How Blended Learning Contributes to More Effective Course Management and Enhanced Student Outcomes
Leveraging Blended Learning for More Effective Course Management and Enhanced Student Outcomes

Abstract
This white paper explores compelling evidence showing that the successful application of blended learning (i.e., traditional in-person instruction combined with online tools and resources) can alleviate student challenges with regard to preparedness, absorption and practice of materials as well as instructor challenges in effectively engaging and managing students through the learning process. The employment of flexible, blended learning resources contributes to better student learning outcomes and enables more effective and targeted student/course management.

To identify the findings referenced in this paper, John Wiley & Sons, Inc. reviewed findings from their proprietary research among higher education instructors and students, along with an extensive Department of Education-sponsored meta-analysis of 12 years of research literature and other industry studies of student demographics and outcomes.

Executive Summary
Student populations are growing rapidly, and students are busier and more technologically connected than ever. However, the fast-paced, social networking environment has spawned shorter attention spans among students, which in turn make it more difficult for educators to engage, assess, and motivate them.

The challenge is twofold. Instructors are burdened with heavy class loads and course administration requirements that strain finite resources and leave little time for individual assessment and remediation. For their part, students find the traditional textbook misaligned with the way they process information, which compounds their difficulty in organizing and learning the material.

The result? Students are often underprepared for class, and instructors—with insufficient means to reach out to each student—must devote more class time to review of topics already covered than to the introduction of new material.

Attaining high levels of student engagement can be an elusive goal
As illustrated in findings from John Wiley & Sons primary research, a key instructor challenge is reaching and motivating a student base that is largely underprepared or unable to manage time effectively to absorb, retain, and build on their knowledge of the course material.

Blended learning solutions address students’ needs for multi-modal, engaging material
The U.S. Department of Education recently published results from extensive meta-analysis of online learning research studies published between 1996 and 2008 that objectively measured student learning outcomes. The analysis found that outcomes were superior in courses employing online resources compared to those using traditional face-to-face instruction only.

Moreover, the blending of face-to-face and online learning components, like WileyPLUS, was shown to yield higher student outcomes than either in-person instruction or wholly online methodologies.

Far from a simple endorsement of online learning media, this study emphasizes the fact that online resources are but one channel for education; it’s the effective use of this channel that positively impacts student engagement and outcomes.
Instructors can employ online resources to maximize their course management efficiencies and create a more stimulating learning experience for the student

Using online resources, instructors can effectively “extend their reach” and create a customized student learning experience by: presenting material in a variety of ways; assigning and grading more efficiently; and implementing ongoing student self-assessments.

The solution: WileyPLUS delivers flexible options that address challenges in both the teaching and learning experiences

Instructors can easily adopt WileyPLUS tools for course administration, which include customized presentations, pre-created assignments and multi-modal delivery to engage students. WileyPLUS also provides a better “fit” for how students learn, offering a full digital textbook, multiple content presentations and functionality to track their own progress and identify learning gaps.

Both teacher and student face challenges in building learning connections

Instructors lament students’ lack of preparedness and study habits

Common instructor complaints are that students don’t read, lack time management skills and are averse to spending the necessary time out of class on homework and general preparation. This requires instructors to either devote more class time to review information that students should have read before class or to push forward with new material, risking that the ill-prepared students flounder and lose their way.

This particular challenge carries with it an emotional toll. While instructors report a sense of accomplishment and reward when their students “get it” and are engaged with the learning, they often feel an equally strong sense of frustration and, at times, failure, when students are not motivated to learn.

This challenge also is underscored by a recent higher education study, which found that 20% of first-year students and seniors frequently came to class without completing readings or assignments (National Survey of Student Engagement, 2008). This negatively impacts students’ abilities to progress through their programs. In fact, nearly half of U.S. students in four-year colleges don’t finish their degrees within six years (Measuring Up, National Center for Public Policy and Higher Education, 2008).

