

Section 3

Chapter 13 - Assessment in Videogames and Educational Apps Based Learning In Tertiary Education

Exemplary case 3

Title: **Foldit application for chemistry experiments**

Description:

Foldit is a crowdsourcing computer game enabling players to contribute to important scientific research in a field of protein structure prediction and design. Foldit attempts to predict the structure of a protein by taking advantage of humans' puzzle-solving intuitions and having people play competitively to fold the best proteins. Since proteins are part of so many diseases, they can also be part of the cure. Players can design brand new proteins that could help prevent or treat important diseases.



Integration into learning plan

The game has 32 introductory puzzles leading students through 8 different topics and building knowledge to perform protein folding algorithms. Each puzzle builds on top of the other and

unlocks one by one. Students create their accounts in the portal and teacher can put all students into group and monitor their gameplay, as well as support through the live chat. Foldit can be integrated into classroom activity as practice on the topic explained by teacher, giving students a chance to experiment with chemical elements without access to laboratory. In more advanced students groups the game could be used as an environment for group projects when students are given open ended problem within protein application field and asked to experiment and solve the problem in a creative way. Then all the teams, can present and explain their solutions, as well as compare and discuss the approaches.

Learning assessment

Each successfully completed puzzle allocates points to the player account. Once students are gone through introductory puzzles they can participate in Science puzzles. Each Science puzzle is open for a week, then all the submitted solution are evaluated and points given based on the quality of the solution. Teacher can use the Global points structure as a rating for students solutions, or incorporate the points as addition to the school grade. Also the environment could be used as space for creating projects and final products for teacher assessment instead of having laboratory experiments or written assignments.

Access for school

Foldit is free game available for download from the webpage <https://fold.it>

