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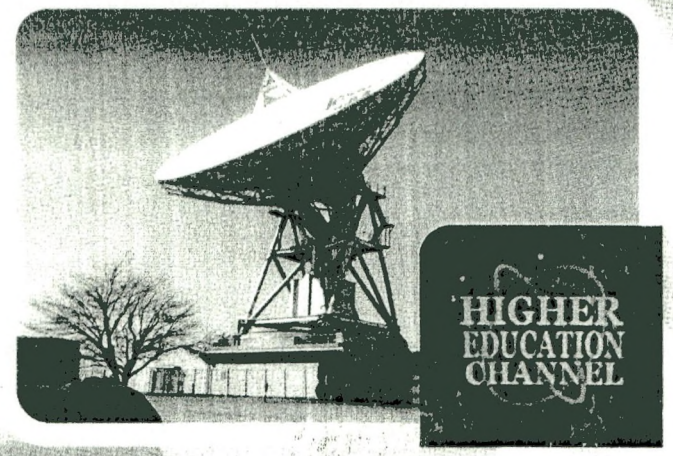
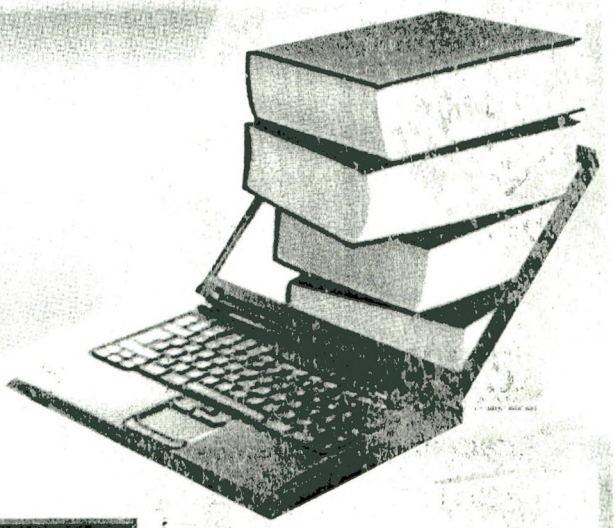
Virtual education: Issues, Challenges and Prospects





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DOVETAILING VIRTUAL REALITY IN FASHION AND INTERIOR DESIGNING –PROS AND CONS

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Virtual reality (VR) is a catch phrase that applies to computer-simulated environments that can simulate physical presence in places in the real, and imaginary worlds. As a pre-production tool and an emerging reality in the fashion and interior design world affords positive benefits and uses in architecture, industry and fashion design. The item sold is a building or a fashionable outfit, the ability of the client to see and visualize with realistic representations positively influences both the evolution of the design and the attitude of the client.

Creating perfect interior living spaces can be fun. It all begins with a plan. Traditional methods in interior design usually lack depth and sense of realism and require the designer and the client to meet in one place. These problems are solved by utilizing shared VR in the design process in recent days. A building can be created with navigable, interactive, and immersive experience while still being designed when both architect and client can experience the structure and make changes before construction begins. Every building built today is actually a physical prototype, leaving little room for input or changes until after construction.

VR allows creation of an electronic prototype amenable to modification, so that costly changes during or after construction can be avoided. Though clients will not only be able to see the structure, they would hear sounds from within it, feel its textures, and experience its fragrances. Home builders and real-estate developers particularly are excited about the potential of virtual reality to sell their designs. Those who offer their clients such an option remain a cut above all others.

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Virtual Fashion Designing is again a great way to make unique style ideas come to life. Fashion identity and styling, are possibly the most consistent, popular activities in virtual worlds. Fashion business is booming and clothing designers are experimenting and promoting design systems that permits to bring in creative fantasies to life, like running a complete draping simulation. In future, customers could choose fabrics /patterns for their garments as well. Through VR, customizing the model -"dressed" in the chosen garment and moved around - is made possible.

