Flipped classroom in science Education: correlating student Experience with attitudes

ABSTRACT

Despite the growing adoption of the Flipped Classroom (FC) model in higher education, there is limited exploration of its impact on secondary education and students' attitudes toward science. Thus, this study aimed to examine the correlation between secondary school students' perceptions of the Flipped Classroom experience in learning science and their attitudes towards the subject. The research focused on five perception constructs: Collaborative Environment, Self-Directed Learning, Learning Impact, Motivation and Enjoyment, and Technology Integration. Students' attitudes towards science were measured across five constructs: Importance of Science, Practical Work in Science, Learning Science in School, Science Outside School, and Future Participation in Science. The study utilized a quantitative survey methodology, collecting data from a sample of 100 Form Four students at School A, Sabah, Malaysia as of the year 2024. Through the analysis of the survey, the study found a significant positive correlation between students' positive perceptions of the FC experience and their attitudes towards science. Notably, high ratings for 'Motivation and Enjoyment' indicated enhanced student engagement, while lower ratings for 'Technology Integration' highlighted areas needing improvement. The findings underscore the potential of the FC to positively influence students' attitudes towards science. This research implies that educators should seek ways to enhance student engagement and foster a positive attitude towards science through innovative teaching methods such as Flipped Classroom.