PAST AND FUTURE APPLICATIONS OF 3-D (VIRTUAL REALITY) TECHNOLOGY

N. Foreman, L. Korallo

Abstract
Virtual Reality (virtual environment technology, VET) has been widely available for twenty years. In that time, the benefits of using virtual environments (VEs) have become clear in many areas of application, including assessment and training, education, rehabilitation and psychological research in spatial cognition. The flexibility, reproducibility and adaptability of VEs are especially important, particularly in the training and testing of navigational and way-finding skills. Transfer of training between real and virtual environments has been found to be reliable. However, input device usage can compromise spatial information acquisition from VEs, and distances in VEs are invariably underestimated. The present review traces the evolution of VET, anticipates future areas in which developments are likely to occur, and highlights areas in which research is needed to optimise usage.

Keywords: virtual reality technology, applications, benefits and drawbacks, future applications, future research

Acknowledgement. The authors are grateful for support from the Russian Scientific Foundation; grant number RNF 14-15-00918, “Optimization of technologies and restoration of cognitive functions of humans in virtual environments”. The authors would also like to thank several colleagues and friends for interesting and valuable conversations related to Virtual Reality and spatial cognition in Saint Petersburg, in ITMO, the Faculty of Psychology of the State University, and the I.P. Pavlov Institute RAS, particularly Professor Yuri Evgenievich Shelepin, also in the course of a recent lecture visit to Aktobe, Kazakhstan, the President of the Russian-Kazakh University, Berdimuratov Temirkhan Baybosynovich, Dr. Danna Naurzalina, the Head of the Psychology Department Yapparova Gulfiya Muratovna, and members of the Aktobe regional Education Department.

References
51. Wiederhold B.K., Wiederhold M.D. Lessons learned from 600 virtual reality sessions. Cyberpsychology and Behavior, 2000, vol. 3, no. 3, pp. 393–400. doi: 10.1089/10949310050078841


