

The Impact of Connect on Student Success

McGraw-Hill Connect[®] Effectiveness Study



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Introduction

According to the *National Center for Education Statistics*, as many as 29% of first-year, full-time students do not reenroll for their second year¹ of college, and according to the *Organization for Economic Co-operation and Development*, only 46 percent of Americans who enter college ultimately graduate with a college diploma.²

As a learning science company, we recognize how important it is that this problem be addressed. Education providers need to feel confident that the digital technologies they select will deliver the desired outcomes to ensure a successful experience for educators and learners. For this reason, we measure the effectiveness of *Connect* according to its impact on a select set of outcomes:

- ▶ Student Retention
- ▶ Pass Rates
- ▶ Exam Scores
- ▶ Final Course Grades
- ▶ Instructor Time Management

We've partnered with dozens of faculty members across disciplines at a diverse set of institutions to develop case studies that demonstrate *Connect's* effectiveness on these measures. We aggregated and analyzed data from 20 different case studies that include student usage of the *SmartBook*[®] technology published between 2014 and 2015 for the *Connect Effectiveness Study 2016*, which features a summary of key findings and anecdotes. In addition, participants have provided qualitative feedback indicating a noticeable improvement in student preparedness and in-class engagement when using *Connect*.

Below is an overview of our most recent findings on the impact of using *Connect* featuring data from 2014 and 2015 case studies (see Figures 1, 2, and 3).

