Education & Outreach Poster Session

TAR AR: RESEARCHING THE EFFECTIVENESS OF AUGMENTED REALITY ACTIVITIES FOR VISITOR LEARNING AT LA BREA TAR PITS

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Digital technologies have the potential to support informal STEM learning by fostering immersion, interactivity, and engagement with scientific material. AR in particular can overlay digital information on real-world objects and places, revealing and allowing interaction with things the public would normally not see. This is particularly valuable for historical sciences like geology, archaeology, and paleontology, where abstract concepts and unusual/restricted access settings (such as geological or fossil sites, and laboratories) spark curiosity, but also create challenges for fostering learning. However, AR as a tool is still in its nascent stages. Current applications are as likely to be "fun gimmicks" as they are to produce actual learning gains. At La Brea Tar Pits (California, USA) we are researching what makes paleontology learning AR good. We have conducted two AR learning experiences to test whether AR is better at reducing scientific misconceptions relative to traditional static museum signage and test the effectiveness of several modes of AR delivery (VR headset vs handheld, high vs low interactivity). The first experience taught participants about Pleistocene climate, flora, and fauna. We found that handheld high interactivity AR is preferred, and while no AR condition had greater learning outcomes than comparable signage, the AR experience generated greater curiosity. The second experience (currently underway) invites participants to explore how organisms become entrapped in the asphalt seeps in a life-size AR scene. In addition to both of these experiences, we have created versions of each of the extinct Pleistocene animals represented in the AR experiences that can be interacted with Snapchat, Instagram, or native AR on a user's phone, that is immediately suitable for classroom and off-site use.

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