

# Promoting Morality in Virtual Reality Learning Systems

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## Abstract

*Unprecedented advancement in information and communication technologies has opened new vistas of education and training. Virtual Reality Environments (VLEs) are becoming increasingly popular and expanding rapidly. Anyhow, in any educational setting, teachers are role model for their learners and they are responsible for their academic as well as moral development. Teachers and educational institutions provide opportunities of learning moral values to their students. Institution will have to develop a variety of means for moral development of students (Kaur, 2015). Main purpose of this study was to assess role of teachers and institutions in promoting morality in a virtual reality system. Data were collected via a questionnaire and reliability of the research tool was .80 (Chronbach's Alpha). Randomly taken sample of the study consisted of 60 students. SPSS XVII version was used for the analysis of data.*

Keywords: ICTs, Virtual Reality, Promoting Morality, Values

## INTRODUCTION

Rapid advancement in Information and Communication Technologies (ICTs) have revolutionized every aspect of human life especially education and training. Learning through Virtual Reality Learning Environments (VLEs) is getting increasing popularity around the globe. VLEs are useful in motivating learners, providing them social atmosphere, making passive learners active, encouraging creativity, teaching computer skills and interactivity (Clifford, 2012 & Pantelidis, 2009). Although Virtual Reality (VR) is an impressive learning tool, there are some issues of designing and developing (Chen, 2006). Regarding capabilities, potentialities and educational applications of virtual reality, Winn (1993) states that:

- Immersive virtual reality presents first-person non-symbolic experiences.
- Formal education system cannot provide such learning experiences.

- Virtual reality learning system supports constructive learning.
- VLEs make up the bulk of daily interaction of learners with the world.
- Virtual reality technology boosts learning by manipulating relative size of objects.

Winn concludes that virtual reality learning system is a route to success and perfectly capable of mastering learning concepts. VLEs empower students, support new instructional approaches, improve cognitive skills and develop attitudes (Zacharia, 2003). Virtual reality can enhance real-life experience by providing authentic, relevant scenarios, unrestricted and replayed options (Ferry et al. 2004). Similarly, Pantelidis, 2010 advocates VLEs for following reasons:

- Virtual reality learning environments provide new forms and methods of visualization.
- Alternative methods for presentation of material can be provided by VLEs.
- Some features and processes of learning material can accurately be presented by VLEs.
- Virtual reality learning environments motivate students for learning.
- Extreme close-up observation and examination of an object or event is possible through VLEs which is unavailable by other means.
- Similarly observation from a great distance is possible through this system.
- VLEs promote active learning instead of passivity.
- Social environment can be provided by VLEs.
- Through virtual reality, students can proceed in learning at their own pace.
- VLEs are helpful in learning for disables.
- Different cultures can be presented while learning through VLEs.

- VLEs make students familiar with modern technologies.
- Collaboration learning method can be encouraged by VLEs.
- Virtual reality learning environments are helpful in transcending language barriers.

**TEACHING OF ETHICS AND MORALITY IN VLRs**

Along with technological mutation in learning environments, humanity is facing the most critical challenge of lack of morality which can be addressed by promoting morality in VLEs. Virtual reality can be used for ethical and moral education as this system can present the learning material artistically and in an interesting way. Many aspects of human life and interactions can be learned through VLEs without any risk. Avatars and character of personalities are used for posing ethical or moral situation in virtual reality. In VLRs this experience or character can be repeated as required and learners can understand ethical dilemmas, ethical solutions and consequences. Learners can take active part in different moral and immoral situations and resultantly, would be able to respond morally in any ethical experience. Morality or ethics can be introduced by several methods in VLRs such as Second Life (Houser, 2011). People interact with each other by many ways in their daily life and surely, their moral development is indispensable for societal peace, progress and prosperity. Students' moral needs, moral beliefs, moral feelings and moral qualities are developed by moral development programs. There are many moral qualities; some important universal moral qualities are given here:

- Humanity
- Respect
- Responsibility
- Peace
- Honesty
- Courage
- Cooperation
- Friendship
- Discipline
- Justice
- Humility
- Conscience
- Kindness
- Tolerance
- Modesty (Jarrar (2013), Kaur, (2015) and Ma (2006)

**MAIN PURPOSE OF THE STUDY**

Main purpose of this study was to assess role of virtual reality learning systems in promoting morality in students. Moreover, effectiveness of teaching learning process mediated by VLRs was also determined in this study.

