Using Augmented Reality to Bring interactivity to Metabolism Teaching

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INTRODUCTION: A glycolysis paper puzzle designed to introduce students to the principles of metabolic pathways have been used for several years, and it seems to help students to learn the topic. We noticed that both the number of instructors and the time they spend with the students, plays a major role in the success of the activity. An insufficient number of instructors do not permit adequate contact with all the students, which frustrate and discourage them. **OBJECTIVES:** In order to bring this activity to larger audiences with a few instructors, we added a technological tool called augmented reality to the paper puzzle. **MATERIALS AND METHODS:** The app was developed using Unity, and 3D molecules obtained from Protein Data Bank. **RESULTS AND DISCUSSION:** Using this app the students were able to check their achievements as they progress through the activity. The augmented reality also allowed the addition of more information to the cards like answers to frequently asked questions and information via flashcards. The virtual flashcards displayed on the tablet screens show information such as the molecular 3D structure, and clues for assembling the puzzle. **CONCLUSIONS:** The above-mentioned technological improvement has enabled its use in larger classrooms with fewer instructors since the students are able to have access to clues and discuss with the peers. Thus, the paper puzzle is still the way students interact with each other, but the technological support gives them more autonomy to solve the proposed exercises.

Keyword: Puzzle, Game, Metabolic Pathways

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