Connect's Impact on Retention Rates, Pass Rates, and Average Exam Scores

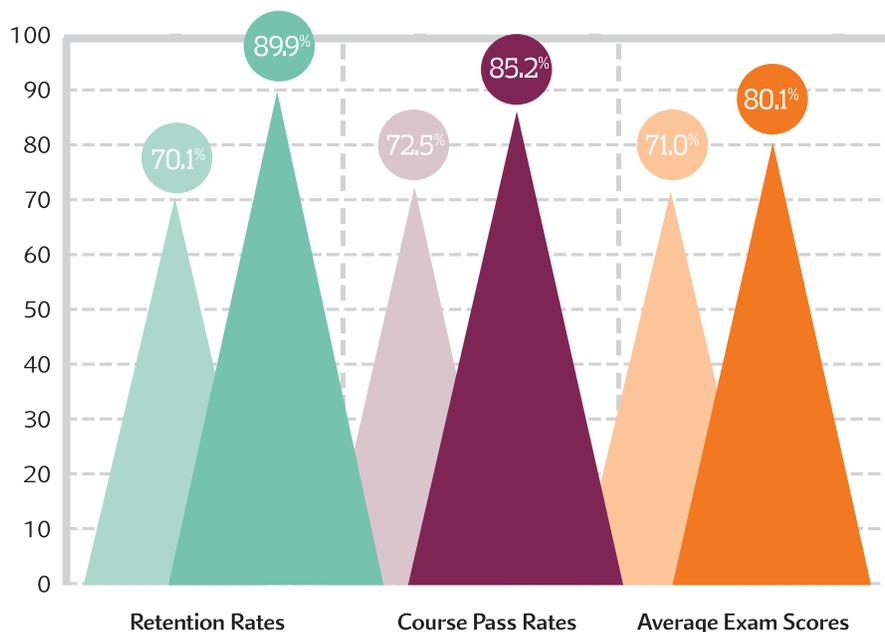


Figure 1

without Connect with Connect

¹ NCES Digest for Education Statistics 2012-2013; Table 326.30

² Jordan Weissmann: *Why Do So Many Americans Drop Out of College?*; 2012

Impact of Connect on Final Course Grade Distribution

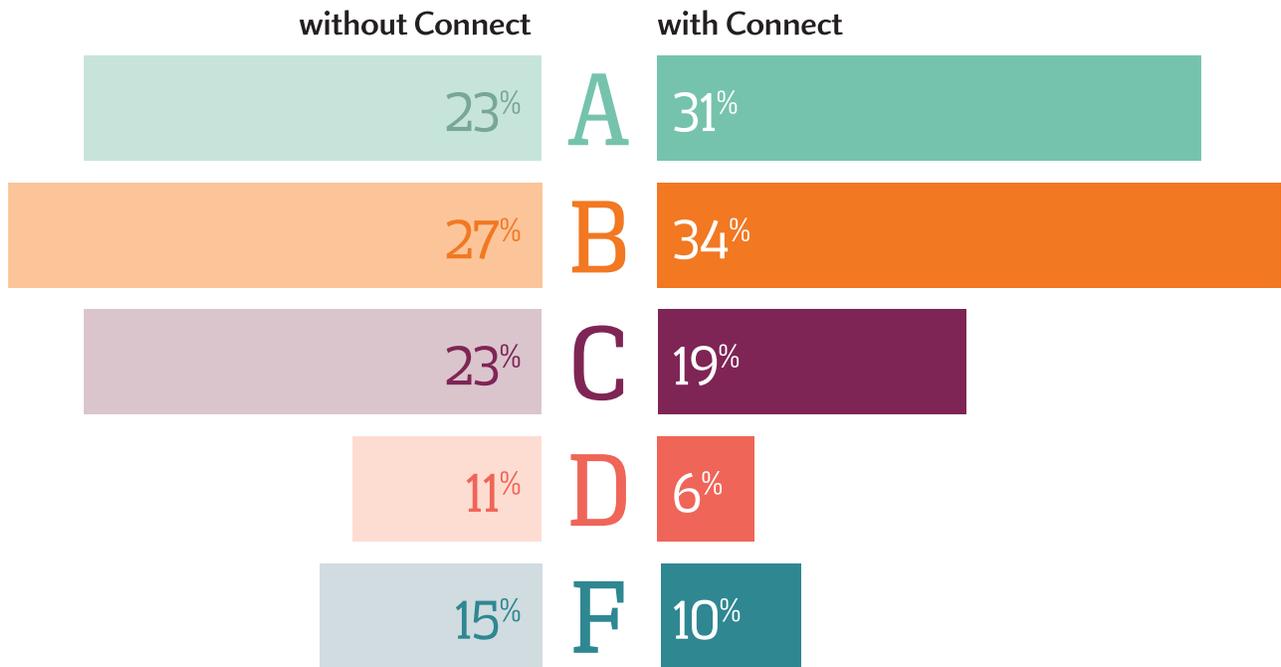


Figure 2

Impact of Connect on Instructor Time Management

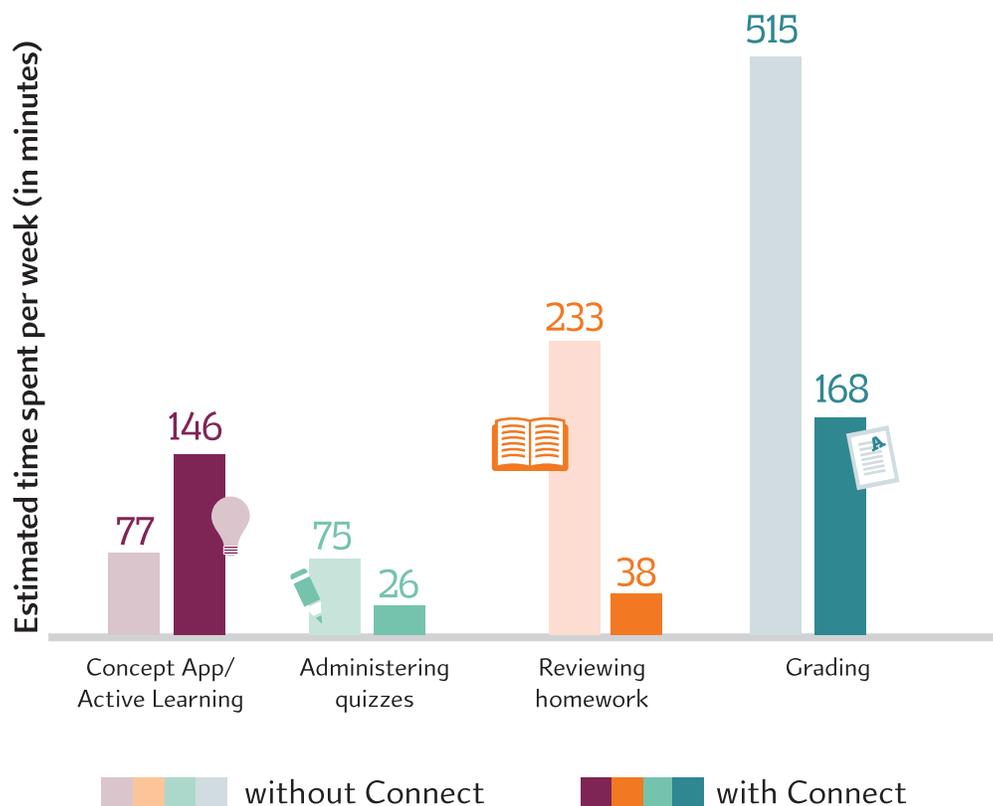


Figure 3

A McGraw-Hill Connect® Overview

Connect is a digital learning environment that integrates assignments, grading, and course content, making the entire course experience seamless while delivering better outcomes for students and educators. Connect features the continually adaptive reading experience SmartBook, integrated learning resources, robust reporting, a visual analytics dashboard, and anywhere/anytime mobile access that empower educators and students with a more engaging and effective learning experience. Connect is available in more than 90 disciplines across qualitative and quantitative course areas.

SmartBook's adaptive learning experience makes study time more productive and efficient. It identifies and closes knowledge gaps by providing personalized learning resources at the moment of need. The goal is to have every minute a student spends with SmartBook be the most value-added minute possible.

Since 2009, students have answered more than 5 billion questions using the adaptive technology engine LearnSmart®, which powers SmartBook. From each of these billions of interactions, SmartBook's technology becomes even more intelligent, and more effective at pinpointing knowledge gaps in order to adapt to a student's individual learning needs.

“Connect was a great tool for me. It was easy-to-use and adaptable to my specific needs as a student. The course material became far more interesting and understandable when I began using Connect.”

– Anna, student at Northwestern University

“Using Connect with its adaptive learning capacity provides a good opportunity to deliver a course more tailored to a student's individual needs. With the built-in SmartBook, it allows a student to effectively allocate the necessary time to master the content.”

– Dr. Gary Buckley, professor of Chemistry, Cameron University

Connect's Impact on Student Retention

After implementing Connect, aggregated case study data indicates a 20-point improvement in student retention, from 70.1% to 89.9%.

Student retention measures the percentage of students who complete the class compared to the number who enrolled at the beginning of the term. In 2014 and 2015, case studies with instructors from 10 institutions reported on student retention when Connect was not in use compared to with Connect. In each case, student retention was higher in sections where Connect was in use and demonstrated an average 19.8% more students stayed in the course (see Figure 4).

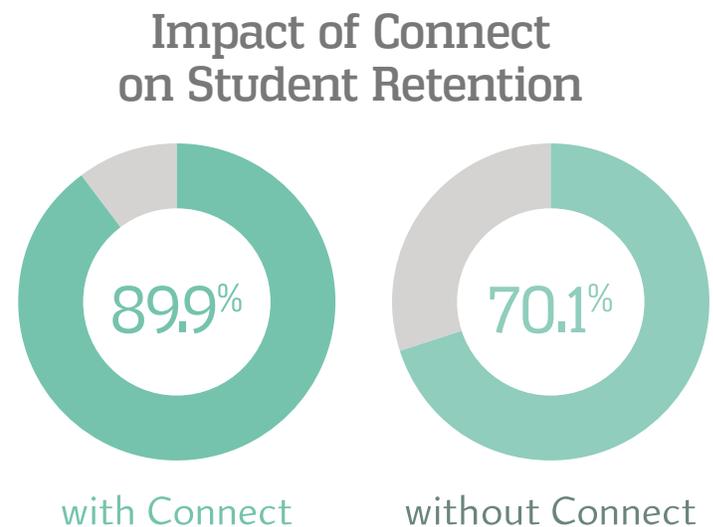


Figure 4

Madison Area Technical College Accounting I - Principles*

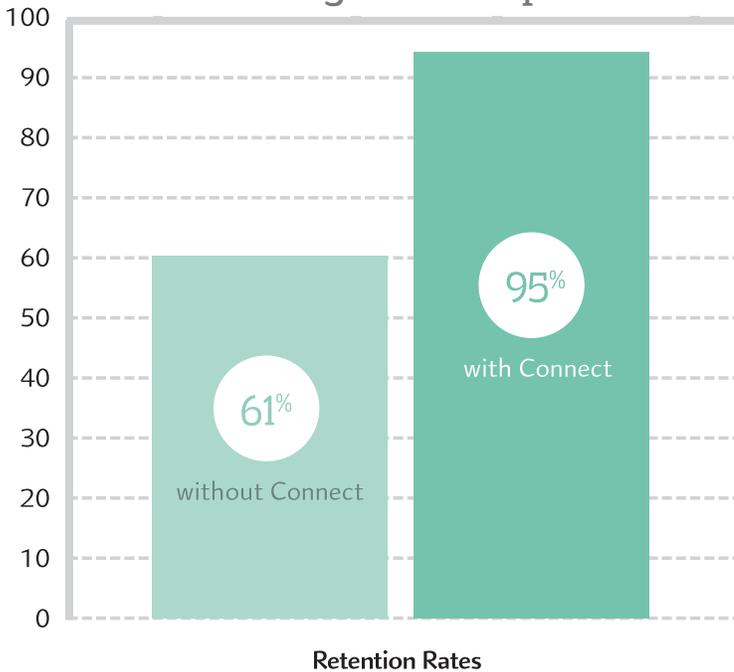


Figure 5

*Connect required for 75% of grade

Professor M. Jeff Quinlan of Madison Area Technical College implemented *Connect* to provide his accounting students with more opportunity for practice with algorithmic question assignments and immediate feedback on their homework. Professor Quinlan used *SmartBook* and other learning resources extensively—assigning pre-lecture *SmartBook* assignments and post-lecture homework in *Connect*. He cites the value of the reporting capabilities in *Connect* in improving student retention (see Figure 5).

“With *Connect*, students get feedback immediately, and with algorithmic questions, they do their own work and can attempt newly generated assignments multiple times. Imagine, students doing more accounting homework. It shows in their grade. Students don't send me many emails thanking me for forcing them to read, but I did get a few commenting *SmartBook* helped focus their attention to what was important. If it didn't make sense after reading the highlighted areas, they kept reading.

The reports provide me with the rationale to initiate contact with struggling students, without having to hand back homework with red marks all over it.

With *Connect*, we are able to be more flexible and serve more students per section. Add retention and that is a combination sure to make any administrator smile.”

– M. Jeff Quinlan, professor of Accounting, Madison Area Technical College

🔍 Case Study Spotlight

Austin Peay State University Foundations to Education*

Dr. Erin Lynch-Alexander of Austin Peay State University began using *Connect* in spring 2015 in her Foundations to Education course. She required students to complete *SmartBook* assignments before class for concept mastery and vocabulary instruction. She then used the student performance data to identify the topics students struggle with the most to help her prepare more focused and interactive lectures. She found that rather than simply lecturing to students, she is now answering more questions from students and leading an interactive class experience. After implementing *Connect* she experienced a 20% improvement in student retention (see Figure 6).

