

## **ADAPTIVE LEARNING: A CASE STUDY IN STUDENT PERFORMANCE USING THE LEARNSMART™ ADAPTIVE STUDY TOOL**

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### Embracing Technology to Achieve Results

Instructors and students in higher education institutions across the United States face a number of instructional and learning challenges as many students arrive on campus without the skills and knowledge to succeed and stay in school. In fact, 25 percent of college freshmen in the U.S. drop out before the end of their first semester. In addition, full-time students are now reported to spend an average of only 14-15 hours studying per week, down from 24 hours in 1971. However, the good news is that new adaptive technology offers smart study tools that engage and assist students in their learning outside of the classroom while supporting instructors' teaching goals.

Adaptive learning tools – like McGraw-Hill's LearnSmart™, now used by thousands of students across the country – are being implemented to increase teaching effectiveness and learning efficiency. These tools improve student engagement, grades, and retention, thereby enabling students to be more successful in their college experience and ultimately more career-ready.

### What is LearnSmart?

LearnSmart is an interactive study tool that adaptively assesses students' skill and knowledge levels to track which topics students have mastered and which require further instruction and practice. Based upon student progress, it then adjusts the learning content based on their knowledge strengths and weaknesses, as well as their confidence level around that knowledge.

LearnSmart's adaptive technology also understands and accounts for memory degradation. It identifies the concepts that students are most likely to forget over the course of the semester—by considering those that they had been weakest on or least confident with—and encourages periodic review by the student to ensure that concepts are truly learned and retained. In this way, it goes beyond systems that simply help students study for a test or exam, and helps students with true concept retention and learning.

Dynamically generated reports document progress and areas for additional reinforcement, offering students real-time feedback on their content mastery. By monitoring student progress, educators have the ability to instantly evaluate the level of understanding and mastery for an entire class or an individual student at any given time.

#### How LearnSmart Benefits Instructors: More effective teaching

LearnSmart guides students – at their own pace and on their own time – through the basic knowledge and skills covered in a course, so that they come to each class with a solid foundation of concepts that will be covered. Professor Lois Olson from San Diego State University lectured on marketing concepts in class, but she knew that her students needed additional practice on their own to fully understand the concepts. She had been designing assignments in a course management system, but they were taking a good deal of her time to write and grade. In addition, she spent a significant amount of time troubleshooting technical problems for her students. She needed a way to continue to provide quality assignments, but in a less time-consuming way. LearnSmart and other features in McGraw-Hill Connect® provide her the quality assignments she was looking for.

Professors who require LearnSmart in their classes tend to see significant improvements in student pass and retention rates, as well as performance in the course, as compared with students from prior terms without LearnSmart or more traditional static review assignments, such as from the textbook test bank. Based on final grade averages in Lois Olson's classes,

students who used *Connect Marketing* in the Spring 2010 term scored as many as 5 points higher on final grade averages than students in previous classes who did not use the program. In a subsequent course, taught fully online in Summer 2010, 60 of Professor Olson's students using *Connect Marketing* scored as many as 6-7 points higher on final grade averages than students in previous online courses who did not use the program. "The grades were substantially better," Olson observes, "and the recorded lectures were the same as in the two previous summers."

LearnSmart's dynamically generated reports give educators the ability to understand the strengths and weaknesses of individual students. This information can prove invaluable in helping educators identify the students that may otherwise fall behind in a course before it is too late, providing instructors the information needed to offer timely assistance to help ensure the student stays in the course.

#### How LearnSmart Benefits Students

Students also benefit greatly from LearnSmart. Using LearnSmart to study has proven to lead to improved learning efficiency, greater engagement, and better career readiness.

With its ability to pinpoint a student's knowledge gaps and direct the student to the exact section of the eBook or textbook content for reinforcement, LearnSmart personalizes the study environment based on student needs. Students appreciate LearnSmart's ability to focus their attention on the areas where they need to spend the most time, resulting in more efficient study time for today's student and increased readiness for lecture and exams.

As students work through each module, LearnSmart assesses how confident they are about their answers. Metacognitive reports generated by LearnSmart show students how comfortable they are with what they've learned, so even if they have shown mastery but are not confident about it, LearnSmart will provide them continued practice until they've reached full confidence in their content mastery.

When students complete LearnSmart modules before class, they are knowledgeable about core course content and, as a result, are more engaged in classroom discussion and participation. Students are asking higher-level questions, spiking greater interaction with, and interest in the subject matter, while instructors are able to spend valuable class time covering more advanced topics in higher levels of the cognitive domain.

Many students also find LearnSmart fun, “playing” against fellow students and comparing who knows the most. This friendly competition and way of learning makes studying feel like anything but the stereotype of cramming.

Reaching higher levels of the cognitive domain and covering more advanced topics leads not only to more knowledge, but a better assimilation of that knowledge. This means that students are better prepared for their careers than students who do not use LearnSmart. Students don’t just go through the motions to get the required credits to graduate. They integrate the course materials better, at a much higher level of comprehension, and with higher retention of knowledge. In sum, they are better prepared for the professional world.

Professor Olson’s students have responded favorably to LearnSmart and have seen the benefit from more productive studying and better scores on exams. Two of her students produced video content highlighting how LearnSmart has helped them in their coursework.

## Conclusion

Professor Olson has been assigning *Connect Marketing* with LearnSmart in her Principles of Marketing course. Based on the ease of providing quality assignments and other content review, as well as the increase in student academic performance, she recommends *Connect Marketing* with LearnSmart to her colleagues teaching Principles of Marketing and Integrated Marketing Communications at SDSU. “*Connect* has made my life easier,” Professor Olson says, “and my students are doing better.”