Designers re-create and express in 3D virtual online world offering low entry costs to actively encourage user generated content and creative social development projects. Nevertheless, it is imperative that the social implications of the technology be analysed. The argument put forth is whether designers should surrender their originality, creativity, ingenuity and indigenousness to this upcoming technology? Would VR in the real sense address the philosophical trends, intellectual inclinations, psychological concepts, socio-economic factors, affordability and the question of access – specific to the developing countries and India in particular? The article analyses these prospects.

Introduction

Many science fiction books and films have imagined characters being "trapped in virtual reality". A comprehensive and specific fictional model for virtual reality was published in 1935 in the short story 'Pygmalion's Spectacles' by Stanley G. Weinbaum. In the story, the main character, Dan Burke, meets an elfin professor, Albert Ludwig, who had invented a pair of goggles which enable "a movie that gives one sight and sound, taste, smell, and touch. You are in the story, you speak to the shadows (characters) and they reply, and instead of being on a screen, the story is all about you, and you are in it, similarly can forget the thrill of reading 'Alice in Wonderland' – a VR story of bygone days.

Note another character in the Mahabharatha war scene - Sanjayan ---he describes the war,scene by scene,to the blind king Dhridarashra using his extraordinary vision - Doordarshan --given by Vyasa Rishi----is it possible?----But, it really had happened in the Trojan war too; the Trojan king was watching all the events sitting in the fort walls, it was quite possible to accurately see all the happenings in the war which was going on in the ground level. His ministers were watching the events and describing to him. Only when important clashes occurred the king Priam used to come personally and watch.

Scope

VR creates a winning situation for homeowners, designers, contractors, buyers or investors The interior design renderings bring any property to life. They are very artistic, realistic, affordable, and custom designed to client specifications. 3D virtual tour of interiors produce a lasting impression by helping one to visualize how each room in an apartment, home or office will look like in the concept stage itself before even a brick is laid. Knowing in advance how one's living space, kitchen or dining room will look enables a client to make the necessary changes to turn one's beautiful dreams into reality. Client gets the flexibility to assess how each furniture, fabric or lighting looks and change them to suit personal tastes.

3D furnished interior design walkthroughs perform as effective and compelling sales tools by helping buyers appreciate the possible future layout of space they intend to purchase, be it for office, restaurant, apartments, homes, church, shops or commercial buildings. The technology provides a total visual experience to see the layout, fixtures, furniture options and colour and texture coordinates in an interior. Additional service of animating one's furnished interior renderings in real time is an added advantage. This enables viewing the designs from various angles by rotating the 3D visuals with a click of the mouse. More and more people are opting for interior renderings as they feel the need to visualize in understanding and deciding on their choice before committing to final plans. It creates an atmosphere of being present at the location and looking around in person. The designers would simulate redecoration, including changing the colour of the walls, replacing furniture, reupholstering, putting in new carpet or any physical change a homeowner or potential homeowner can imagine. An interior decorator can put the whole look together in minutes and show the buyer exactly how an entire room will look. The simple interface gives consumers the power to try different arrangements for their new home. Once consumers approve, they can simply hand the directions to movers, making moving less stressful and saving moving costs, time and money.

A realistic virtual reality space will supply an excellent solution for interior design and marketing. After modelling a room or other space in 3D system it will be easy to test different surface materials and furnishing elements in order to find out visual impression, functionality or ergonomics, opine Kuusisto and Launonen (1997). A traditional two dimensional image gives very limited possibilities to test different alternatives in a realistic space. Virtual reality offers a possibility to influence human sensory processing and perception and reality judgments by altering the quality of sensory data.

Other programs, some available commercially on CDs and others appearing for free on Web sites, let people learn about the world by paying virtual visits to distant places. Many virtual tours feature panoramic views through which a visitor can turn by using a mouse. Some panoramas also allow the viewer to look up and down, as if standing in a cube or a bubble, and to zoom in on particular parts of the panorama. Clicking on certain spots in the panorama may take the viewer to other panoramas, still photos, or text information about those spots.Getting acclimated to a virtual 3D experience will provide designers with the ability to think and conceptualize in 3D.