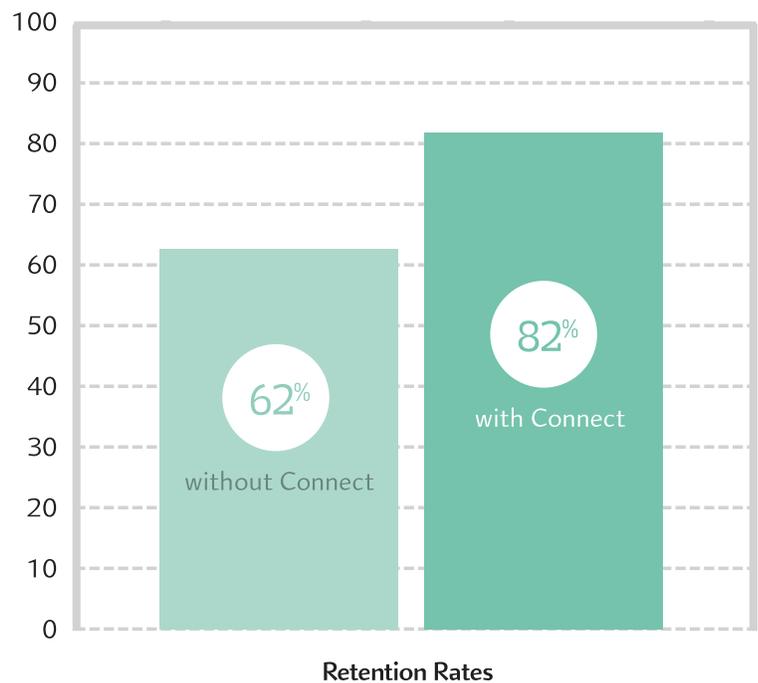


Figure 6

*Connect required for 10% of grade

“Using the *SmartBook* reports provided a basis of which learning objectives needed most focus. They were awesome in reflecting the metacognitive skills of students by demonstrating the areas they thought they knew and facilitating the conversation as to why they thought they knew it so as to dispel conceptual myths.

Connect allowed me to make class time more meaningful for students. Rather than lecture on concepts or attempt to discuss concepts from the reading in a room of students who had not read, *Connect* allowed me to more effectively use class time on activities that strengthen student learning.”

– Dr. Erin Lynch-Alexander, professor of Education,
Austin Peay State University

Connect's Impact on Pass Rates

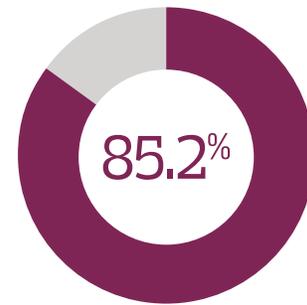
After implementing *Connect*, aggregated case study data indicates a 13-point improvement in pass rates, from 72.5% to 85.2%.

Pass rates are not only a success metric that many institutions evaluate as a key indicator of curriculum effectiveness; passing a class is also an economic concern for many students and families nationwide, since not passing the first time often means re-taking the class at another point in the future and paying full tuition for it once again.

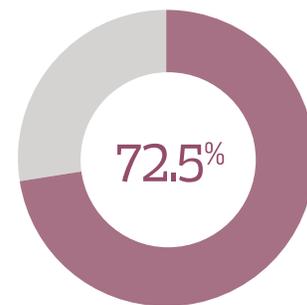
Additionally, pass rates correlate to industry and government concern with regard to declining on-time college completions rates. According to a report published by non-profit organization *Complete College America*³, only 50 out of approximately 580 public colleges and universities indicate “on-time graduation rates at or above 50% for their first-time, full-time students.” The report also estimates added costs for additional years of study reaching into the thousands of dollars, not to mention lost wages to potential income earners who are unable to graduate on time. The *National Center for Education Statistics*⁴ likewise indicates that only 39% of first-time, full year students graduate within four years, whereas 59% require six years to earn an undergraduate bachelor’s degree.

In 2014 and 2015, instructors from fifteen institutions reported on pass rates in case studies, showing a 13% improvement in the percentage of students passing the class when Connect is in use as compared to sections not using Connect (see Figure 7).

Impact of Connect on Pass Rates



with Connect



without Connect

Figure 7

Case Study Spotlight

St. Louis Community College Intro to Microbiology*

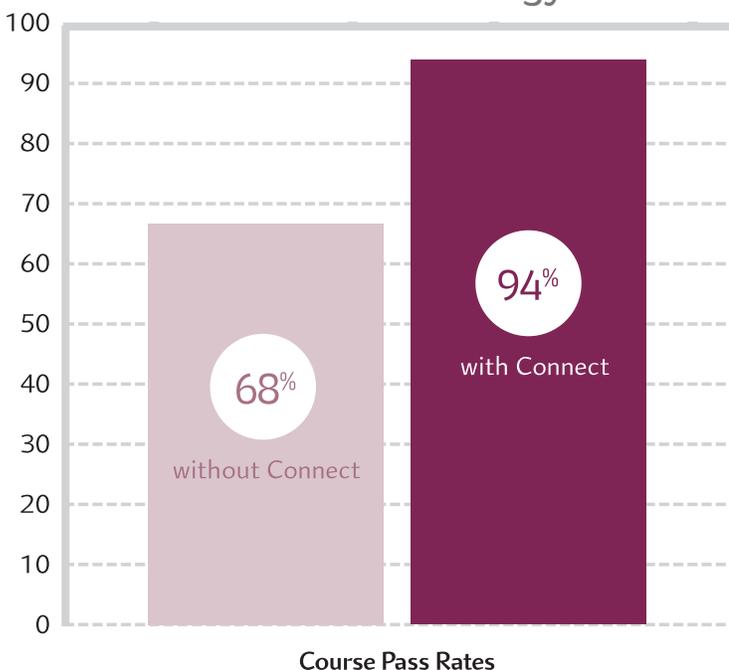


Figure 8

*Connect required for 5% of grade

With the implementation of *Connect* in her introductory microbiology course, Professor Angela NewMyer of St. Louis Community College – Forest Park experienced increased student engagement and retention of course material. She assigned *SmartBook* assignments corresponding to chapters in the textbook. She then used animations and video resources to supplement lecture material students had a difficult time understanding. She actively used student data provided in the reports to identify challenging topics and those students that may need help. After she started using *Connect*, her student pass rates improved by over 25% (see Figure 8) and she saw a 10-15% improvement in average exam scores.

³ Complete College America; “4-Year” Degrees Now A Myth In American Higher Education 2014

⁴ U.S. Department of Education, National Center for Education Statistics. (2015). *The Condition of Education 2015* (NCES 2015-144)

“I believe the use of the SmartBook and Connect allow for the subject matter to be more approachable by the students. I believe the Connect results speak for themselves when it comes to pass rates and test scores.

The Missed Questions report helps me figure out the difficult topics that need more attention while the Student Detail report allows me to see the level of completion a student has reached. It will also show me if a student needed a long period of time to complete an assignment. This may indicate the student needs more instruction.”

– Angela NewMyer, professor of Microbiology,
St. Louis Community College - Forest Park

🔍 Case Study Spotlight

Professor Timothy Pierce of Northern Illinois University has used *Connect* in his communications course for over four years in a flipped classroom environment and has continued to see student success rates improve. Pierce chose to use *Connect* in his classes because he wanted students to complete the assigned reading before class. He made *SmartBook* assignments due prior to lecture. He then used the reports that showed him what content students were most challenged by to determine whether he would plan an activity, lecture, or mixture of the two for the next class. After class, students were required to complete an online quiz before the next class. Over the four year period, student GPAs improved from 2.00 – 2.50 to about 2.50 – 3.00, and pass rates climbed 8% (see Figure 9).

