

Teaching and Learning

Research: Flipped Learning Boosts Test Scores

By Dian Schaffhauser | 11/20/19

The latest word on the use of "pre-class activities" — flipped learning — is that it improves student engagement in the class itself as well as students' assessment scores. A recent study by a team of researchers from [Macmillan Learning](#) and the [University of Connecticut](#) examined the use of flipped learning through [Achieve](#), a new Macmillan digital learning tool, and found a "significant effect" with its use.



Achieve is a set of course tools designed with learning science in mind that allows the instructor to give personalized recommendations to students for "optimal learning paths." The pre-class activities are one of the resources included in the product that faculty can choose to implement with their classes.

The study involved 40 instructors at 38 institutions in multiple disciplines who all used Achieve in their classrooms but who could choose to use the pre-class activities or not. All were given a half-hour of training on the use of the program. A total of 2,251 students agreed to participate in the study and, based on which course they took, "naturally" fell into the test group ("pre-class users") or the control group ("non-pre-class users"). In total, 1,372 students participated in the pre-class activities and 879 didn't.

As documented in "[The Flipped Effect](#)," a paper presented at the [American Evaluation Association Evaluation](#) conference last week, the researchers wanted to answer two big questions (among several smaller ones):

- Whether the summative assessment scores improved for those students in the Achieve group; and
- What impact the use of Achieve might have had on final exam scores, no matter what the student's previous academic performance, baseline level of motivation or who the instructor was.

The pre-class activities could typically include the use of five- to seven-minute videos describing the course content with quizzes or assigned reading with quizzes or both. The goals: to help students gain an understanding of vocabulary and core concepts and to support their longer-term learning "through retrieval practice," as the researchers explained.

To generate the data used in the final analysis, the researchers ran student and instructor surveys at the beginning and end of the semester. Faculty also filled out weekly Achieve "implementation logs"; and they were interviewed mid-semester. The researchers extracted data from Achieve itself on a weekly basis and at the end of the study, and instructors shared student records at the end of the semester.

The big question — whether testing improved for those students using the pre-course learning activities — came in affirmative. As the report stated, "assigning pre-class activities ... significantly supports better performance on summative assessments within Achieve." And, likewise, "assigning pre-class activities in Achieve supports better performance on final exams in their course." In fact, the researchers suggested, "the average difference in assessment scores would represent more than half of a grade in most higher educational institutions."

The details are in the report, which is openly available [on the Macmillan website](#).

ABOUT THE AUTHOR

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