macmillan learning

Educator Study with iClicker 2018-01

COURSE:	Introduction to Psychology, delivered face-to-face to 329 students
PRODUCT USED:	iClicker Cloud
STUDY DESIGN:	Mixed methods with descriptive and correlational analyses

How iClicker Cloud supports student academic achievement in a large Introduction to Psychology classroom

Institutional and Course Context

The University of Central Florida is a large four-year public university on a semester system with programs offered at one main campus in Orlando and nine regional campuses. The institution serves over 55,000 undergraduate students. This Introduction to Psychology course was taught face-to-face to 329 students. Students met once a week and were expected to keep up with their reading and assignments throughout the week. The instructor has been teaching for 10 years and has been teaching in this specific department for six years. The instructor has used digital learning tools in the past and has been somewhat comfortable implementing them.

Instructor Implementation

The instructor used iClicker to track student participation. Students were required to answer at least 75% of the questions to receive a one-point participation score. They received the participation point regardless of whether they answered the question correctly. Participation credit contributed to 5% of the students' overall course grade. The instructor presented iClicker questions to students in 93% (14 out of 15) of the classes with a total of 248 questions asked over the course of the semester. In addition, the instructor used iClicker to prepare for exams. During the class prior to the exam, the instructor awarded bonus points to students who answered review questions correctly. Eighty-five percent of the iClicker questions were multiple-choice, 8% were short answer, and 7% were target items.

Course Goals and Challenges

The instructor began teaching large Introduction to Psychology courses the previous semester and chose to incorporate iClicker Cloud into lessons to increase communication with students. The instructor chose the cloud version of iClicker because it offers more item types than multiple-choice. The instructor also liked that both the course textbook and iClicker were published by Macmillan Learning. iClicker allowed the instructor to give students credit for responses regardless of whether the response was correct.

"Students' favorite feature of iClicker is being able to actively participate in class lectures when the class is very large." —Instructor

Study Design

The study examined whether use of iClicker Cloud was related to student outcomes, including learning, course completion, engagement, and satisfaction. In addition, information on instructor and student perceptions of iClicker Cloud was gathered. iClicker Cloud usage was documented through platform data along with midsemester observations of

classroom implementation and instructor interviews. Student learning data were collected at the end of the semester via course records shared by the instructor. End-of-semester surveys were used to gather data on instructor and student perceptions of the product along with student engagement. Data were matched across sources, and descriptive and correlational analyses were conducted.

Results

There was a significant positive relationship (.557) between the amount of iClicker questions students answered and their performance in the course. Students who answered more iClicker questions tended to have a higher overall course grade. Conversely, students who answered less questions tended to have lower course performance. There was also a significant positive relationship (.579) between the mean number of iClicker questions answered per class and student course performance.

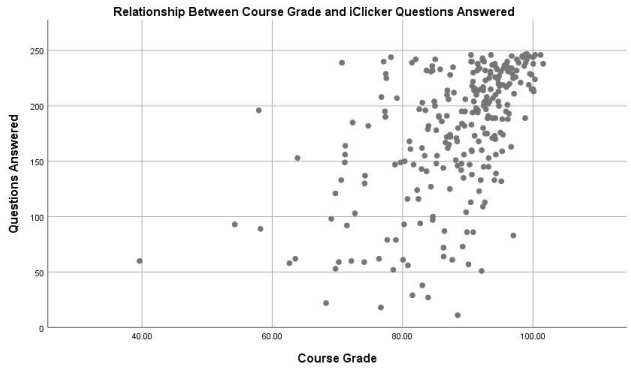
Eighty-one percent of students reported that they were more engaged in class material because they used iClicker Cloud. Students rated their overall engagement levels as higher than average. Students reported that use of iClicker helped keep their attention focused on lectures, that some questions allowed them to interact with the instructor and/or their classmates, and that they enjoyed being able to see if their iClicker responses were correct. The instructor also reported that use of iClicker increased student engagement in the class.

"Using the [iClicker Cloud] polling app allowed me to have students interact with the course material, answer questions in class so I could determine if they were learning the material, and . . . keep the class engaged." —Instructor

Both the instructor and students felt that iClicker Cloud increased student participation in class. Ninety percent of students said they were more likely to participate in a class that uses iClicker Cloud than a class where they have to raise their hand to participate. The instructor also said that use of iClicker increased student participation in the class. The instructor felt that students' favorite aspect of iClicker was that it allowed them to actively participate in class lectures even when a large amount of students attended the course.

Both the instructor and students reported that iClicker Cloud was easy to use and that it increased the students' understanding of the subject matter. At the end of the semester, students took the System Usability scale which provides an indicator of product ease of use. Students rated iClicker Cloud at 75 points on a scale of 1–100. A score over 68 indicates the product was easier than average to use.

Seventy-one percent of students also said that use of iClicker helped them better understand the subject matter than a traditional lecture format. The instructor also reported that iClicker was easy to use and that the various features integrated well with the class—the instructor was comfortable integrating the learning tool in the classroom.



Insights for Optimization

The instructor has provided insightful feedback on how helpful it would be if iClicker Cloud integrated more easily with the university's current learning management system. The instructor has also said that student choice of username—for example, using a personal email address instead of a university email address—could create challenges when synchronizing student responses to the course roster. The product team is investigating adding prompts to the student registration process that will remind students to use university email addresses when registering accounts. Students have reported that they did not enjoy having iClicker Cloud track their attendance and that they want to see the correct response for every question presented to them. The results of this study have generated recommendations for instructor use which include sharing the correct answers to questions with students.

Insights for Instructors

One of the most critical findings from this educator study is the strong positive relationship between the amount of iClicker questions answered and student course performance. As students participate more in the lecture by answering the instructor's iClicker questions—regardless of whether their responses are correct—student course performance tends to increase. Students also believe that use of iClicker Cloud increases their active participation in the lessons. Therefore, instructors in similar educational contexts might consider increasing the number of iClicker questions they ask in class to increase overall student performance.

Note: These results are part of a larger iClicker Cloud implementation study across multiple institutions. To access the full report and results, please visit http://www.macmillanlearning.com/catalog/page/learningscience