Northern Illinois University Oral Communications*

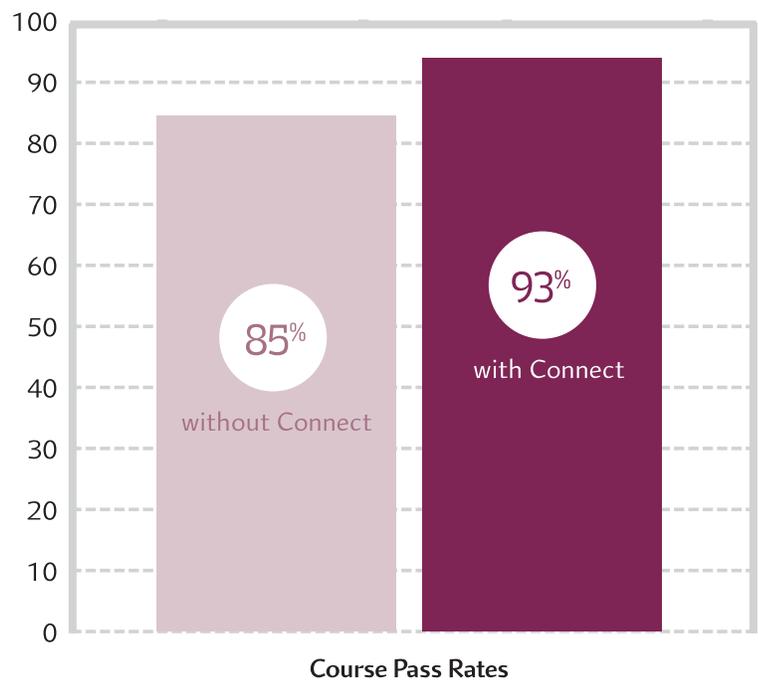


Figure 9

*Connect required for 20% of grade

“I know that students aren’t reading texts in the same fashion, but, if I could get them to do the work and access the text in a way that would allow them to learn the material, I figured I would have accomplished something.

In the past, I would have one lecture that I would use for each class section. Now, I use Connect to help me customize my lectures for each section of my course, so I’m better able to adapt my class to the needs of my students.

I love the At-Risk Report because it boils down how the student is engaging with the system with a number out of 10. I use this score as an online engagement grade that I update each Friday so that students can see if the scores move up or down from week to week. If the system flags the student as being severely at-risk, I [...] e-mail the student asking him or her to make an appointment to meet with me to come up with a strategy for improvement.”

– Timothy Pierce, professor of Communications,
Northern Illinois University

Connect’s Impact on Average Exam Scores

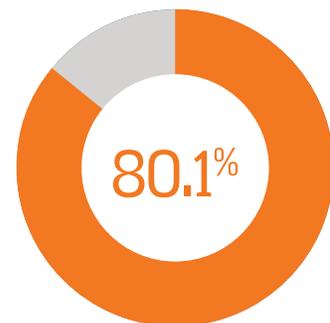
After implementing Connect, aggregated case study data indicates an improvement in average student exam scores, from 71% to 80.1%.

In 2014 and 2015, instructors from fourteen institutions reported on average student exam scores. In each case, average student exam scores were higher in sections where Connect was in use showing an average increase of 9.1% (see Figure 10). A study of student user satisfaction supports these findings with 74% of students stating they believed they performed better on quizzes and exams when using Connect⁵.

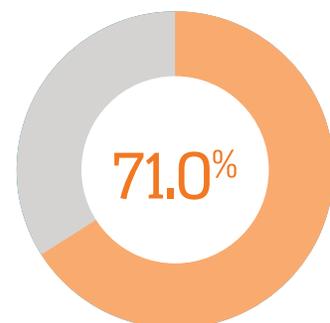
74%

of students believed they performed better on quizzes and exams when using Connect

Impact of Connect on Average Exam Scores



with Connect

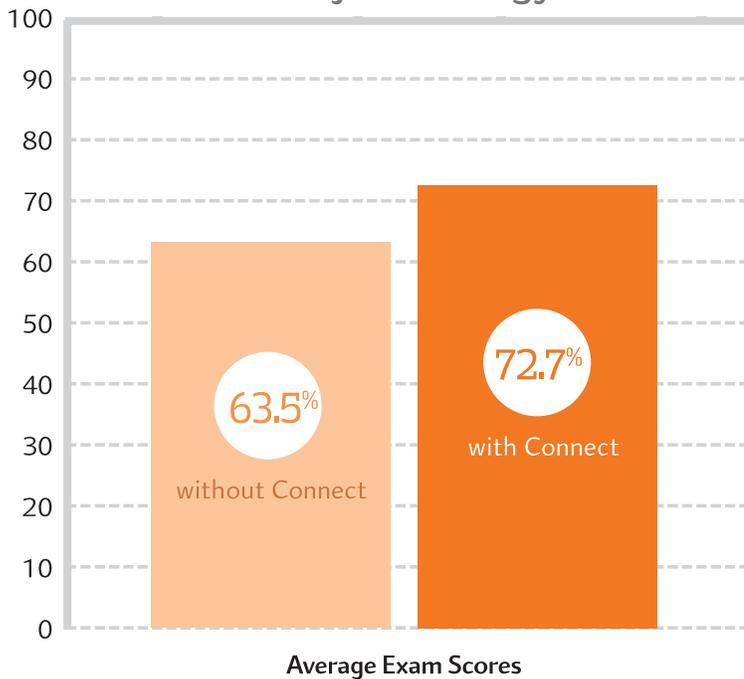


without Connect

Figure 10

⁵ Hanover Research – 2015 McGraw-Hill Connect Satisfaction Study

Broward College Non-Majors Biology*



*Connect required for 88% of grade; homework and exams in Connect

Figure 11

For Dr. Vanessa Hörmann at Broward College, *Connect* has been an effective tool for both streamlining her hybrid non-majors biology course and achieving positive student outcomes. She required students to complete one *SmartBook* chapter assignments before lectures and twice-weekly *Connect* homework assignments prior to chapter exams. With automatic grading she cut her time spent grading and increased the time she has free to engage with her students. She also customized her lectures around the “most challenging learning objectives” and “frequently missed questions” data from the *SmartBook* reports. In addition to improved exam scores (an average of 9.2% (see Figure 11)), Professor Hörmann saw improved pass rates and course grade distribution.

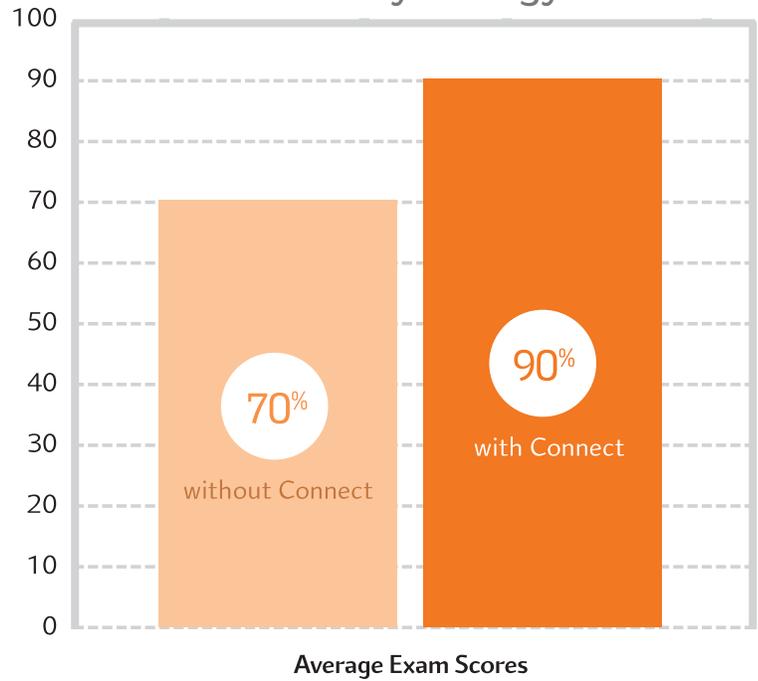
“Exam grades in lecture classes using *Connect* are higher, especially on exams covering more detailed aspects, such as transcription and translation. In general, exam scores are higher after students complete *SmartBook* modules.