Time and resource constraints prevent detailed progress assessments and remediation

Given the growth of student enrollments and concurrent large class sizes, instructors don’t have the time and tools to successfully manage students through their courses and assess progress for individuals. Meaningful discussions and interactions in class also become difficult.

Students often struggle to absorb and apply the information yet want to learn it

A recent John Wiley & Sons study of student workflow revealed that students want to learn and succeed, and they want to feel that the tools and materials they use in their course can make them more efficient and effective. However, study sessions are fraught with negative emotions, including anxiety, frustration and confusion.

A key means for students to address their study stressors is to balance the need to feel connected (particularly via others’ opinions) and the need to feel focused on the task at hand.

Technology increasingly affords online learning options that deliver superior student results

A comprehensive U.S. Department of Education research analysis points to the
value of online learning resources in addressing both student and instructor challenges

The U.S. Department of Education contracted with SRI International to conduct a systematic search and analysis of research literature on online learning from 1996 through July 2008. Analysts screened studies to ultimately identify 99 studies that used an experimental or quasi-experimental design and objectively measured student-learning outcomes. In their review of the data, analysts focused on the following four research questions:

• How does the effectiveness of online learning compare with that of face-to-face instruction?
• Does supplementing face-to-face instruction with online instruction enhance learning?
• What practices are associated with more effective online learning?
• What conditions influence the effectiveness of online learning?

Rigorous analysis of these empirical studies found that, on average, students exposed to online conditions performed better than those receiving face-to-face instruction. Of the 99 studies, there were 46 from which researchers were able to compute or estimate 51 independent effect sizes.

Analysis of these effects revealed that students who took all or part of their class online performed better, on average, than those taking the same course via traditional face-to-face instruction. In fact, the average effect size for online learning student outcomes compared to face-to-face conditions was +0.24, in favor of online conditions. Online learning is an effective option for both undergraduate and graduate students and professionals in a wide range of academic and professional studies.

Other key findings from this meta-analysis include:

• Students using online learning resources spent more time on task than those in face-to-face learning conditions and showed a greater benefit for online learning.
• It’s not simply the inclusion of more online media that exerts a positive impact on student outcomes, but the ability of learners to control their interactions with the online resources.
• Prompting students to be more reflective and to self-assess via online resources shows promise for improving learning outcomes.

It’s not the medium, but what educators and students can do with it

The meta-analysis concluded that “online learning can be enhanced by giving learners control of their interactions with media and promoting learner reflection.”

The analysis found that creating an individualized student experience via online resources, including opportunities for collaborative and active learning, is the key to improving both learning outcomes and retention of learned material.

Two studies (Zhang 2005) compared expository learning with active learning, both of which found statistically positive results for active learning. In particular, giving students control over their online learning experience (e.g., accessing information on demand and in the order they want it, and the ability to manipulate information online) yielded a significantly positive effect over a fixed access to materials. In addition, (Zhao et al. 2005) found advantages for blended learning (referred to as “face-to-face enhancement” in Exhibit 1) and more instructor involvement over purely online learning experiences.

“So I feel like when I study I have a lot to do and it’s only me and I have to juggle all these things at one time. I feel very stressed. Because I have more than one thing going on in life. I have a personal life, I have work, I have school and you have all these things going on at once. It’s very stressful.”

Student, John Wiley & Sons student workflow research, 2009
Online resources that are designed to engage students and get them to reflect on their learning were found to have positive effects on student outcomes:

Ten of twelve studies in the meta-analysis that investigated the effects of triggering reflection found that online systems in which students are prompted to reflect on their learning can improve learning outcomes.

The WileyPLUS solution addresses key issues associated with student and instructor challenges

Helping to bridge the engagement gap

In student survey research conducted by John Wiley & Sons, the most highly-rated features of WileyPLUS speak to the importance of building engagement and active learning into the student’s educational experience, both of which were determined by the government-sponsored meta-analysis to contribute to better learning outcomes.

