

## ABSTRACT

This study examines the effectiveness of adaptive learning courseware in student learning in undergraduate, high-enrollment, general education courses at the University of Mississippi. This research is part of an ongoing 2-year study, with the first semester (Fall 2017) findings being reported herein. Administrators of the University of Mississippi Personalized Learning and Adaptive Teaching Opportunities (PLATO) office developed a protocol for gathering student feedback about the effectiveness of courseware in their learning. Following an initial class observation, the PLATO program manager and student research assistant conducted small student focus groups and surveyed all students in classes that have adopted the courseware. The four focus groups conducted in October 2017 included Introduction to Chemistry, Inquiry into Human Life, Anatomy and Physiology, and Trigonometry.

## BACKGROUND

BILL & MELINDA  
GATES foundation

The Bill and Melinda Gates Foundation provided funds for 8 universities in the Association of Public Land Grant Universities consortium to pilot adaptive courseware in general education courses. PLATO is the UM administrator of this grant. PLATO faculty fellows began designing and implementing adaptive courseware in 2017. Over 70 faculty members from 11 disciplines are supported by the grant program.

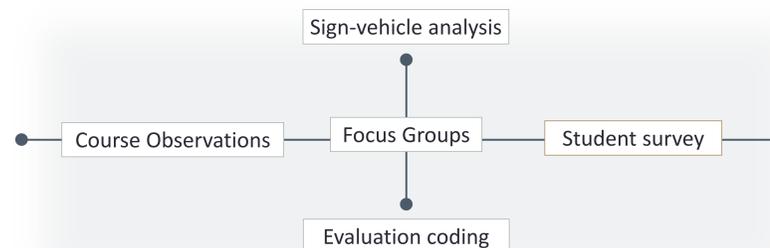
### Courses using adaptive courseware

|          |          |          |          |
|----------|----------|----------|----------|
| Bisc 102 | Chem 105 | EDHE 101 | Phys 214 |
| Bisc 104 | Chem 106 | Math 115 | Soc 101  |
| Bisc 206 | Chem 221 | Math 121 | Span 111 |
| Bisc 207 | Chem 222 | Math 123 | Span 211 |
| Bisc 330 | Econ 202 | Phys 212 | Writ 100 |
| Chem 101 | Econ 302 | Phys 213 | Writ 101 |

## OBJECTIVES

- To determine if students perceive adaptive courseware as helpful in learning
- To understand what aspects of adaptive courseware students perceive as helpful
- To understand which level of courseware integration most benefits student learning
- To learn which features of the courseware provide the most benefit for Pell-eligible, minority, and first generation students

## METHODS



## FOCUS GROUP KEY POINTS & QUOTES



The high cost of access codes. The average one-semester code is \$151.00.



Students do not know how much their performance in the courseware counts toward their final grade.



Bundling course materials forces students to purchase books they do not want or use.



Courseware content does not always align with other course content.



Courseware does not prepare them for exams.



Students prefer courseware customized to their particular class and wish instructors were better trained to use it.

*"I find that the repetition really does help and find that when I get to class, I will remember what I got wrong multiple times."*

*"It is like taking two classes: one is the book and the homework and one is the lectures and the test."*



## BENEFITS FOR UNDERSERVED STUDENTS

### Minority students

- Benefit from multiple ways of learning/multi-modal delivery of course content
- Find their grade is better due to use of the courseware

### Pell-eligible students

- Find the progress tool a useful feature of the courseware

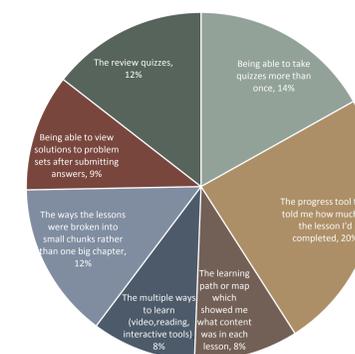
### First generation students

- Find the progress tool and being able to view solutions to problem sets useful features of the courseware

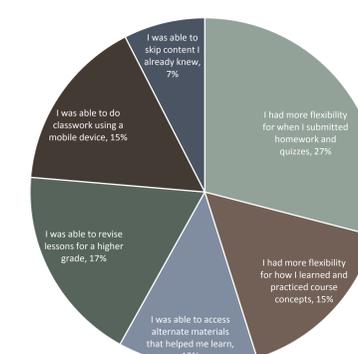
## SURVEY DATA

1 end-of-semester survey: 4300 invitations, 851 responses, 734 complete responses

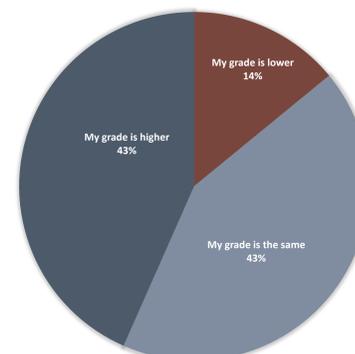
### WHAT WERE THE MOST USEFUL FEATURES OF THE COURSEWARE?



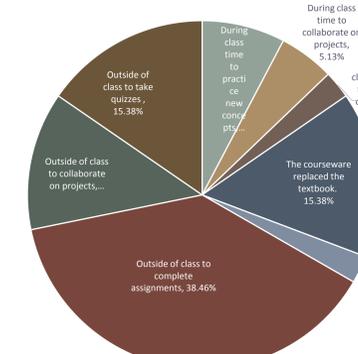
### HOW DID THE COURSEWARE CHANGE THE WAY YOU LEARNED?



### HOW DID THE COURSEWARE AFFECT YOUR GRADE?



### HOW DID THE INSTRUCTOR INTEGRATE THE COURSEWARE INTO THE COURSE?



| Cost of Courseware          | Percentage | Count |
|-----------------------------|------------|-------|
| More than \$150.00          | 9%         | 57    |
| Between \$100.00 - \$150.00 | 29%        | 214   |
| Between \$75.00 - \$100.00  | 22%        | 136   |
| Between \$50.00 - \$75.00   | 20%        | 126   |
| Under \$50.00               | 13%        | 84    |
| It was free                 | 2%         | 10    |

## CONCLUSIONS

- Students are more satisfied with courses in which the instructor integrates courseware into the course rather than using it as a supplement or homework system.
- Students are concerned about the high cost of access codes and find the bookstore practice of bundling a physical textbook with the access code unfair.
- Underserved students find several features of the courseware to be beneficial.
- Students value flexibility within the courseware.