Conclusions

The results of the presented study allow for drawing the following conclusions: the students developed a favourable attitude in their role as future teachers toward the use of AR applications as a learning tool, which provided them with great immersion or increased their resources to understand and learn disciplines with a high degree of abstraction. They felt happy with the new knowledge acquired, and their motivation increased with the use of the applications. However, it is important to highlight that, due to the exploratory nature of this study, a careful interpretation of the results is advisable, especially when generalising them in other contexts. Nevertheless, the initial character of this work opens new perspectives of special interest in research in this field (expand the study to the whole teaching staff, design and create new instruments that allow for a more detailed analysis of the different attitudes and professional teaching skills, include new contexts, create more mixed interactive environments, etc. (Dünser, Walker, Horner & Bentall, 2012).

Augmented reality has allowed us to identify and analyze the effects of its use on the curricula of future teachers. Regarding this practices have on educational centers, we must refer to the results obtained in the following study, which are consistent with the objectives we set in the present research, such as: to analyze the effects of its use on educational environments, whether it modifies and facilitates the acquirement of knowledge, attention and motivation, as well as students' academic performance, and the perceptions they had after the use of this novel technology (Toledo-Morales & Sánchez-García, 2017). AR has gained prominence as a key digital resource for the transformation of education systems around the world. Especially in the last four years, our contribution has been in the work line proposed in the Horizon Report 2017, and of course in Horizon 2020 and 2030 as well.

We have stated that the ways to learn have changed, and one of the most significant implications is that future teachers must integrate new strategies and resources in their educational projects and performance. Since we are a Faculty of Education, we had the opportunity to experiment with future professionals about an educational reality of the future. The students had the chance to approach this cultural change, where the curriculum was enriched and the available resources, at that time, were given the best educational use.

Finally, we would like to highlight the idea that AR applications can be used as communication tools themselves, which opens other research lines on aspects that could be developed in current training ecosystems.

Acknowledgements

This study is part of the R&D project funded by the State Plan of Scientific and Technical Excellence Development 2013–2016 (RAFODIUM EDU2014–57446-P) (Spain). We would like to thank the director of this research project, Professor Julio Cabero-Almenara.

References

fronting an augmented reality. *Research In Learning Technology*, 20, 1–10. doi:http://dx.doi.org/10.3402/rlt.v20i0.19189