With the use of Connect, I see fewer F's in my class and the majority of students finish the term with a B. I credit this to the reporting options, which identify at-risk students to me and help students identify their trouble topics.”

- Dr. Vanessa Hörmann, professor of Biology, Broward College

Bridge Valley Community & Technical College General Psychology*

Assistant Professor Lana Andrian of Bridge Valley Community and Technical College was interested in providing a more active learning experience for students in her general psychology class. With *Connect*, Professor Andrian required students to complete the SmartBook assignment prior to class and assigned relevant videos to tie the material together for deeper understanding. Professor Andrian reported, “the students love *SmartBook* because it covers specific content that will be on their exam for that particular chapter.” She followed these assignments with a 40-question exam covering the chapter taken in the computer lab classroom during class. After implementing *Connect*, she found that student performance on exams rose 20% (see Figure 12), the pass rate for the course increased from 83% to 89%, and the number of ‘A’ grades earned increased.



*Connect required for 80% of grade; homework and exams in Connect

Figure 12

“Everything is at the student's fingertips. All they have to do is apply themselves. My goal is for the students not to memorize and dump, but to retain the information... I believe *Connect* to be a total package as far as reaching students to meet their highest potential in whatever capacity they learn best.”

– Lana Andrian, assistant professor of Psychology,
Bridge Valley Community and Technical College

Connect's Impact on Final Course Grades

2014-2015 case studies indicate that with Connect 15% more students earned A's and B's.

While exam scores are an essential measure of student success, McGraw-Hill Education has also found a consistent correlation between the use of *Connect* and improved final course grades. During 2014-2015, nine instructors across 16 distinct sections reported on final grade distribution when using *Connect* and when not using *Connect*. In each case, sections using *Connect* reported a more favorable final course grade distribution, with an average increase of 15% more students earning A's and B's as compared to classrooms not using *Connect* (see Figure 13).

15%

more students earned A's and B's when using Connect

Impact on Final Course Grade Distribution

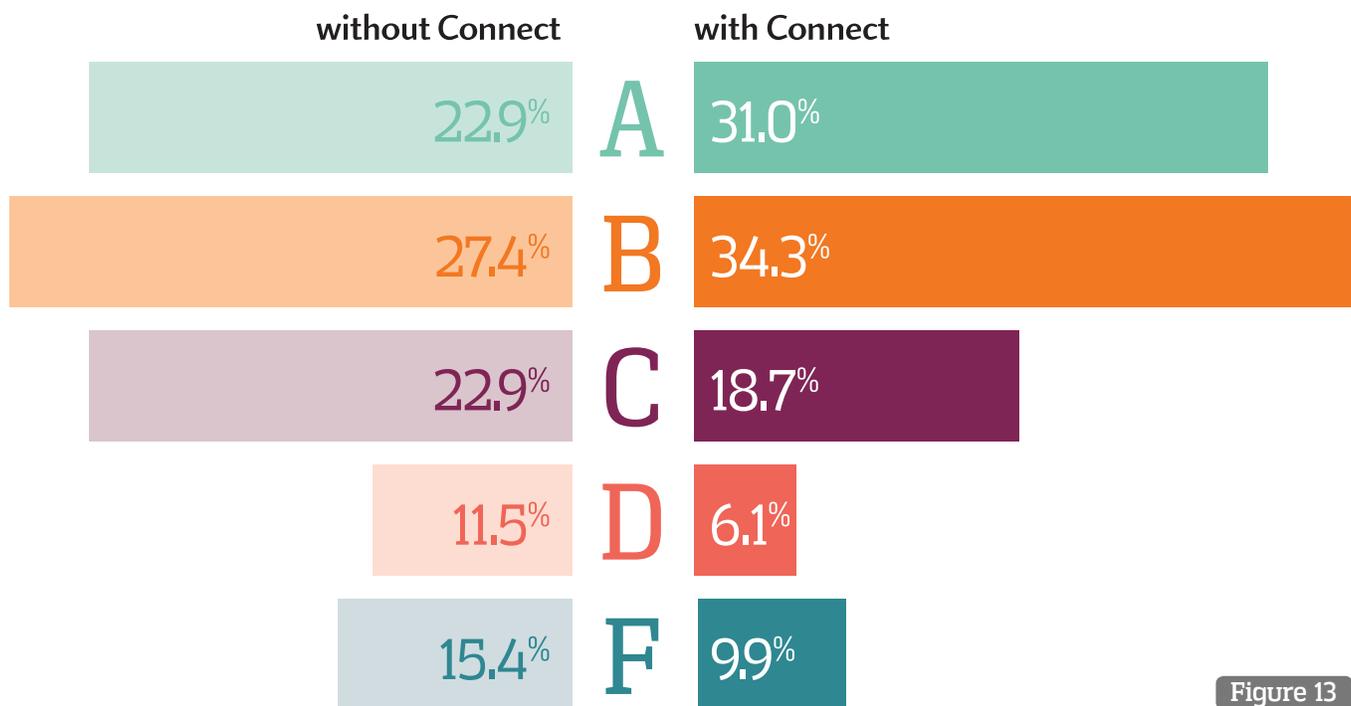


Figure 13

🔍 Case Study Spotlight

Professor Tiffiny Guidry of University of Alabama needed an online platform for her introductory sociology course able to handle large numbers of students efficiently due to an average 200 students in her online sections. In *Connect*, students are required to complete a weekly SmartBook assignment and a quiz for each chapter covered. When comparing final grades, 82% of Dr. Guidry's students earn grades of A or B with *Connect* as compared to the 68% of students who earn A or B grades without *Connect*, a 14% increase (see Figure 14). More than half (54%) of the students enrolled in sections using *Connect* earned an A.

University of Alabama Introduction to Sociology*

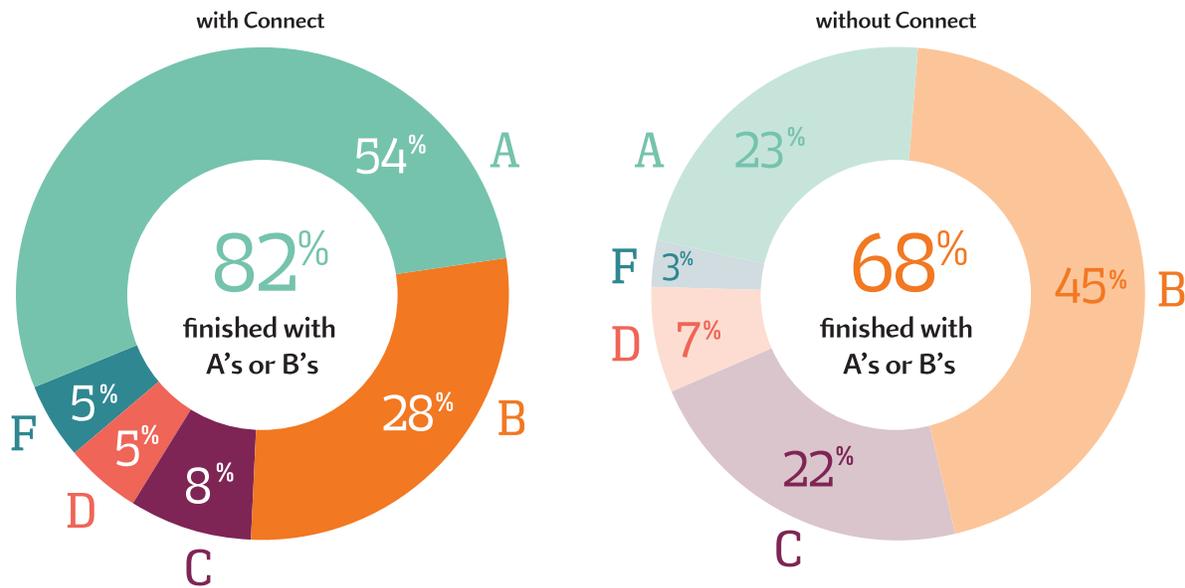


Figure 14

*Connect required for 90% of grade, including assignments and exams

“Connect allows me to provide a very streamlined course with the text and assignments all in one place, making it easier for students to acquire meaningful knowledge in an online format designed to handle a large number of students at a time.

