Development of the Malaysian Biotechnology-STEM (MBS) Module for Interdisciplinary STEM Teaching & Learning

[1]Ruhizan Mohammad Yasin, [2]Latifah Amin & [3]Kok Kean Hin
[1,3]Department of Innovation in Teaching & Learning, Faculty of Education, National University of Malaysia, Malaysia
[2]Pusat Citra, National University of Malaysia, Malaysia
[3]Corresponding author: khkok76@gmail.com

ABSTRACT

Purpose - This study developed an interdisciplinary STEM module called the 'Malaysian-Biotechnology-STEM' (MBS) based on the proposed conceptual framework. In addition, this study demonstrated an interdisciplinary approach to teach biotechnology.

Method - A two-week pilot test was conducted in Perak, Malaysia. The student questionnaire and biotechnology achievement test were administered to 12 secondary school students (16-18 years old) from a selected school that offered Additional Science. The data were analysed with descriptive statistics.

Findings - The study found that the MBS module could improve students understanding in biotechnology and help to foster their 21st century skills such as digital era literacy skill and inventive skill. The study also found that the average mean score of the student achievement improved after the intervention with MBS module.

Significance - It can be concluded that the implementation of interdisciplinary MBS module could improve student understanding in biotechnology. Thus, it could further enhance students' interest to pursue the field in higher learning institutions and produce sufficient future workforce for the biotechnology industry.

Keywords: Malaysian-Biotechnology-STEM module, Interdisciplinary STEM, Biotechnology, Additional Science, 21st Century skills