The term "virtual fashion" can refer to fashion developed specifically for end use in the virtual world or fashion that is developed "virtually" via a multi dimensional application or "in the virtual world" for the real world global apparel industry. Virtual reality is creating a highly photorealistic environment in fashion related education and business. Fashion designers could possibly be creating environmental simulation on their creative projects. Virtual reality provides hyper-realistic simulations to fashion designers by removing their habitual thinking, and giving chances to fashion designers to experience both physical properties of fabrics and clothing, and theoretical concepts such as lighting effects, colour and atmosphere in a three-dimensional view. The technology also enables fashion designers for:

- Arrangement of patterns on the virtual human forms
- Simulated garment assembly
- Virtual pattern and garment alteration
- Texturisation of the apparels
- Animation of computerised garment

The global apparel industry is now transitioning over to multi dimensional product development applications that will empower the industry to develop in virtual 3D digital format [using virtual avatars]. Fashion applications in the industry have only recently realized the critical necessity of integrating 3D technology into existing 2D applications. The user can draft a computerized sloper into Pattern Design System that can be endlessly modified to include original styling lines. 3D draping cloth simulation and modeling engine that enables textile designs to be applied to a specific type of fabric and draping, weight, volume, density, etc. properties of the fabric can be programmed in to simulate the real thing. This is used for garment draping and 3D visualization. The fabric is simulated on to the garment pattern and the model can be placed into static poses that can be captured from a 360 degree angle. This fully integrated 2D>3D>2D system can transform the fashion product development process by saving valuable development time.

Designers and stylists have been exploring and testing new concepts using 3D representations. Integrating design, simulation and collaboration tools, designers can see exactly how their ideas will come to life on a three dimensional plane and immediately make any change they can imagine, unlike challenges faced using traditional fabric and pattern design. This multidimensional application will provide a significant impact on the resulting quick response, cost effectiveness, global fitting standardization, pre-marketing and marketing uses of fashion industry. The online communication of the virtual garment to the various levels of supply chain (designers, producers, merchandisers, forecasting teams, buyers, vendors and consumers) for the product acceptance, is an added advantage of the virtual garment prototyping.

Virtual Fashion Designing is again a great way to make unique style ideas come to life. Fashion identity and styling, are possibly the most consistent, popular activities in virtual worlds. Fashion business is booming and clothing designers are experimenting and promoting design systems that permits to bring in creative fantasies to life, like running a complete draping simulation. In future, customers could choose fabrics /patterns for their garments as well. Through VR, customizing the model -"dressed" in the chosen garment and moved around (Virtual garment customization) is made possible. Commercial simulated user-interactive try-on systems such as E-fit Simulator,3D Male Avatar Adam,Parametric Pattern Generator,Virtual stitching: V-stitcher by Gerber,V-Styler,Virtual Styling: Jasmine,Optitex, Assist Bullmer etc provide an cutting edge to the designers for exploring and creating newer styles.

Exciting Possibilities

Virtual Reality in these two domains provide with lateral prospects which:

- Enhance use of artifacts to augment interpersonal communication codes.
- Enable to feature real world experience as future real world norms and practices -the real world of virtual space.
- Promote individual freedom, help simulate real- life face- to- face interaction, and facilitate to contact people from diverse backgrounds.
- Lead to an increasing emphasis on interdisciplinary perspectives, technology training and thrust on applied research.
- Augment demand for virtual goods and services and help increase economic productivity-'virtual economy'.
- Motivate hands- on training and improve design skills development in younger generation.
- Encourage indirect entrepreneurship and employment avenues.
- Enlist photo-realistic renderings of furnished interiors with visual 3D that give you a competitive edge to hard sell a project or win construction contracts.
- Motivate VR reconstruction: Virtual reality enables heritage sites to be recreated extremely accurately, so that the recreations can be published in various media (Pimentel, K., & Teixeira, K,1993) The original sites are often inaccessible to the public, or may even no longer exist. This technology can be used to develop virtual replicas of caves, natural environment, old towns, monuments, sculptures and archaeological elements (King,2005).
- Provide fashion education programs with the tools to teach students a specialized (fashion) conceptual skill set from working in a 3D virtual reality environment that is free enabling open access for all fashion programs.
- Prepare students with virtual skills to satisfy employer expectations relating to 3D conceptualization.
- Virtual worlds hold great promise for product development, just-in-time manufacturing and multidimensional retailing.
- Design clothing used to increase or decrease the salience of body shape or motion in fashion designing.
- Eliminate steps and cut process costs in fashion industry.
- Conceptualize 2D patterns being pieced together and sewn into a 3D garment right in front of their eyes.
- Emphasis perfect fit, mass customization, cost effectiveness for design, development, prototyping and e-commerce marketing.
- Create customized industrial patterns and market them directly to the public using the custom avatar imagery that was created in the product development process.

