

Increasing Student Learning and Engagement with MindTap[®] for Economics

ABOUT THE STUDY



MindTap is a personalized teaching experience with relevant assignments that guide students to analyze, apply, and improve thinking, allowing instructors to measure skills and outcomes with ease. By allowing instructors to control what students see and when they see it, instructors can match a syllabus exactly. By hiding, rearranging, or adding your own content a unique learning path is created with relevant readings, multimedia, and activities that help move students up the learning taxonomy from basic knowledge and comprehension to analysis and application.

In the fall of 2013, MarketingWorks and SEG Measurement, two independent research organizations, conducted a semester-long study of MindTap to evaluate its effectiveness in microeconomics courses using an array of qualitative and quantitative methods. Student learning in microeconomics classes using the MindTap application (treatment group) was compared to student learning in comparable microeconomics classes not using MindTap (control group), with both groups using the same Cengage Learning microeconomics textbooks. A pretest of college-level math, logic, and reading knowledge and skills along with a sampling of microeconomics knowledge and skills taught in the course was administered as a basis for establishing initial ability levels of the groups. A posttest of microeconomics knowledge and skills taught in the course was administered to compare the amount of learning growth between MindTap users and non-users. In addition, end-of-course grades were compared to evaluate differences between the MindTap users and non-users.

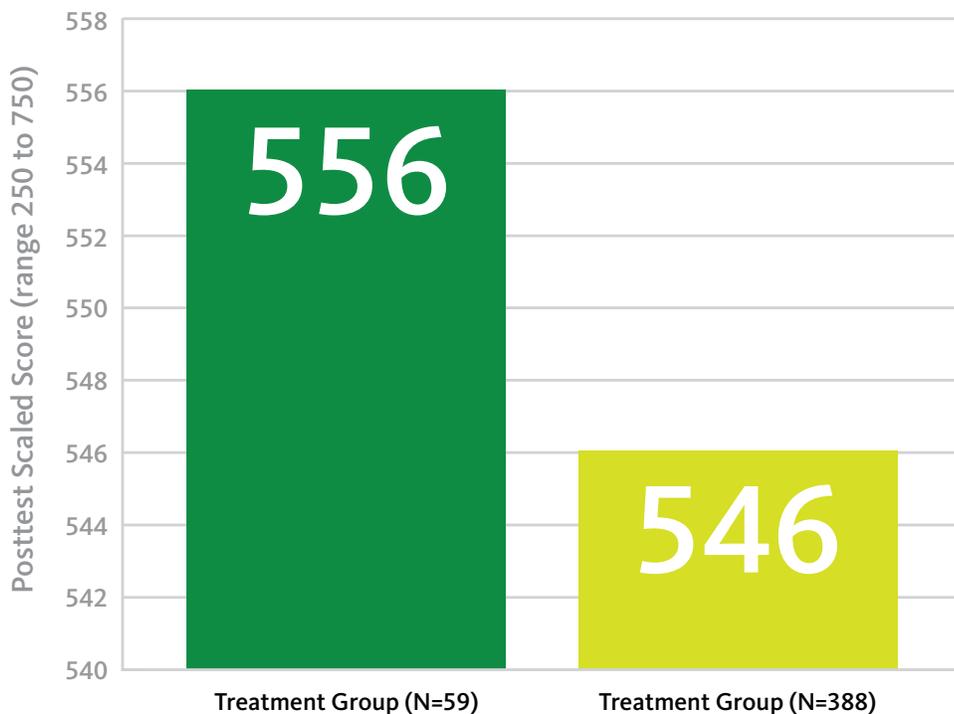
MindTap Increases Student Learning

Student growth in microeconomics knowledge and skills was measured by the scores on the microeconomics posttest, adjusted for initial student ability differences on the pretest. The growth in microeconomics knowledge and skills for the treatment and control groups was compared using analysis of covariance (ANCOVA). This approach, widely recognized as an effective way to control for differences, provides an accurate way to compare posttest results while controlling for any potential differences in initial student skill levels between the two study groups that may have been present at the beginning of the study.

The students in classes using MindTap achieved higher microeconomics posttest scores (Mean=556) than students in classes using the same textbooks but without MindTap (Mean=546). The effect size for this difference is .29, indicating that students in the treatment group using MindTap performed over a quarter of a standard deviation better (29%) than students in the control group not using MindTap. This level of growth is consistent with a student moving from the 50th to the 61st percentile. MindTap was shown to be equally effective for males and females and for students of different ethnicities.

Figure 1

MindTap Users Achieve Higher Microeconomics Test Scores than Non-Users



“MindTap helps me get more engaged. It’s a progression that shows and keeps me engaged for longer. It’s all in one place, it’s efficient, and materials are focused and easy to use.”

Matthew
Student, Southern Methodist University

“MindTap is extremely useful for preparing for exams. It’s extremely helpful in learning, so much better than just reading. I think it’s invaluable. Because the homework is more computation heavy, it’s forcing you to do things you don’t have to do in class. If I weren’t doing that, it wouldn’t stick in my head.”