**RESEARCH METHODOLOGY**

This study was conducted to compare the effects of virtual reality learning systems (VLEs) with traditional instructions. Jarmon et. al. (2009) proposed virtual world such as Second Life, ideal for using experiential learning and it was an

experimental study. Randomly, sixty undergraduate students were taken as a sample of the study. For comparison purpose these 60 (M=30+FM=30) students were divided into two equal groups. Sixty (M=30+FM=30) students were assigned to experimental group and 60 (M=30+FM=30) to control group. The students of experimental group were taught 15 morality qualities i.e. (1) humanity, (2) respect, (3) responsibility, (4) peace, (5) honesty, (6) courage, (7) cooperation, (8) friendship, (9) discipline, (10) justice, (11) humility (12) conscience, (13) kindness, (14) tolerance and (15) modesty were taught in five lessons through VLEs. Each student saw an avatar performing the above mentioned moral characters (humanity...modesty) in different situations. In each lesson, virtual persons enjoyed and appreciated his role. Students of control group were taught the above mentioned qualities through traditional method of instructions. Effectiveness of this VLEs mediated instructions was assessed in the above mentioned moral values, by a questionnaire which was administered immediately after completing the experiment/teaching to both groups. Reliability of the questionnaire was .80 (Chronbach's Alpha).

**. DATA ANALYSIS**

To elicit the valuable opinion of the respondents, at the end of the experiment, a questionnaire was administered for both the groups i.e. experimental and control. Collected data were from both the groups were analyzed through SPSS XVII by running percentages, mean scores and t-test formulas.

*Table 1: Significance of difference between the mean scores of male students of experimental and control groups*

Group	Number	df	Mean	sd	SED	t-Value
Experimental	30	29	24	6		
Control	30	29	23	7	1.3	0.585*
*Not Significant			Table Value at 0.05=2.78			

Table 1 shows that the value of t (0.585) was found lesser than the table value of t (2.78) at 0.05 levels. Therefore, there was no significant difference between the mean scores of male students of experimental and control groups on previous moral needs, moral beliefs and moral feelings. Hence, both the groups were treated statistically equal.

*Table 2: Significance of difference between the mean scores of female students of experimental and control groups*

Group	Number	df	Mean	sd	SED	t-Value
Experimental	30	29	29	4.6		
Control	30	29	28	4.7	1.00	0.56*
*Not Significant			Table Value at 0.05=2.78			

Table 2 shows that the value of t (0.56) was found lesser than the table value of t (2.78) at 0.05 levels. Therefore, there was no significant difference between the mean scores of female students of experimental and control groups on previous moral needs, moral beliefs and moral feelings. Hence, both the groups were treated statistically equal.

**Table 3:** Comparison of the mean scores of male students of experimental and control groups on post-test

Group	Number	df	Mean	sd	SED	t-Value
Experimental	30	29	41	5		
Control	30	29	35	7	1.23	3.30*
*Significant			Table Value at 0.05=2.78			

Table 3 shows that the value of t (3.30) was found greater than the table value of t (2.78) at 0.05 levels. Therefore, there was significant difference between the mean scores of male students of experimental and control groups. Hence, it was concluded that moral development through VLEs is more effective than traditional instructions.

**Table 4:** Comparison of the mean scores of female students of experimental and control groups on post-test

Group	Number	df	Mean	sd	SED	t-Value
Experimental	30	29	40	5		
Control	30	29	34	6	1.24	3.35*
*Significant			Table Value at 0.05=2.78			

Table 4 shows that the value of t (3.35) was found greater than the table value of t (2.78) at 0.05 levels. Therefore, there was significant difference between the mean scores of female students of experimental and control groups. Hence, it was concluded that moral development through VLEs is more effective than traditional instructions.

## DISCUSSION

Main purpose of the study was to assess the effectiveness of virtual reality learning systems in promoting morality in students. Results of this study revealed that morality qualities i.e. (1) humanity, (2) respect, (3) responsibility, (4) peace, (5) honesty, (6) courage, (7) cooperation, (8) friendship, (9) discipline, (10) justice, (11) humility (12) conscience, (13) kindness, (14) tolerance and (15) modesty taught through VLEs mediated teaching learning process was more effective method than traditional method of instruction.

Numerous studies have been conducted on the effects of VLEs on teaching ethical education, students' moral needs, moral beliefs, moral qualities and morality development. Generally, the conclusion is that VLEs mediated teaching has a positive effect on student learning.

Virtual reality has been shown to be a powerful tool in education (Good, 2013), such results might be interpreted in the light of the fact that VLEs improves learning of learners because virtual reality manipulates students' moral identities in the physical and learners' were prompted to hand copy of the learned character either moral or immoral (Houser et al., 2011; Segovia, Bailenson & Monin, 2004; Zhong, & Liljenquist, 2006).

Through interactions and observations, VLEs provide an opportunity to integrate theories and concepts of ethical theories with experiential learning. Students can apply theories and concepts in both virtual and real world; demonstrate ethical issue recognition; show the skills to differentiate ethical perspectives/concepts; and evaluate different ethical concepts/perspectives (AAC&U, 2007).

