



The Effectiveness of Cooperative Learning in the Class of Inferential Statistics

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ABSTRACT

The challenge in teaching statistics encompasses student motivation, mathematical anxiety, and student understanding. It needs an approach of education that encourages curiosity and leads to the engagement and comprehension of students. Cooperative learning is one of the teaching approaches that can be defined as learning with small groups of friends and implementing what they have learned in a lecture to achieve the same objective. Employing cooperative learning in the class of inferential statistics and assessing the efficacy of this approach is the aim of this study. The efficiency of the approach is determined based on the student's perception, the lecture's observation, and the student's performance. The results showed that students more prefer to learn in a group during the course. While, based on the lecture's observation, letting students sit in a group engages students positively during their lessons. After the implementation of cooperative learning, the student performance also exhibited improvement. Hence, it is tolerable to conclude that cooperative learning is efficient in increasing student engagement and performance.

INTRODUCTION

In the environment of higher education, teaching is the most important determinant of student learning. The teachers in the higher education institution face various challenges to transform pedagogical practices from teacher-centered to student-centered approach (Reeves et al., 2021). Handling a lecture cannot be one-way communication anymore as what the classical teaching method practices. Students can be distracted by numerous attractions during the lecture session. Hence, the lecturer's involvement in fostering the enthusiasm of learning inside the classroom is critical in ensuring that students can acquire knowledge effectively (Davies and Sheldon, 2021).

Mathematics and statistics are vitally used in most fields of study in higher education institutions (Davies & Sheldon, 2021). For instance, in the school of quantitative sciences, inferential statistics is one of the core programs subjects where all students are compulsory to pass it regardless of their field of the program (either mathematic, statistics, or decision sciences). The knowledge of estimation and statistical hypothesis testing in this course needs to understand the concept of probability to make inferences of a population-based on a sample. Students are generally hard to understand the concept in inferential statistics, which leads to the failure to interpret the result to the real-world application.

The challenges in conducting an inferential statistics course started with the student's perception and motivation (Wilson, 2013). Students commonly feel anxiety when they cannot get to understand what they have learned. It will be directed to the negative perception towards the whole topic in the course and might decrease motivation (Bjälkebring, 2019). According to Nóbrega and da Rocha Falcão (2019), it is

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