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INVENTION AND INNOVATION EXHIBITION (I-JaMCSIIIX) 2023

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'CHICK VS VIRUS', a Game-Based Learning Approach in Teaching Students

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Abstract—Games are increasingly becoming common in learning environments, and to match the requirements of developing a course as a game, a variety of technologies have been developed. Besides education, game-based learning has been popular in other settings, including professional training and social media. By introducing gaming elements as a training method, game-based learning platforms will boost students' engagement, motivation, and productivity. Game-based learning is more than just making games for students to play on the surface; it is also about establishing learning activities that gradually teach subjects and lead users to achieve goals. This study aims to improve students' understanding of the practices that need to be done to deal with various virus attacks today by using the 'CHICK VS VIRUS' Game. This game is designed using the ADDIE Model which contains five phases namely Analysis, Design, Development, Implementation and Evaluation. The programming language used uses the Scratch Application, which is programming using blocks. The research methodology is completely quantitative (quasi-experimental) involving a total of 20 year 3 student consisting of 10 boys and 10 girls. The student were divided into two groups equally, namely the control group that received the implementation of 'CHICK VS VIRUS' and the treatment group that received normal learning. This study involves a pre-test and a post-test. The findings of the study show; (a) the initial knowledge level of all students is at a medium level; (b) there is no significant difference in the mean score of the knowledge level of the control group before and after getting normal learning; (c) there is a significant difference in the mean score of the knowledge level of the treatment group before and after getting the implementation of 'CHICK VS VIRUS'; and (d) there is a significant difference in the mean score of increasing the level of knowledge of the treatment group with the control group. Overall, the implementation of game-based learning 'CHICK VS VIRUS' can increase the level of students' knowledge in preventing the spread of viruses.

Keywords—Game-based learning, Educational Technology, Science and Technology, Health Education, Gamification



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