Cloud based Applications in Engineering Drawing Education

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Abstract

Designing interactive applications to complement traditional teaching methods in engineering education has been of considerable interest. The role of interactive learning in knowledge dissemination and acquisition has been found to benefit of the cognitive skill development. Mobile technologies have grown rapidly in recent years and play a important role in our everyday lives . The universality of mobile devices opens up new opportunities for developing applications in education. These advantages of handheld devices over personal computers have been already discovered and reseach has shown that smartphones broaden the scope and effectiveness of technical education in classrooms because of ease of accessibility and portability. The interactivity and effectiveness of smartphones in classroom instruction will get even broader if cloud-based applications are used. Cloud-based mobile applications will be changing the visualization channels too. Three dimensional displays will be replacing the two dimensional monitor screens in the future as they get more and more economic and accessible. This paper describes the efforts to use 3D mobile viewers in a Engineering Drawing course to enhance the interest, engagement, and spatial cognition skills of students. In this attempt, a cloud based service has been used to deploy the 3D stereoscopic virtual models. Smartphones and Google Cardboard have been used to display the 3D stereoscopic models.

Biographies

SERDAR TUMKOR is an Assistant Professor of Mechanical Engineering Technology at University of Pittsburgh at Johnstown. Dr. Tumkor has 20 years of experience in education, having taught at Stevens Institute of Technology and Istanbul Technical University. His 25 years engineering experience includes design, manufacturing, and product development. He has been lecturing Manufacturing Processes, Machine Design, Engineering Design, and Computer Aided Technical Drawing courses.
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