The Enhancement of Undergraduate Students' Scientific Explanations Using Online Platform as a Context for Discussion and Feedbacks

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ABSTRACT

Purpose – This study aimed to investigate the use of ePortfolio as context for discussion and reflection in improving students' scientific explanation after laboratory activities.

Method - This action research study aimed to solve the limitation of the undergraduate laboratory course in fundamental biology course by using available free source of mobile application to improve students' scientific explanation. The target group were 33 first-year undergraduate students enrolled in Fundamental Biology Laboratory Course which was one of the requirement courses to graduate a Bachelor of Science program, Faculty of Science and Technology. Duration of action research study was eight weeks. Quantitative data were analysed using descriptive statistics (percentage) while qualitative data were analysed by content analysis.

Findings - The results indicated that after experiencing the ePortfolio most students had developed scientific explanations at a high level which means that the students provided a causal story to explain why something happened or used unobservable/theoretical components of a model to explain an observable phenomenon.

Significance - In this online environment, the students had the opportunity to examine and present their own scientific explanations to be critiqued with value and norm developed together in class and being effectively scientific citizens in the changing society.

Keywords - Scientific explanation, Biology laboratory course, ePortfolio, Higher education, Argumentation