Diane
Student, Cuesta College

“I like MindTap because everything’s in one place.”

Nickolas
Student, Cuesta College

Instructors and Students Agree that MindTap Can Help to Increase Learning

Both instructors in the treatment group said they thought MindTap was improving students' performance and was helping students understand course concepts and achieve higher levels of learning. They also felt that the teaching of higher order thinking skills was very or extremely important to them and that MindTap was helpful in that regard.

Almost two-thirds of the students - 64% - felt that the use of MindTap helped them go beyond memorization and recall to higher levels of learning, such as how to deal with problems that require applying what is learned to real-world situations. In addition, 78% agreed that using MindTap provided a new way to learn the material, and two-thirds said that the feedback and explanations provided in MindTap helped them learn the course material.

"With MindTap, you're not just memorizing facts. You have to think how it's going to be used and apply it to other things. I probably wouldn't know graphing and math as well if I didn't use MindTap."

Caitlyn

Student, Southern Methodist University

"Being able to see what I did wrong or what concept I didn't fully grasp was helpful, but knowing why I got it wrong and having the chance to correct my answers helped me learn the material."

Graciela

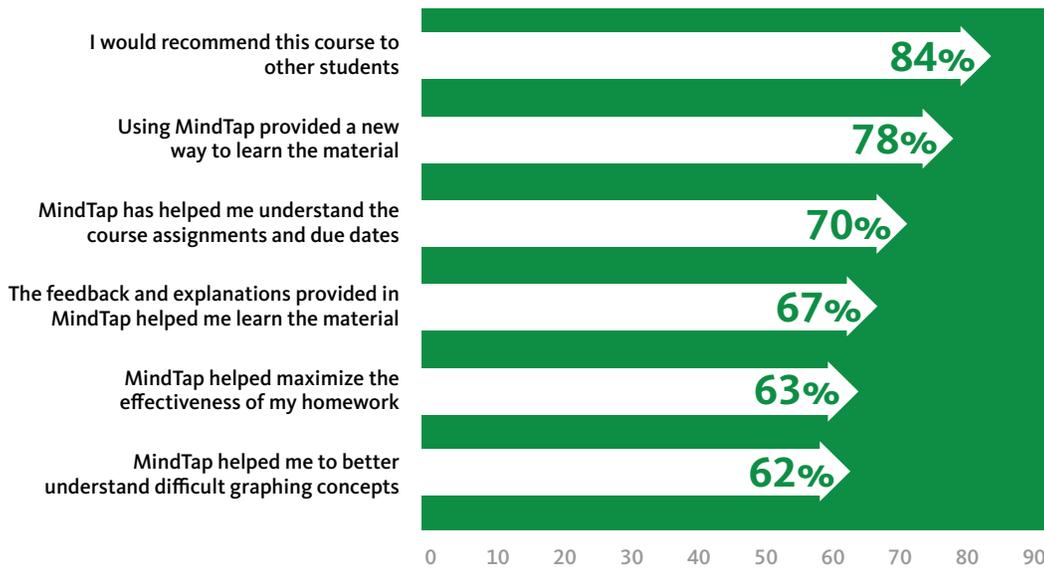
Student, Southern Methodist University

MindTap Appeals to Students

Overall, students found MindTap to be a valuable resource. A majority of the students saw MindTap as helping them succeed in the course across a number of learning activities and course requirements.

Figure 2

Students Find MindTap to be a Valuable Resource



“The homework forces the student to work through the problems and actually THINK about how the material and the subject matter work. The homework is much more difficult than the exams and this is a very good thing. The homework is excellent. It thoroughly prepared us for the exams. I think it’s invaluable.”

Diane
Student, Cuesta College

“One of the best parts about MindTap is seeing how engaged students were with reading, homework, etc. This is a great tool for helping students discover what they need to do to improve their understanding in the class.”

Instructor

“My favorite part is the feedback/ explanations on the homework. The whole point is for me to learn and I can only do that if I’m given feedback and the opportunity to correct my mistakes and try again. Other programs only told me if I got the problem right or wrong and I didn’t learn anything, so this feature has been great.”

Rachel
Student, Cuesta College

“Progress reports are my favorite part of MindTap. It’s a great way to access each student’s progress in the course.”

Instructor

Conclusion

The results of both the qualitative and quantitative study suggest that MindTap is an effective tool for improving student learning. Most students found the coursework to be highly engaging, agreeing that they were more engaged because of their use of MindTap. In addition, both instructors felt that MindTap was either very or extremely helpful in reducing time grading assignments. And both agreed that MindTap helped them track their students’ progress more easily and that its content worked very well with their textbook in the course.

In summary, students in classes using MindTap substantially increased their content knowledge and skills over the course of a semester, and students and instructors alike reported positive perceptions of the MindTap product.





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A paper based on the study presented here has been peer-reviewed and accepted for presentation at the AACE E-Learn 2014 World Conference on E-Learning, October 2014 in New Orleans.

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