Non-Immersive Virtual Environment for Enhanced Learning

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Abstract: Virtual reality (VR) plays an important role in the fields of education, IT industry, gaming etc. For many challenges of education department are, solved by VR. Using this virtual environment, students can easily feel that, they are really in a particular environment and doing the things. We are interested in developing 3D photorealistic interactive environment and virtual class room which is similar to Massively Multiplayer Online Role Playing Games (MMORPGs). Our proposed system will be very useful for teaching, learning and also for learning. In the proposed system virtual representations of users called avatars are able to interact with other avatars, places or objects and they can share their ideas, experience and thoughts.

Keywords: Learning, Teaching, Virtual Reality, Distance Education Platform.

I. INTRODUCTION

Using a computer VR, can be implemented based on the user creativity. Users can use their own world for their own interest and used for education and games. Like this VR enters in all fields in real world activities and applications.

We are interested to find a potential feature of VR in the educational field and we tried to find its value in research for Human Computer Interface. Researches were done by various scientists for cognitive theory which is very relevant to human learning. The proposed VR is completely a different approach than that of the conventional system which is used in all the schools. We have implemented the proposed system based on their psychological characteristics and we found their interest by the interaction. We construct knowledge base with objects and events in the real world[8].

We have constructed the a new method for learning by using psychological as well as by technical process which describes and analyse the VR. Finally, VR fits the best one learning in the virtual environment.

It’s well-known that learning and teaching based on Virtual Reality is more convenient to human. For example, online classroom, live events, Group discussions, Foreign student interaction. By virtually interacting with simulated environment adds to the immersive feeling of having a real-time experience of what you learning. Now, instead of learning about the historical events, biology, zoology through animated pictures with labels and plastic models, anatomy students can view a virtual character (animals, plants, leaders) and look inside it, turn it around, camera view into the centre and peel back sections for all to see[3]. It can make a collaborative VR learning playground. This is way more interesting and enabling education which is beyond our wildest dreams. We can simulate any situation in a safe environment where the users can explore. It is impossible in real life for experiencing different environment and our own simulated environment in frequent at any time.

II. LITERATURE SURVEY

E-learning

During the past e-learning methods, are used for educational purpose to deliver the contents. Many online courses were offered by e-learning[2,5]. Single user can participate and also it is very little use of virtual environment even though the e-learning is popular. These reasons leads to the path of group of people can participate in virtual environment and made interaction among them by VR.

Creative Learning

For higher level education, VR plays avital role in cost wise very considerable compared to e-learning and other online trainings. VR solves many challenges in educational requirement in a cost effective manner and provides various trainings and researches[4,6].

Education Programs of VR

VR used for many educational institutions for giving training, tutorials and for entertaining setup. Complicated 3D structures can be done by VR which are mainly used for the above said applications. VR based higher level educations were developed and also very interesting programs for teachers also developed such as VRRV/Nebraska, Educators’ VR Series, QuickTime VR(QTVR), VR in the schools, and virtual education - science and math of Texas (VESAMOTEX), and VR Concentration, M.A. in Education[1,7].

III. PROPOSED METHOD

We examined the relationship and distinction between multimedia and virtuality and found that VR goes at least one level above multimedia in terms of perceptual richness. Virtuality gives a cognition and also knowledge acquisition to explore the VR methods to get better feedback for the end users. Virtual education environment provides a platform for learners by using graphics manipulations in real world applications. The knowledge is, transferred in terms of virtual reality. Thus VR provides navigation, immersion and interaction.

Thereby, we extend Mayers’ cognitive theory of multimedia learning to suit virtual reality learning environments, by including a third channel ‘Perceptual’ for handling ‘Perceptions’. The learning environment in this model is desktop VR learning environment, where the kind of interaction and perception that the user could perceive actually differs from multimedia. On the other hand, the students can constructs new knowledge, by integrating prior knowledge with his current experience within VR learning environments. this new knowledge according to Johnson et al. [8] is a mapping of a novel system onto an already familiar one, this is what happens in long-term memory where new knowledge is incorporated with prior knowledge to form again new knowledge and so on. We suggest that students can view as a knowledge constructor who actively selects and constructs pieces of verbal, visual and perceptual knowledge in unique ways.
CONCLUSION

Virtual reality lure the attention of a student. Instead of memorizing facts, more emphasis is placed on the high-level thinking skills needed to construct and apply knowledge. Students must learn to interact with subject in vivid detail, interpret, creativity and solve problems. Additionally, education of a student actions and learning much more than possible in a single lecture, such an approach would be especially beneficial for students who are physically disabled.

References