The really wonderful part, though, is that the students don't see the same questions they miss over again, so they can't just memorize answers! The material will appear again, but it will be asked in a different way.”

– Tiffiny Guidry, professor of Sociology, University of Alabama

🔍 Case Study Spotlight

After implementing *Connect*, Professor Brandon Winters from Bethel University was able to alter his teaching style to emphasize group work in his general chemistry course. He assigned *SmartBook* content incrementally to only focus on the sections that will be covered in each lecture and made the assignments due the prior evening. He then assigned *Connect* homework featuring both conceptual and mathematical problems on that content due 48 hours post lecture. An optional third type of assignment was the Exam Prep which included problems similar to the chapter assignments. Based on his observations, Professor Winters concluded that *SmartBook* was important to students' absorption of material; and he found that the use of *Connect* fostered more effective learning by prompting students to solve problems on their own. He reported that 29% more students earned A's and B's when using *Connect* (see Figure 15).

Bethel University General Chemistry*

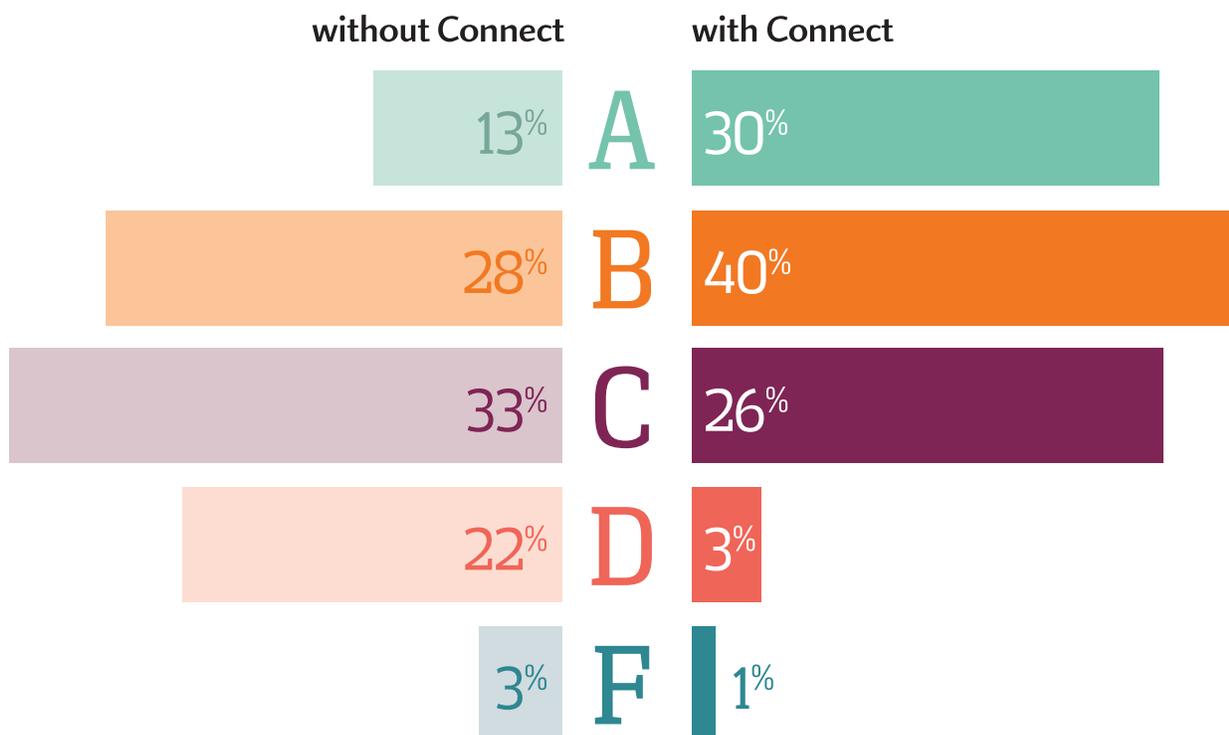


Figure 15

*Connect required for 20% of grade

“The use of Connect is allowing me to adapt my lecture style to include more group learning activities without having to formally flip the classroom. I am able to incorporate one lecture a week out of three that focuses exclusively on group problem solving and discussion-based learning.

SmartBook is the most significant way students engage in reading about and learning new vocabulary in the proper context, and I think this has helped quite a bit. As for solving related mathematical problems in the Connect assignments, I think the ability to show hints, answers, and guided solutions have been invaluable in helping students solve problems and answer their own questions at the moment they have them.”

– Dr. Brandon Winters, professor of Chemistry, Bethel University

Connect's Impact on Instructor Time Management

Aggregated case study data indicates instructors spend 72% less time on administrative tasks, and 90% more time on active learning experiences, when Connect is in use.

Instructors frequently cite the benefits they experience after implementing *Connect*, specifically reduced time spent on administrative tasks, allowing for more engagement with students in class. Data from 2014 and 2015 case studies supports this feedback. Participating instructors reported the number of minutes spent per week on each of the following tasks before and after implementing *Connect*. The aggregate findings showed 65% less time spent administering quizzes, 83% less time spent going over homework assignments in class, and 67% less time grading outside of class (see Figure 16). And since many students using *Connect* attend class having already spent time studying prior to a lecture, they are prepared for class with the basic knowledge needed to engage in higher-level learning. Our findings showed that instructors using *Connect* nearly doubled time spent on active learning experiences in class than when *Connect* was not in use (see Figure 16).

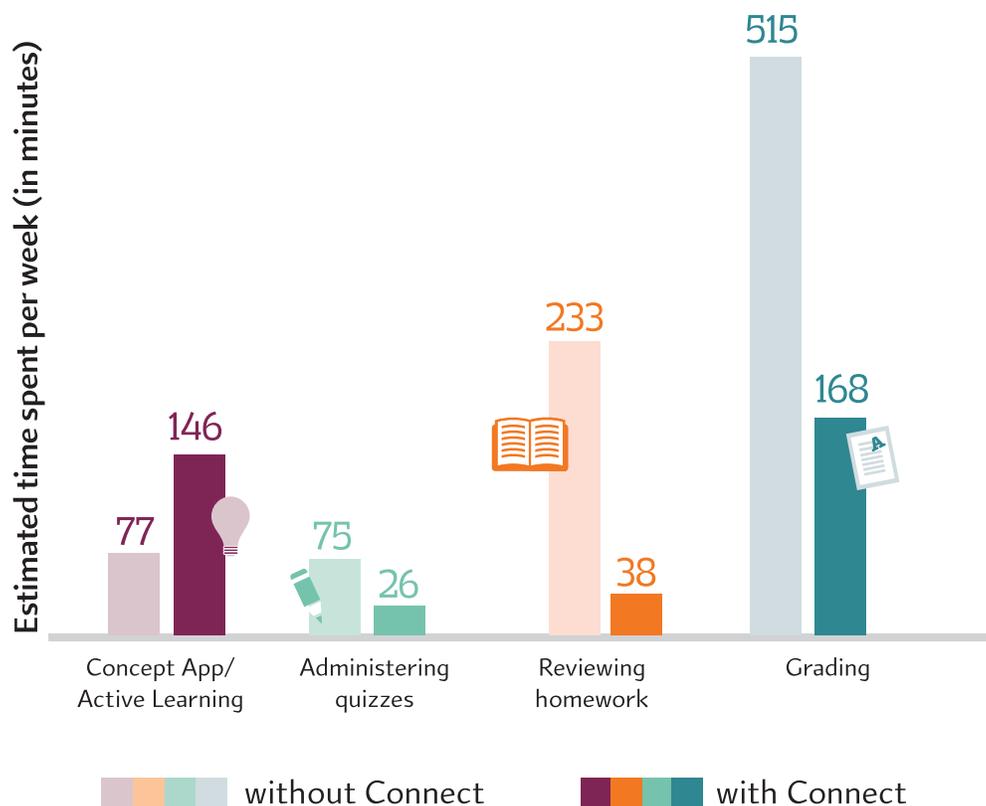


Figure 16

Case Study Spotlight

Professor Laura Jean Bhadra of Northern Virginia Community College – Manassas Campus teaches 5 economics courses – approximately 150 students – each semester. Since she implemented *Connect*, she reduced time spent reviewing homework, giving quizzes, and grading (see Figure 17). She then used that time to prepare for lecture and consequently spent more time on concept application and active learning in class. Overall she felt that the class experience was more engaging for both the students and herself when using *Connect*.

