The use of virtual reality information and communications technology may become a powerful tool for virtual education. Yet, without an adequate evaluation and comprehension of its role in the educational process it may also become disproportionate activism. Explaining the value of 3D virtual reality technology in educational applications that contribute to an overall improvement of students' motivation and learning experiences has become one of the main challenges for institutions that set out to implement virtual learning environments as cross-sectional elements in the training process. Integrating multimedia or virtual reality with self-managed learning processes may offer an intense and interactive experience supplementary to traditional classroom conferences, thus adding an innovative online learning to study plans and professional training (Huang, Backman, Backman, McGuire, & Moore, 2019).

At Politecnico Grancolombiano "we have understood that digital scenarios require multimedia elements, making it necessary to speak multiple 'languages'. Students have learned lots in this long road to virtual education, but we at Politecnico Grancolombiano have also gained important experience to consolidate this dream of providing access to quality education for Colombians." (Norman-Acevedo, 2018, Page 124). In the case of virtual environments, participants are immerse in corporal experiences such as physical perception and body realism. For instance, better approaches may be analysed to improve student autonomy in a 3D virtual world, in which sensations provide a predominant factor in study development (Yeh & Lan, 2018).

Studies from Lin, Wang, Wang, & Wang (2018); Ouherrou, Elhammoumi, Benmarrakchi, & El Kafi (2019); Zatarain Cabada, Barron Estrada, Rios Felix, & Alor Hernandez (2018), currently analyse individual behaviour in training processes within augmented reality environments, exploring motivation and gratification processes in participants through gamification or getting recognition by a group of peers.

But it is not necessary to refer to highly technical developments to be able to experience these type of reactions. Other studies suggest participant interaction with their social networks to explore the possibility of subject interaction in platforms without any simulation at all, such as in the study conducted in Matebeleland (a historically complex region in Zimbabwe) which used a site called 'The Forum' as case study to evince how the virtual sphere has revolutionized the public Habermasian sphere (Mhlanga & Mpofu, 2017), identifying social effects that could be leveraged by education.

A recent trend has used the term 'virtual worlds' for said environments (A. Wang, 2017), which are actual computer-based and multiuser virtual environments that simulate life in the physical world, a hybrid between student interaction in social networks and the potentiality of interactive spaces in which the user may imagine his/her capacities and experiment with skills that cannot be exploited in real environments (due to feelings such as shame, apprehension or fear, among others). It is foreseen that users interact by manipulating virtual learning objects, including avatars, using their computer, smartphone or tablet and the Internet.

In the second semester of 2017, we updated the 'Moopic' e-Learning platform with Canvas, a very visual an intuitive interface that has a series of integrated elements to ease communication between teachers and students, without leaving behind data and file management functionality and efficiency. These characteristics have had huge impact in students' performance and have improved tutor management. These new advancements, digital tools and software progress have proven useful in the presentation of information applying methodologies such as

storytelling, trans-media stories and gamification. The implementation of the platform's new version implied an update of all the virtual content that supports the modules, following the structure defined in the "Learning Scenarios" project.

Finally, the Institution is considering setting up a Laboratory of Educational Innovation, based on immersive learning (Lau, Lee, & He, 2018; Leder, Horlitz, Puschmann, Wittstock, & Schütz, 2019; Parong & Mayer, 2018), a current global trend in education with highly interactive virtual environments intended to emulate reality (Y. F. Wang, 2018), in order to confront knowledge received un students in practical environments. This endeavour includes simulators, online laboratories, serious games, augmented reality, virtual reality, 360° photography environments (Lau et al., 2018), as well as artificial intelligence.

The laboratory would follow the ADDIE methodology (Analysis, Design, Development, Implementation, Evaluation). ADDIE was created from a combination of several virtual environments and tools that facilitate design, production and devise of educational innovation projects based on ICT. The purpose of the Laboratory is to manage (alongside the Institution's faculty) the development of innovation projects focused on learning strategies, such as simulators, educational games, serious games, apps, augmented reality and virtual reality, among others.

