(1,34)=4.6$, in light of which male members had a higher augmentation of actual presence of the more vivid vCVE quality.

7. COMPARISONS BETWEEN ALL 3 EXPERIMENTS

The figured covers for those scale blends are recorded in the table beneath each trial. Corresponding scales with covers more prominent than 0.85 may have determined however have similar fundamental outcomes. Proportions of social presence, mindfulness, co-presence, and authenticity have a ton of cross-over, which proposes that they all clarify related parts of the impression of being together in interceded association. The straightforwardness and disarray of utilization strategies, then again, have less similitudes with the social and mindfulness scales, inferring that they ascertain a different aspect.

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Table 1: Discriminant Validity

Experiment	Scales	Overlap
Desert Survival Game	Social Presence – Realism	1.15
Dreamhouse	Social Presence – Physical Presence	1.38
Celebrity Quotes	Social Presence – Awareness	1.24
	Social Presence – Ease of Use	0.83
	Social Presence – Physical Presence	0.54
	Social Presence – Preference	0.82
	Awareness – Ease of Use	1.12
	Awareness – Physical Presence	0.06
	Awareness – Preference	0.81
	Ease of Use – Physical Presence	0.14
	Ease of Use – Preference	0.60
	Physical Presence – Preference	0.13

8. CONCLUSION

Using the method of cross-media studies, the type of participation offered by video CVEs was looked at from afar rather than up close. This was done by comparing different parts of the clients' understanding and cooperative behaviour across a number of issues, such as video CVEs, normal videoconferencing situations, and unmediated eye to eye pattern controls. The discoveries had the option to show the impediments and advantages of video CVEs when contrasted with standard video conferencing connection points, just as expected difficulties and holes when contrasted with eye-to-eye circumstances.

The client experience was influenced by social presence, true presence, mindfulness, convenience, and delight. To evaluate and consider cooperative behaviour, correspondence designs, semantic attributes, and view coordination mechanisms were used.

In four controlled client studies, unbiased and emotional strategies were used to look at two important screen properties of video CVEs: spatiality, or how well they help people understand basic real-world spatial properties, and transportation, or how well they move people's qualities to a distant, made-up space.

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