Frightening Visions

- Cues that the human brain uses to make sense of the real world are left out in virtual environments. This may

result in misinterpretation of sensory data and poor cognitive performance. Likewise, if sensory input is not properly coordinated, it may result in negative consequences. For instance if vision and balance are not properly coordinated it may result in motion sickness, disorientation, poor motor coordination and so on and so forth.

- Only computer literates can access and benefit from the technology
- Offers limited access: only those who can afford can access and is meant mainly for affluent, urban based population.
- May widen gap between haves and have-nots.
- Employment farfetched for computer-savvy and digital – oriented aspirants.
- VR worlds are limited by processing requirements and equipments are still relatively expensive.
- Struggle over how the technology is to be designed, used and understood still persists.
- Interpersonal communication is based on voluntary consent and 'social contract'.
- VR is likely to bring up problems of identity theft, issues of intellectual and virtual property rights.
- Fetishism
- Designers may lose their inherent abilities of creativity and imagination.
- Difficult to create a high-fidelity virtual reality experience, due largely to technical limitations on processing power, image resolution, and communication bandwidth; however, the technology's proponents hope that such limitations will be overcome as processor, imaging, and data communication technologies become more powerful and cost-effective over time.
- Accuracy of the simulation for representing accurately wrinkles, folds, permanent creases and refined design details need to be speeded up.
- Clients may face dearth of variation;rather the process may end up as "monotonous".
- Anchorage for, "survival of the fittest".
- Vertical mobility and patronage only for those on the trade. Convention based designers may fade away from the field creating too many Fabians and laggards.

Success of the technology

Cognitive processing, psychological stability and social relationships are the three key concepts that make up the Hierarchy of Design considerations in this technology, that is, a user must be able to understand, to act within, to influence and to interact within a virtual environment. Success then would depend upon the players' integrity coupled with their ethical sense and of the plausible answers to the following:

- What is life like in virtual space?
- How does the virtual world influence the real world?
- How do individuals respond to new social and environmental conditions?
- What limitations do those entail and what are the acceptable limits?
- What are the potential impacts of these elements?
- Will the designer be responsible for a user's satisfaction and well-being?
- Will the designs be legally/ morally responsible for poor system design of products?
- How to create a social and material environment which promotes human thriving and well being?
- Question of need for autonomy and safety.

Suggestions for perusal

- Understand human compatibility requirements within virtual worlds.
- Formalize ethical and design principles for the development of virtual worlds.
- Do research studies on feasibility of virtual reality (ID and FD) Vs India and Indians.

References:

- Pimentel, K., & Teixeira, K. (1993). Virtual reality. New York: McGraw-Hill. **ISBN 9780830640652**
- King, T (2005)"Architecture's Virtual Shake-Up", *Click*, BBC World News (2005-10-28)
- Kuusisto. M and Launonen. R. (1997) Virtual Reality for Visualisation of Interior Decoration and Furnishing, ERCIM News No.31 – October
- Wolfgang, H (2009) Interactive environments with open-source software,Springer Wien, New York.
- Barnard, M(2003), *Fashion* as Communication, 2nd ed., Routledge,

2002. Beck Proceedings of the IEEE *Virtual Reality*.

- Pascal. V, Frederic. C& Magnenat. T.N.(2005): From Early Virtual Garment Simulation to Interactive Fashion Design, Computer-Aided-Design, 37, 593-608.
- Volino .P. & Magnenat .N.T,Virtual Clothing - Theory and Practice.
- Chatterjee.K.N, Khanna. S., and Chaudhary. J,Simulated reality: A boon to fashion industry, The Indian Textile Journal, August 2011.
- www.optitex.com