Learning from the real and virtual worlds: Educational use of augmented reality in early childhood

Cansu Oranç, Aylin C. Küntay, 2019

In this study, Oranç and Küntay (2019) examined the potential of Augmented Reality (AR) in children's education. AR is a technology that merges the real world with virtual images. Azuma (97) defines its characteristics as superposing the real world with virtual 3D elements and real-time interaction with them.

Oranç and Küntay (2019) state that learning through AR applications has cognitive mechanisms that have yet to receive attention. The authors aimed to unveil these mechanisms by scrutinizing how realistic and non-realistic environments affect young children's learning.

First, the authors studied how non-realistic content gets more attention and reflection from children. Second, the authors discussed the pros and cons of transferring learning from screens to the physical world. Finally, the authors examined how to properly blend realistic and non-realistic content.

The authors thus concluded that learning physical elements benefits more from AR than abstract concepts, but other contents need more research to decide if AR is suitable for teaching them. Additionally, the authors suggest questions to guide designers and education researchers in deeply understanding children's perceptions of virtual worlds.

This study supports implementing serious AR games when the transfer of learning and children's conception of mixed reality is considered.

C. Oranç, A.C. Küntay (2019). Learning from the real and the virtual worlds: Education use of augmented reality in early childhood. *International Journal of Child-Computer Interaction,* 21, 104-109.

Azuma, R. (1997). A Survey of Augmented Reality. Presence: Teleoperators and Virtual Environments, 6, 355-385.