i-CHEMTORIALS

(Interactive Chemistry Tutorials)

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Abstract—For decades, the traditional teaching and learning using textbooks and Power Point point slides is very popular in universities and colleges. However, this approach is not the best teaching method, especially for subjects that require critical concepts thinking. Due to the outbreak of the COVID-19 pandemic, many schools, colleges, and other educational institutions have embraced online education platforms for lecture but the students' lacking in performing the tutorials after the online class due to not enough time and not effectively to guide the students during online lecture. Therefore i-CHEMTORIALS is an educational approach to motivate students to learn by using video tutorial design and game elements in learning environments. In this project, the development of gamification-incorporated learning is introduced in the General Chemistry course. It allows students to perform interactive activities like attending a test, answering the tutorials, working on a chemistry calculation, and more in a virtually connected classroom. A treasure hunt game was implemented using Kahoot, Prezi and Quizizz application. This approach is capable of involving students directly in immersive learning experience such as group discussion. Perceptions and feedback from the students were obtained through questionnaires and reflective assessment. It can be concluded that at the end of the project, the content development in i-CHEMTORIALS has been successfully developed to increase the students' participation and engagement in this limitless and dimensionless new norm era. However, it can be further improved by adding more features for more enjoyable game and learning experience for students.

Keywords—i-Chemtorials, gamification-incorporated learning, Kahoot, Prezi