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FlippedDB: Applying a Flipped Classroom Approach in a Basic Database Course

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ABSTRACT

Long input phases in face-to-face courses can be very tiring. Activating methods can help, but they are time-consuming, and students must still engage for the full 90 minutes to absorb the material. These problems can be addressed by using a flipped classroom. Important information is taught using suitable self-study materials, allowing students to divide up the input phases independently. Attendance sessions focus on exercises related to the self-study content. As a result, only short input phases are necessary in attendance and students can participate much more actively in the course. This teaching concept was implemented as part of a basic database course. The self-study phases included learning videos and self-assessment tests. Exercises were conducted during the attendance sessions, with lectures covering advanced concepts and practical sessions focusing on application. A student evaluation was conducted at the end of the semester. Among the 17 students, most responded positively, while two were dissatisfied because they personally disliked the method. In addition, the examination results of the last courses were evaluated. The previous year's course did not use a flipped classroom, while this semester's course did. The comparison showed that the proportion of students who failed the module had fallen, while the proportion of students who achieved the top grade had risen. In summary, most of the students found the method supportive, which was also reflected in the exam results. These findings suggest that a flipped classroom approach can enhance learning outcomes in basic database courses.

Keywords: Asynchronous learning, Blended Learning, Constructive Alignment, Higher education, Learning Outcomes