Northern Virginia Community College - Manassas Campus

Principles of Macroeconomics*

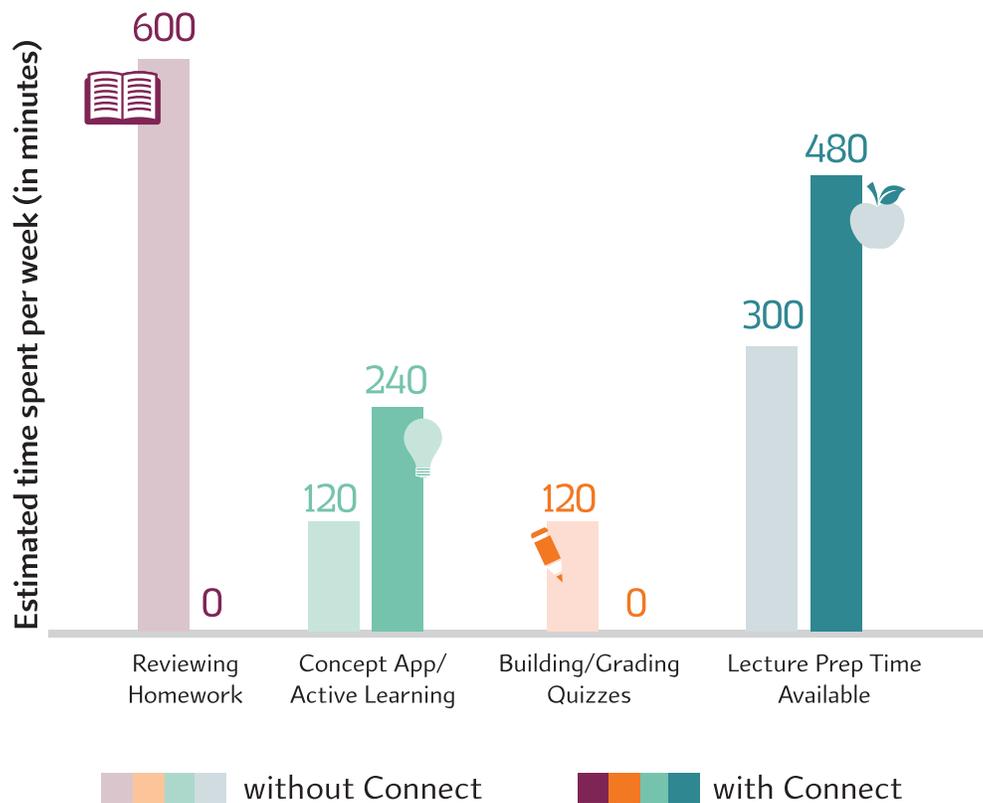


Figure 17

*Connect required for 20% of grade

“The time saved in grading is the biggest impact for me. The efficiency with which Connect grades and seamlessly syncs with Blackboard is a huge advantage.

We were able to do more in-class activities and develop more of a flipped classroom due to students' work in Connect.

As a result of using Connect, I am able to cover more content. Having the students complete the SmartBook assignments helps the students understand complex economic concepts and allows me to spend more time in class on extended applications.”

– Laura Jean Bhadra, professor of Economics,
Northern Virginia Community College – Manassas Campus

Connect's Impact on Student Engagement

Instructor and student testimonials indicated an improvement in student engagement when Connect is in use.

Data showing improvements in student outcomes when using a digital learning system like *Connect* is abundant. Our case study process focused principally on collecting quantifiable data reflecting the impact of *Connect*. That said, one of the most important key indicators of a student's likelihood of success in a class is the extent to which they are *engaged* in the learning process. While it is challenging to quantifiably measure student engagement, based on the qualitative feedback from case study participants, along with user satisfaction survey data and professor and student testimonials, students using *Connect* are reported to indeed be more engaged.

“I love Connect. I teach entirely online and I like to give students practice assignments so they have the opportunity to master the concepts and practice working problems. Since they get a unique set of data with each attempt I know that they are engaged in learning, not just copying answers. My students frequently comment about how valuable these tools are for them as well. Connect has gone a long way in helping me provide a quality learning environment for online students.”

– Malcolm E White, CPA, professor of Management, Columbia College

“Connect is a great learning tool for students. Given the option of multiple attempts and immediate feedback the students get more engaged.”

– Steven Yourstone, professor of Operations Management, University of New Mexico

“I like the variety of features available in Connect. Everything I learn from reading the text is reinforced by the visual and interactive components, meaning that I'm engaging in the lessons on several angles and truly absorbing and retaining it all.”

– Christina, student at Western Illinois University-QC

“I find that my students don't mind doing Connect assignments and are more engaged during class. They already have some background about the material we are covering and actually engage in class discussions more frequently.”

– J. Michael Sellers, instructor of Biology, University of Southern Mississippi

“Student engagement has increased outside the classroom, and they tend to log on over the weekends to complete the assignments and access the SmartBook.”

– Dr. Vanessa Hörmann, professor of Biology, Broward College

“Using Connect has revolutionized the way I teach psychology. It started with having to spend less time grading papers, which gave me more time to prep for class and design better assignments in Connect for students. When students completed those assignments before class, I spent less time “talking at” students and more time “talking with” students because they were already familiar with the key concepts for the chapter. More engagement in class meant more retention and better final grades. Better student outcomes led to happier administrators...Connect has been a one-stop solution for our department!”

*– Cheri Kittrell, professor of Psychology,
State College of Florida*

“McGraw-Hill Connect was great! It let me engage with the reading material and also helped my overall grade for my course!”

*– Cameron, student at Southern
New Hampshire University*

“I like the variety of features available in Connect. Everything I learn from reading the text is reinforced by the visual and interactive components, meaning that I’m engaging in the lessons on several angles and truly absorbing and retaining it all.”

*– Christina, student at Western
Illinois University - Quad Cities*

The Learning Science Behind Connect

Using Metacognition to Improve Student Confidence and Success

Rather than use a one-size-fits-all approach to instructional design, the *SmartBook* adaptive technology within *Connect* creates a personalized experience tailor-made for each student.

Do students really know what they think they know? Do they know what they don’t know? These are the questions answered through metacognition. In *SmartBook*, each student is asked to rate their level of confidence after answering each question. Over time, student self-assessment of their knowledge drives the adaptive learning experience, and *SmartBook* gets better and better at identifying that student’s learning needs. *SmartBook* also continually adapts the content presented to students based on student responses in real-time, ensuring they are always engaged with the most impactful content.

Features available within SmartBook provide a continually adapting, personalized experience for each student

Adaptive Learning Resources Make Study Time More Productive

Students complete assigned preparatory “Reading” and “Practice” in *SmartBook*. Key passages are highlighted for immediate reading, according to the instructor’s learning objectives. The highlighting experienced during the Reading phase and probes presented during the Practice phase continuously adapt to each learner based on their activity.