Incorporation of virtual worlds such as Second Life in teaching is being increased due to characteristics of support in exploration, interaction, simulation, role play and experimentation via avatars. (Burgess et al., 2010; Penfold, 2008; Salt, Atkins, & Blackall, 2008). Jarmon et al. (2009) described that virtual world provide opportunities to experience both similar and different real world experiences. Hence, use of VLEs for learning is increasing. VLEs mediated learning process is used in qualitative research, ethnography, medicine, instructing on diabetes, nursing, psychology, experiencing social interactions, social services, travel and tourism (Delwiche (2006); Wiecha et al., (2010); Skiba, (2007); Maxim, Sable, & Cristiano, (2009) and Penfold (2008).

Burgess et al. described VLEs mediated learning process offers feeling of presence through avatars. A key benefit of using MUVES is the feeling of presence, through avatars, which translates into a feeling of being connected to others (Burgess, et al., 2010). Therefore, virtual worlds and three-dimensional avatars are getting popularity and being widely adopted (Suh, Kim, & Suh, 2011).

## CONCLUSION

Although morality development through VLEs mediated learning is costly, it may be promoted due to its valuable benefits for the learners. Virtual reality learning systems are useful in developing students' moral beliefs and qualities. The VLEs confirmed evidence of educational effectiveness, hence, motivates further research lines.

## REFERENCES

- [1] AAC&U(2007). Association of American Colleges and Universities.(2007). *College learning for the new global century*. Washington, D.C.: AAC&U.
- [2] Burgess, M., Slate, J., Rojas-LeBouef, A., & LaPrarie, K. (2010). Teaching and learning in Second Life: Using the community of inquiry (Col) model to support online instruction with graduate students in instructional technology, *Internet and Higher Education*, 13(1), 84-88.
- [3] Clifford, M. (2012). Top Twenty Uses of Virtual Worlds in Education.
- [4] Delwiche, A. (2006). Massively multiplayer online games (MMOs) in the new media classroom. *Educational Technology & Society*, 9(3), 160-172.
- [5] House, R., Thoma, S., Loppock, A., Mazer, M., Midkiff, L., Younanianan, M. & Young, S. (2011). Learning Ethics through Virtual Fieldtrips: Teaching Ethical Theories through Virtual Experiences. *International Journal of Teaching and Learning in Higher Education*. 2011, Volume 23, Number 2, 260-268.
- [6] Jarrar, A. (2013). Moral Values Education in Terms of Graduate University Students Perspectives: A Jordanian Sample. *International Education Studies*; Vol. 6, No. 2; 2013
- [7] Kaur, S. (2015). Moral Values In Education. *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)* Volume 20, Issue 3, Ver. III (Mar. 2015), PP 21-26.
- [8] Ma, H. K. (2006). Moral competence as a positive youth development construct: Conceptual bases and implications for curriculum development. *International Journal of Adolescent Medicine and Health*, 18(3), 371-378.
- [9] Maxim, B. R., Sable, M. D., & Cristiano, J. (2009). Work in progress- using the virtual world to improve our world. Paper presented to the 39<sup>th</sup> ASEE/IEEE Frontiers in Education Conference, San Antonio, TX.
- [10] Pantelidis, S. V. (2009). Reasons to Use Virtual Reality in Education. Retrieved on December 20, 2015 from <http://vr.coe.edu/reas.html>

- [11] Penfold, P. (2008). Learning through the world of Second Life-A hospitality and tourism experience. *Journal of Teaching in Travel & Tourism*, 8(2-3), 139-160.
- [12] Salt, B., Atkins, C., & Blackall, L. (2008). Engaging with second life: Real education in a virtual world. Published by The SLENZ Project for the New Zealand Tertiary Education Commission.
- [13] Segovia, Y.K., Bailenson, N.J. & Monin, B. (2004). Morality in Tele-immersive environment. Paper presented in conference 04 on Jan-Feb 2004.
- [14] Skiba, D. (2007). Nursing Education 2.0: Second Life. *Nursing Education Perspectives*, 28(3), 156-157.
- [15] Wiecha, J., Heyden, R., Sternthal, E., & Merialdi, M. (2010). Learning in a virtual world: Experiences with using Second Life for medical education. *Journal of Medical Internet Research*, 12(1):e1.
- [16] Winn, W. (1993). A conceptual basis for educational applications of virtual reality (Technical Report TR-93-9). Seattle, Washington: Human Interface Technology Laboratory, University of Washington. Retrieved from <http://www.hitl.washington.edu/publications/r-93-9/>
- [17] Zacharia, Z. (2003). Using interactive simulations to enhance students' explanations regarding physical phenomena. Retrieved from [http://cblis.uniza.sk/cblis-cd-old/2003/3.PartB/Papers/Computer\\_Based\\_Learning/Zacharia.pdf](http://cblis.uniza.sk/cblis-cd-old/2003/3.PartB/Papers/Computer_Based_Learning/Zacharia.pdf).
- [18] Zhong, C. B., & Liljenquist, K. (2006). Washing away your sins: Threatened morality and physical cleansing. *Science*, 313(5792), 1451.