Eduardo Norman Acevedo
Editor
Revista Panorama

References

1. Huang, Y.-C., Backman, S. J., Backman, K. F., McGuire, F. A., & Moore, D. W. (2019). An investigation of motivation and experience in virtual learning environments: a self-determination theory. *Education and Information Technologies*, *24*(1), 591–611. https://doi.org/10.1007/s10639-018-9784-5

2. Lau, K. W., Lee, P. Y., & He, M. Y. (2018). 360 degree immersive videos: a way to improve organizational learning practices. *Development and Learning in Organizations*, *32*(6), 8–11. https://doi.org/10.1108/DLO-02-2018-0029

3. Leder, J., Horlitz, T., Puschmann, P., Wittstock, V., & Schütz, A. (2019). Comparing immersive virtual reality and powerpoint as methods for delivering safety training: Impacts on risk perception, learning, and decision making. *Safety Science*, *111*, 271–286. https://doi.org/10.1016/j.ssci.2018.07.021

4. Lin, H.-H., Wang, Y.-Y., Wang, Y.-S., & Wang, Y.-M. (2018). Measuring perceived physiological vulnerability to IT usage: an initial test in a virtual reality-based learning environment. *Interactive Learning Environments*. Department of Distribution Management, National Taichung University of Science and Technology, Taichung, Taiwan: Routledge. https://doi.org/10.1080/10494820.2018.1545672

5. Mhlanga, B., & Mpofu, M. (2017). On virtuality and the aesthetics of spectacle: Nationalist imaginations of Mthwakazi and its passions of semblance. *Critical Arts*, *31*(1), 64–81. https://doi.org/10.1080/02560046.2017.1300925

6. Norman-Acevedo. (2018). *VIRTUAL EN EL POLITÉCNICO*. (Institución universitaria Politécnico Grancolombiano, Ed.) (1st ed.). Bogotá: Politécnico Grancolombiano. Recuperado de: https://comunicaciones.poligran.edu.co/boletines/rompiendo/barreras.html

7. Ouherrou, N., Elhammoumi, O., Benmarrakchi, F., & El Kafi, J. (2019). Comparative study on emotions analysis from facial expressions in children with and without learning disabilities in virtual learning environment. *Education and Information Technologies*. Department of computer science, Faculty of Science, Chouaib Doukkali University, El Jadida, Morocco: Springer New York LLC. https://doi.org/10.1007/s10639-018-09852-5

8. Parong, J., & Mayer, R. E. (2018). Learning science in immersive virtual reality. *Journal of Educational Psychology*, *110*(6), 785–797. https://doi.org/10.1037/edu0000241

9. Wang, A. (2017). Using second life in an English course: How does the technology affect participation? *International Journal of Computer-Assisted Language Learning and Teaching*, 7(1), 66–85. https://doi.org/10.4018/IJCALLT.2017010105

10. Wang, Y. F. (2018). Teacher training in 3D virtual worlds: Understanding immersive learning for teaching practices. In *Teacher Training and Professional Development: Concepts, Methodologies, Tools, and Applications* (Vol. 3, pp. 1422–1442). University of British Columbia, Canada: IGI Global. https://doi.org/10.4018/978-1-5225-5631-2.ch065

11. Yeh, Y.-L., & Lan, Y.-J. (2018). Fostering student autonomy in English learning through creations in a 3D virtual world. *Educational Technology Research and Development*, *66*(3), 693–708. https://doi.org/10.1007/s11423-017-9566-6

12. Zatarain Cabada, R., Barrón Estrada, M. L., Ríos Félix, J. M., & Alor Hernández, G. (2018). A virtual environment for learning computer coding using gamification and emotion recognition. *Interactive Learning Environments*. Tecnológico Nacional de México/I.T. Culiacán, Division of Research and Postgraduate Studies, Culiacán, Mexico: Routledge. https://doi.org/10.1080/10494820.2018.1558256