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VIRTUAL REALITY in Teachers Training

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ABSTRACT :

Teachers training represents the professional preparation of teachers, not merely training of teachers, is something deeper than mere trainning. The existing and innovating technology helps us to cope up with the changing world. A skill used in learning in the field of education and teacher education is also affected by the existing and innovating technology. In this study the authors have tried to point out the relation of dhyana (meditation) with virtual reality and the probable use of virtual reality in various sectors of learning in the field of teacher education.

Introduction:

The world is constantly changing, the main changes in the last decades are in the field of computers, society, culture, edu- socio-economic levels, demand of high skilled workforce in work places, a highly competitive business market; and decreasing students' interest to traditionally prestigious subjects as physics, math etc.In this rapidly changing world learning is changing due to the technologies of learning. The use of technology to enable people to learn anytime .Internet provides a boundary-free way to broaden our horizons of knowledge.

The learning in affective domain is much influential for the teacher educators .The learning strategy in all affective domain goes through perception, conception and value formation. The perception is the most fundamental stage of learning in affective domain. For perception visualization of the problem or teaching point is vital. In our ancient India great saints were used to visualize the problems through dhyana yoga, meditation. Our ancient literature bears lots of examples how the tough concepts like soul, super-soul, divine habits etc are taught to the students. Students have learnt these concepts just by visualizing and realizing the concepts through dhyana yoga, meditation. In the age of technology dhyana yoga, meditations are replaced by Virtual Reality, an exciting technology that holds much promise for delivering innovative new ways for people in the field of Education, Teacher Education.

Virtual Reality

Virtual Reality [1] can be defined as the simulation of a real or imagined environment that can be experienced visually in the three dimensions of width, height, and depth and that may additionally provide an interactive experience visually in full real-time motion with sound and possibly with tactile and other forms of feedback. As such, VR provides a powerful mechanism whereby people can visualize, manipulate or interact with computers and extremely complex data and in some instances can even become an active part of this world. These Three-dimensional models allow students to step away from the two-dimensional character of conventional diagrams, and start visualizing scientific phenomena as they might appear in the "real world."Furthermore, if the three-dimensional model could be made interactive, students could explore the model from any perspective in 3- d space, creating the basis for a Virtual Reality Learning Environment. With rapid improvements in desktop computers, and the increased use of the Internet, new inexpensive multimedia technologies for three-dimensional visualization have been developed. Virtual Reality is a Learning Tool, can be used in a constructivist setting, where students can learn the material through "hands-on" exploration rather than just passively viewing slides or videos.

Teacher Education

Teacher Education means professional preparation of teachers. It is not merely training of teachers. Teacher education is something deeper than mere teacher training. It means the acquisition of that type of knowledge, skills and ability which helps a teacher to discharge his professional duties and responsibilities effectively and efficiency. It means reshaping the attitude, habits and personality of a teacher. If a nation wants quality education it must have quality schools. The quality of schools depend primary upon the quality of teachers. Teachers need to be educated, oriented and equipped properly to play their role most effectively. The teacher education training course has the several scopes for simulations, like simulated

microteaching, macro teaching practice teachings in pear groups, objectives, methodology. Trainee Teachers are trained in a simulated environment, but in real class room environment situations and problems are different, so it takes more time for a trained teacher to adjust in real situation. The learning in affective domain is much influential for the teacher educators .The learning strategy in all affective domain must goes through perception, conception and value formation. The perception is the most fundamental stage of learning in affective domain. For perception visualization of the problem or teaching point is vital. How learning in teacher education develops in terms of virtual reality is shown in the schematic diagram.

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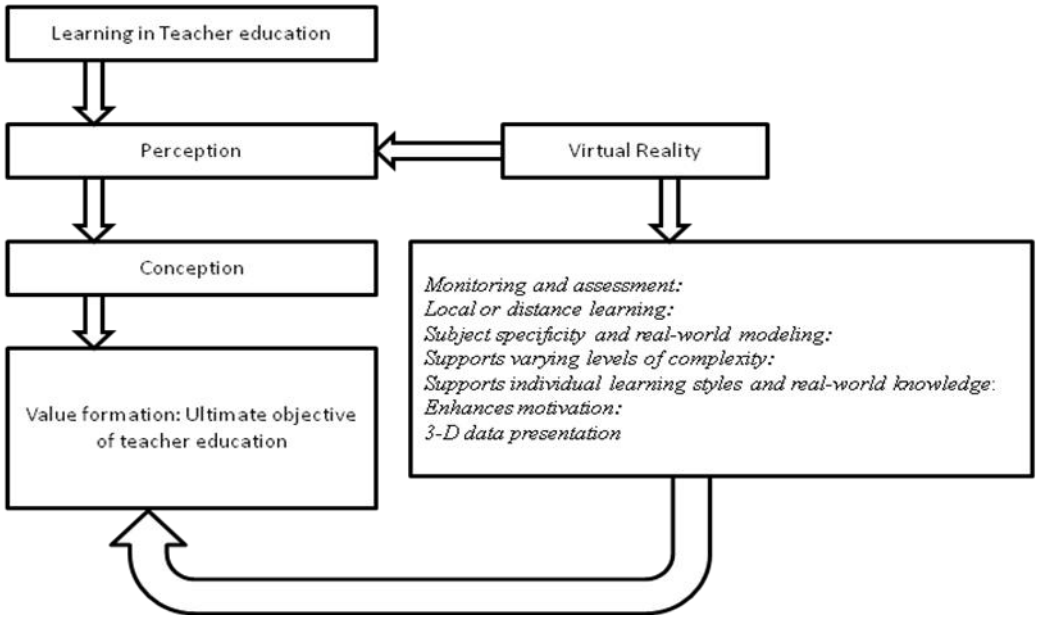

