(RESEARCH ARTICLE)

The synergy of cognitive, emotional and privacy in multi-user virtual and argumentative reality

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Abstract

Virtual and argumentative reality has captured pertinent attention in recent years especially in the field of science and technology where it has proven significance in simulation and optimisation of complex problems especially in the immersive modes and structured argumentation. Most scholars have done countless efforts in exploring and addressing the one-sided dimensional sphere of this technology, a good example is in the gaming industry in that regard leaves unaddressed room for the deeper understanding of this technological reality in a multi-user dimensional space. This script aims to put to light the synergy of the cognitive, emotional and privacy in multi-user platform of virtual and argumentative reality.

Keywords: Virtual Reality; Augmentative Reality; Cognitive; Multi-User

1. Introduction

This powerful technology involves the interface user interactions, perception of reality through simulations on the virtual space, smart head-mounted display, jacket and gloves are the parameters that enhance the spatial interactions in diverse manners [8][15]. In simple terms it involves immersion of the subject under supervised targeted behavioural pattern using artificial sense of reality through sensory stimulations leaving the subject with limited realisation or awareness to this interference [16][7]. Virtual and Argumentative Reality has proved significance in the medical field especially on the interpretation, practical experiments and treatment application [1][19][23]. In other disciplines like arts and social sciences, it has proved to be a significant tool in analysing historical landmarks and past and modern cultural historical studies [12][17]. The aim of this script is to pin point and the advancement, patterns and to evaluate the Virtual and Augmentative Reality researches in the multi-user spectra [3][11][10]. Existing evidence, shows that a lot of advancement and investigations in diverse sectors though not in the line of multi-user interactions have been fruitful [4][18]. Deep-Learning influence on the Virtual and Augmentative Reality has been investigated by some researchers [2]. It is no longer only in the gaming industry but also in demos in other disciplines. It is a real suspense of reality, which blocks the outside world and focuses on the virtual immersion [9]. In principle, virtual and augmentative reality projections has major pillars of technologies which are the tap roots namely the visual displays, advanced graphics, the accurate tracking system and the server component(database)[5].

1.1. Tele-Experience

This simulated spatial environment allows 3D and animations worlds with the natural environments but make no mistake it's not always meant to obey the natural behavioural patterns of natural physical laws.[13][16] Mock ups demos are simulated to predict the digital behavioural outcomes even with multi-end user, a good example is in

aerospace or cosmology studies. Training which contains nuclear plants can be better observed, orientation and configured in the telepresence space and to tele-supervise the necessary operations [6][20][21].
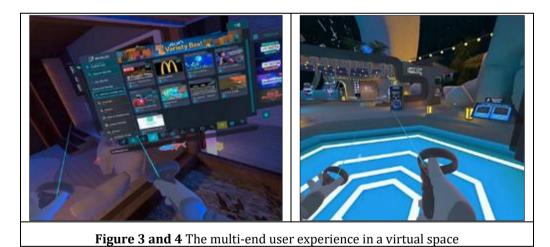

| **Figure 1** Virtual HeadSet used for the practical experimentation | **Figure 2** virtual environment where all the interactions take place |

2. Results and Discussion

Deductively, these enhanced simulation space with sentiments and an increased focused can visualize and de-mystify complex concepts and phenomena with advanced psychological immersion, with robust involvement sometimes with active emotional experience. This is efficient normally on imaginary or scientific concepts which does not have a physical and tangible reference. Furthermore, in the context of interactive group affiliations where the essence of presence and action is necessary, this a prominent structured place for multi end-user setting. The multi end-user setting is an active interface usually done by interaction online but using different smart virtual headset.

Figure 3 and 4 The multi-end user experience in a virtual space

2.1. The Feedback Response

For this, in the practical it was observed, the stereoscopically visionary observations with the advanced head mounted displays. It projects the fabricated interactions through the light waves and computer technological advancement.

The smart tact-suit optimised motors improves the haptic intensity and feedback quality. Tact-visor observations were that it intensifies the feeling of head explosions in both ends users and the interesting component is that the end users hardly feel motors save the vibrations. In that regard the feeling on the precise location of pain and shock is transmitted in the correct sequence. When both end users wear tact sleeves, and release or grab any object they can simultaneously experience it. To continuously navigate the world of virtual reality there's need of constant power supply on the tact sleeves. At the moment the effective way to do that is by attaching the magnetic battery which make use of the wireless charging technology. On the showcase display of this virtual environment, both end users have to calibrate the eye tracking settings in order to experience the incredible reality. The interpupillary distance effect has proved to be useful. This makes it very easy and precise to align the display with the optimal clarity and reducing eye strain during the

interaction between the two end users to such an extent that it even reacts to blinking. Furthermore, this allows for more natural, intuitive control for the interactions and develops much more controlled and creativity. This is special until we put it to the cyber security where some of the security measures are now done by the eyes for example locking and unlocking. Since this space registers some of the data of the eye movement it makes it a potential security threat. More so the virtual reality headsets have high colourful resolution and high contrasts images. This if been exposed to them for quite a long time has some migraine effects to some end users. The observation is that when one of the end users has sight challenges the quality of the virtual reality has to be dealt with. That's where the concept of foveated rendering comes to play. This phenomenon facilitates a better resolution of the image that the end user is focusing on with incredibly top-quality high detail, at the same time rendering the peripheral vision areas in lower detail. This computational power is extremely rapid and precise that both end users might fail to distinguish or to notice it. Even though this is weird according to a small sample that was observed on our experiments. There is now prescription lenses that filter different types of spectral colours can be mounted of the smart headset and are magnetically attached to it hence no need for frame. In that way it becomes less cheap to the end user. The observation is that the multi-user virtual reality headset had a tendency of influence on performance when it comes to the light intensity of the environment on which the end user is operating on. This tends to be a disadvantage to the end user in the sense that they are to be in a better location for them to experience a better-quality session. In the multi-user space in the virtual and argumentative reality there are several responses from the central nervous system due to the rapid changes in the stimuli. Considering these rapid changes it also has a direct impact to the central nervous system since it has to adapt. These changes are what are usually called the cyber-sickness. It was observed that if two end users are in the space where the environment which has some high adrenaline arousals like The Walking Dead: Saints and Sinners game, it causes blood pressure changes with seconds due to the senses such as fear. It also implies that if the end user has chronic disease of high blood pressure this has potential negative effects on the patient. Furthermore, it was noted that the excess repetitive exposure to the virtual reality for long hours especially in the game set-up might causes postural disorder in both end users even going far as the after effects in which one is trying to adapt to the traditional reality [25][22]. In the event where the end users expose to themselves to the intense action interactions such as action games, there is potential risk of the proteus effect where the end users are mimicking the fictional behavioural patterns and characters of the virtual digital identity [24]. Finally, effects like addiction, difficulty in distinguishing the virtual world and the natural real world, toxic behaviours were also noted [14].

3. Conclusion

In conclusion on the subject of the virtual and Argumentative Reality there are countless positives about it, however in the context of the multi-user interaction there are few aspects that one has to be aware to full maximize this technology without abusing it. And in the future, the area of model creations with greater accuracy and diversity has to be worked on.

Compliance with ethical standards

Disclosure of conflict of interest

In respect to this article, we the authors do testify that the conclusion, analyses and the research itself has in no way influenced by any third part.

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