ITOUYING: A SERIOUS GAME FOR LEARNING ORTHOGRAPHIC PROJECTION

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ABSTRACT

Today's student learning style is much different than before. Many researches have shown that games are a powerful tool in many educational domains, but there is no specific research discuss how to use games to strengthen orthographic projection learning. Therefore, the goal of this paper is to investigate what makes orthographic projection learning difficult in vocational education settings, and then design a game to combat these issue. The ITouYing game is composed of seven sub-units, including 1) Orthographic projection concept, 2) Orthographic projection knowledge quiz, 3) Plane type judge, 4) Stain in plane, 5) Proper view selection, 6) Three view match, and 7) Proper 3-D model selection. Results for ITouYing's effectiveness for learning were examined. They indicated that students like to use the ITouYing game, because it can enhance the student's natural' orthographic projection abilities and also is able to improve student visualization skills between 3-D model and multi-view.

Key Words: Vocational education, Orthographic projection, Serious game, Multi-view, 3-D model.