Blending Formative Assessments with Instruction: Enhancing Learning Outcomes in a Flipped Classroom

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1 Background

Flipped learning approach has been introduced in a Probability and Statistics subject for Year 3 students in a computing degree programme.

Students are required to do pre-class preparation such as watching pre-recorded lecture videos or reading assigned materials. This preparation phase is very important in flipped learning approach (Shih, Liang & Tsai, 2019).

2 Challenge

A portion of students do not do the pre-class preparation in a timely manner. During class time, some students are well-prepared to engage in in-class activities but some are not prepared at all.

3 Objectives

↓ To bridge the gap between students' different level of preparedness during in-class sessions.

↑ To improve in-class learning experience within flipped classroom approach.
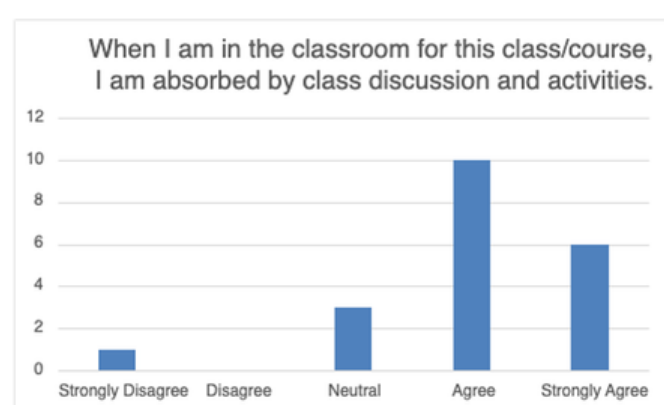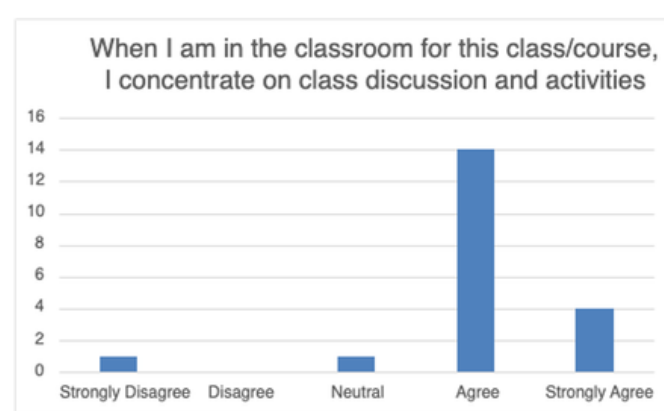
4 Strategy

During in-class sessions, active learning approach is adopted through a blended design (Bocconi and Trentin, 2014). Formative assessments are blended with instruction for:
- students who have done pre-class preparation - *revision* and formative assessment
- students who have not done pre-class preparation - *capture key concepts* and formative assessment

Delivery is implemented through Quizizz, an online assessment tool for teaching and learning.

5 Findings and Impact

Data collected from 20 voluntary respondents through a questionnaire survey.

When I am in the classroom for this class/course, I concentrate on class discussion and activities

When I am in the classroom for this class/course, I am absorbed by class discussion and activities.

"The quizzes are fun and very engaging. It makes me feel more attentive in class and allows me to be fully immersed in the subject."

"It encourages the class to participate more which is effective. Good implementation."

"I enjoy the quizzes a lot."

"Good method to evaluate students knowledge and understanding about the topic."

"It helps to reinforce the knowledge taught throughout the course."

6 Recommendations

⊕ Integration of other active learning activities within the blended lesson design, such as peer feedback and exit ticket.

References
Bocconi, S., & Trentin, G. (2014). Modelling blended solutions for higher education: teaching, learning, and assessment in the network and mobile technology era. Educational Research and Evaluation, 20(7-8), 516-535.[2]
Shih, M., Liang, J. C., & Tsai, C. C. (2019). Exploring the role of university students' online self-regulated learning in the flipped classroom: a structural equation model. Interactive Learning Environments, 27(8), 1192-1206.