USE FOR VR IN TEACHER EDUCATION

There are many reasons to consider VR as a key teaching technology for use in future teacher education. It is observed in the teaching that VR offers a number of features and characteristics [2-4] that can enhance the teacher education process in various dimensions. The features of VR are

- **3-D data presentation:**

VR environments make it feasible to present ideas and information in a three dimensional format such that users are able to interact with and manipulate information easily in order to understand concepts. This mirrors real world understanding where learners interact with their models in a more intuitive manner.

- **Enhances motivation:**

The motivation and interest of students can be increased through the highly interactive and sensory nature of VR technology.

- **Supports individual learning styles and real-world knowledge:**

Different learning styles can be accommodated within the virtual educational environment that meets individual learners' requirements. Virtual immersion also allows learners to construct knowledge based on direct personal experience, not just from theoretical descriptions. This allows learners to interact directly with objects in a similar manner to that of a real world.

- **Supports varying levels of complexity:**

Complex models and abstract material can be transformed into simpler quantitative representations using VR technology. Educators can create different levels of complexities for a particular model or subject and based on these complexities students can use their knowledge to easily understand and perform tasks at a level that is appropriate to their required or prior learning experiences.

- **Subject specificity and real-world modeling:**

VR can be used in specific subjects that rely heavily on visualization such as, science; finance engineering, mathematics and social science.VR can also offer utilities to simulate conditions where it would be dangerous, difficult, or costly educate students in real world environments.

- **Local or distance learning:**

Synchronous and peer-to-peer education can be easily integrated into virtual educational settings. This may be evident as a form of learning which mirrors the traditional methods of teaching (teaching by telling) or it may be expanded across different boundaries including those of time and distance.

- **Monitoring and assessment:**

Performance monitoring as a critical educational tool can be easily integrated with virtual educational settings.

APPLICATION OF VR IN EDUCATION AND TRAINING

VR is just beginning to be applied in education and training. Students can study anatomy or explore our galaxy. Some training applications relate to health and safety. In the future, students will be able to learn through studying in virtual worlds. Chemistry students will be able to conduct experiments without risking an accidental explosion in the lab. Astronomy students will be able to visit a range of virtual galaxies to study their properties. History students will be able to visit different historical events and perhaps even participate in the action with historical figures. English students could be on stage at the Globe Theater as it was when Shakespeare's plays were first presented. They will also be able to enter into a book and interact with its characters. Virtual reality will also be used in teaching adults. Trainees in a wide variety of environments will be able to safely try out new techniques. They will be able to learn by doing tasks virtually before applying them in the real world. They will use these practice tasks in hazardous environs and also practice dealing with emergencies on the job. However, much remains to be done to bring virtual reality fully into the classroom or the training facility [5-8].

CONCLUSION :

Virtual Reality will evolve and grow very rapidly in the future. As the world is highly being networked regardless of geographical barriers, need better management to fulfill more needs of the society. Hence, the Virtual Reality in Teacher Education acts as a medium towards advancement. It is expected that Virtual Environments will become wide spread by the year 2020. Such environments will greatly change the way we learn and do things. The students must feel comfortable in order to build a stronger India. It's only a beginning but a lot still needs to be done. The global demand for new knowledge and skills are the necessity for lifelong learning. Our ancient education system has a strong back ground of virtual reality in the name of meditation, students, teachers,(rishi-munni) practised to bring the real world in front of them in terms of meditation. It was the only way to realize any problem and to find its solution through meditation. Konad (Indian Philosopher) has given the idea of atom (paramanu) in terms of meditation that is the one of the example of virtual reality. Sri Krishna taught Arjiuna at the battle field in terms of virtual reality, he explained the concepts of karma yoga, self-lessens, immortality of soul and divine concept of birth rebirth on the battle field with the help of virtual reality. The knowledge and education given to Arjuna by Shrikirshna is worldwide accepted in the modern world. The teacher education training course has the several scopes for simulations, like simulated microteaching, macro teaching practice teachings in pear groups, objectives, methodology. Teachers are trained in a simulated environment, but in real class room environment situations and problems are different, so it takes more time for a trained teacher to adjust in real situation, the concept and use of virtual reality may open a new and effective path for teacher education.

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