Each Student Receives a Unique Learning Path

Each “probe” (a data-informed question) corresponds to a learning objective covered in the assigned content. Each learning objective has multiple probes spanning varying levels of difficulty. Before responding to the probes, students first report on their confidence level of whether they know the answer. Behind the scenes, the seemingly simple probes capture a myriad of data, including baseline knowledge, confidence, and user behavior such as time to select answer, time on feedback and more. This not only assesses the user’s knowledge level, but also informs the next probe and the student’s unique learning path.

“Recharge” Reinforces The Right Material At the Right Time

Using the data gleaned from probes, in-platform content review, and metacognitive intelligence, *SmartBook* uses complex algorithms to predict the moment a learner is about to forget something. The Recharge feature then provides a resource for students to review and reinforce topics when needed. The rate of memory loss and topics covered are unique to each student, therefore the recharge experience is entirely unique to each learner as well. The result is long-term knowledge retention that leads to mastery – and ultimately better outcomes.

Overcoming Memory Decay to Improve Course Outcomes

In 1885, scientist Hermann Ebbinghaus extrapolated a startling new hypothesis: Humans tend to remember only half of newly-learned knowledge in the following days or weeks unless that material is reviewed. This is known as the Ebbinghaus Forgetting Curve, and it represents one of the key underpinnings of how *SmartBook* works to improve knowledge retention and long-term concept mastery.

“*I have never enjoyed reading a textbook or been able to retain much information with it, but with the online interactive features of Connect, it makes learning fun, interesting and allows me to actually learn and retain information.*”

– *Melissa, student at University of Maine at Machias*

“*Overall, Connect has allowed me to fine-tune my lecture. I am able to go into detail quicker in the lecture period since the students have completed their SmartBook modules and have an understanding of chapter topics... Students tend to generate more detailed questions now, specific to the topics discussed.*”

– *Dr. Vanessa Hörmann, professor of Biology, Broward College*

Using Data to Improve Student Performance

One way to impact student performance is to provide the instructor with real-time data from students, allowing them to intervene with students when needed and adapt their course to the individual student and class. *What topics have students mastered? Where are they struggling? Are they engaged? Who is at risk of dropping out?* Connect’s powerful, data-driven reporting gives clear answers to these questions, allowing instructors to make intelligently designed learning experiences.

Features available within Connect make it possible for instructors to approach a class of 50 like a class of one

Get Key Insights At-a-Glance with Connect Insight™

A visual analytics dashboard – now available to both instructors and students – provides at-a-glance information regarding student performance that is immediately actionable. By presenting assignment, assessment, and topical performance results together with a time on task metric that is easily visible for aggregate or individual results, *Connect Insight* gives the user the ability to take a just-in-time approach to teaching and learning.

Gain More Comprehensive Insights with Powerful Connect Assignment Reports

Connect can generate a number of powerful reports and charts across a diverse set of variables to give instructors the information they need to easily evaluate performance across the course, each class or by individual student to keep students on a path to success. The “At-Risk Report” highlights each student’s engagement in the course material to allow instructors to quickly identify students who might be vulnerable to dropping out of a class or struggling to pass.

Know What Students Know and Don’t Know

What are the most challenging learning objectives? What probes and assignment questions are students getting right and wrong? Through the reports generated by *SmartBook*, instructors can see where students are struggling and can tailor lectures, assignments and study materials to suit.

“The ability to tailor a student's learning experience toward the things the student doesn't know rather than what the student has already grasped is incredible, especially when there are huge numbers of students involved. This experience allows the course to be individualized for each student rather than offering a one-size-fits-all, 'canned' course experience.”

*– Professor Tiffany Guidry,
University of Alabama-Tuscaloosa*

Conclusion

Our studies indicate that with *Connect*, students were more engaged in the material, more likely to stay in class and more likely to achieve successful outcomes. Instructors were able to make better use of their time and to implement more active instruction, intervene with struggling students, and facilitate greater student success in their classes.

Ami Scarbrough, Senior Director of Health Services Programs from Virginia College Online Division, sums up the sentiment echoed by hundreds of instructors across the country:

“From the time I started using Connect, I have been hooked. I have used other online systems and have not had nearly the success as I have had with Connect. This has been a great way to allow students to be able to utilize online resources more effectively. It also saves time for instructors to manage and teach their courses more effectively. They are not bogged down in the administrative aspects, because items are auto-graded for their convenience. We have definitely seen an increase in student participation, engagement, and retention as a result of adopting this platform.”

Methodology

The performance data used in this effectiveness study are based on case studies conducted by twenty different instructors from institutions of higher education.

These instructors measured the effect of *Connect* on a set of performance indicators for student performance and instructor efficiencies using measurable metrics. In consideration of the time and effort instructors devoted to providing the data, they were provided with a \$200 honorarium, irrespective of the nature of the results reported. Control and test groups were determined according to context. In some cases, performance metrics were recorded simultaneously between two groups of the same class, one using *Connect* while the other did not. In other cases, professors recorded the differences demonstrated before and after implementing *Connect*. While each professor had control over the specific metrics studies and the determination of control and test groups, consistent methodology was used to compute performance metrics. The reported outcomes indicated a correlation between using *Connect* and improved results but the case studies did not explicitly examine the statistical significance of that correlation.

We understand class performance can improve due to a number of factors, including the innate abilities and prior education of the students participating, as well as differences among instructors and their pedagogies. We believe that even taking these factors into account, *Connect* can contribute to significant improvements in student outcomes.

The Numbers Behind the Study

The production of the *Connect Effectiveness Study 2016* is designed to demonstrate the outcomes instructors and students achieved using *Connect*, as well as how they are achieving them. To prepare this study, data was analyzed from the following:

- ▶ 20 instructors unique data from 2014 and 2015
- ▶ 1,195 unique testimonials from students
- ▶ 315 unique testimonials from educators

Case study source data analyzed for the Connect Effectiveness Study 2016

- ▶ [April Mohr, Jefferson Community and Technical College, Accounting](#)
- ▶ [M. Jeff Quinlan, Madison Area Technical College, Accounting](#)
- ▶ [Terri Castenada, California State University, Sacramento, Anthropology](#)
- ▶ [Dr. Vanessa Hörmann, Broward College, Biology](#)
- ▶ [Stacey Lhuillier, Kansas State University - Manhattan, Business](#)
- ▶ [Dr. Gary Buckley, Cameron University, Chemistry](#)
- ▶ [Dr. Brandon Winters, Bethel University, Chemistry](#)
- ▶ [Lauren Morgan, College of DuPage, Communication](#)
- ▶ [Laura Jean Bhadra, Northern Virginia Community College - Manassas Campus, Economics](#)
- ▶ [Dr. Erin Lynch-Alexander, Austin Peay State University, Education](#)
- ▶ [Betty Evans, University of Arkansas at Monticello, English](#)
- ▶ [Angela NewMyer, St. Louis Community College at Forest Park, Microbiology](#)
- ▶ [James Eastepe, Central Piedmont Community College, Music](#)
- ▶ [Kristin Clark Randles, Central Piedmont Community College, Music](#)
- ▶ [Peggy Daniels Lee, Indiana University Kelley School of Business, Operations Management](#)
- ▶ [Lana Andread, Bridge Valley Community and Technical College, Psychology](#)
- ▶ [Cheri Kittrell, State College of Florida, Psychology](#)
- ▶ [Tim Pierce, Northern Illinois University, Public Speaking](#)
- ▶ [Dr. Tiffiny Guidry, The University of Alabama, Sociology](#)
- ▶ [Dr. Curt Hosier, Indiana University-Purdue University Fort Wayne, Sociology](#)



Learn More

To see how instructors across disciplines are achieving improved course outcomes, learn more at www.mheducation.com/highered/platforms/connect/case-studies.html

Request access to McGraw-Hill Connect® by contacting your McGraw-Hill Education Learning Technology Representative.

www.mhhe.com/rep



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