The preliminary study on inverted problem-based learning in biology among science foundation students

ABSTRACT

The emergent of Science, Technology, Engineering and Mathematics (STEM) Education in Malaysia has embarked challenges in higher education system. Conventional teaching methods often cause lower learning gain, fear and bad perceptions among sstudents. The old initiative may also be the cause of students' demotivation, lower interest in learning a subject or even dropouts. This study was conducted to evaluate the effectiveness of an inverted classroom by using the problem-based method in Biology subject among science foundation students. Students were divided into two groups; experimental (EG) and control (CG) group. A topic in Biology had been selected, and an assessment paper was given to both groups before and after the intervention session. The EG would experience self-learning through given materials and asked to conduct a problem-based learning study case. Meanwhile, the CG would obey the conventional teaching method before given a similar study case. The result reported significant improvement in assessment marks for EG group compared to the CG group. The students' comparison between the pre- and post-test implies that they have shown positive improvement in understanding the content of the subject tested. This finding will serve as a primary platform to improvise and enhance teaching and learning methodology in biology subject for foundation level.