Wiley’s research also found that 63% of respondents rate the WileyPLUS online textbook and tutorials very helpful in studying and learning, and 75% say that WileyPLUS had a positive impact on their course grade. In fact, after using WileyPLUS, 50% of students plan to purchase only it—for their next course.

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**Exhibit 1: Conceptual Framework for Online Learning**

<table>
<thead>
<tr>
<th>Learning Experience Dimension</th>
<th>Synchronicity</th>
<th>Face-to-Face Alternative</th>
<th>Face-to-Face Enhancement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expository</strong></td>
<td>Synchronous</td>
<td>Live, one-way webcast of online lecture course with limited learner control (e.g., students proceed through materials in set sequences)</td>
<td>Viewing webcasts to supplement in-class learning activities</td>
</tr>
<tr>
<td>Asynchronous</td>
<td>Math course taught through online video lectures that students can access on their own schedule</td>
<td>Online lectures on advanced topics made available as a resource for students in a conventional math class</td>
<td></td>
</tr>
<tr>
<td><strong>Active</strong></td>
<td>Synchronous</td>
<td>Learning how to troubleshoot a new type of computer system by consulting experts through live chat</td>
<td>Chatting with experts as the culminating activity for a curriculum unit on network administration</td>
</tr>
<tr>
<td>Asynchronous</td>
<td>Social studies course taught entirely through WebQuests that explore issues in U.S. history</td>
<td>WebQuest options offered as an enrichment activity for students completing their regular social studies assignments early</td>
<td></td>
</tr>
<tr>
<td><strong>Interactive</strong></td>
<td>Synchronous</td>
<td>Health care course taught entirely through an online, collaborative patient management simulation that multiple students interact with at the same time</td>
<td>Supplementing a lecture-based course through a session spent with a collaborative online simulation used by small groups of students</td>
</tr>
<tr>
<td>Asynchronous</td>
<td>Professional development for science teachers through threaded discussions and message boards on topics identified by participants</td>
<td>Supplemental, threaded discussions for pre-service teachers participating in a face-to-face course on science methods</td>
<td></td>
</tr>
</tbody>
</table>

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Two-thirds of students in the Wiley study find WileyPLUS very easy to use, while two-thirds of instructors in a companion study believe that using WileyPLUS helped them to engage students better.

Source: John Wiley & Sons higher education survey research, 2009
In line with their preferred learning style of accessing information on demand, students found the WileyPLUS system’s immediate feedback and links to solutions features the most helpful.

**Fostering more productive time spent on learning**

Despite the fact that many instructors feel that students don’t spend the requisite time studying, Wiley’s recent student workflow research (2009) indicates that they are, indeed, devoting significant time to coursework:

- A strong majority reports spending between six and 40 hours outside of class for courses in their majors.
- Students are increasing their use of WileyPLUS as the academic term progresses. In fact, about a third more student survey respondents used WileyPLUS “a lot” later in the semester/quarter compared to the percentage using it heavily early in the term.

**Optimizing course management for instructors**

Exhibit 2: Students Say WileyPLUS Features are Helpful in Learning and Studying Better

<table>
<thead>
<tr>
<th>Feature</th>
<th>% Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate feedback when correct or incorrect</td>
<td>80%</td>
</tr>
<tr>
<td>Links to view solutions</td>
<td>76%</td>
</tr>
<tr>
<td>Practice problems and self-assessments</td>
<td>70%</td>
</tr>
<tr>
<td>Tracking one’s own progress in personal grade books</td>
<td>66%</td>
</tr>
</tbody>
</table>

Source: John Wiley & Sons student survey research, 2009

“A great resource. As an older student, this type of learning material was not available before, and being a visual learner, this was a great way to learn material other than just reading a book and notes.”

Student, John Wiley & Sons student survey research, 2009

Exhibit 3: Instructors Say WileyPLUS Help Students Learn and Study Better

Source: John Wiley & Sons instructor survey research, 2009
Using WileyPLUS to improve the distance learning experience

When Dr. Ron Epps, Dean of Workforce Education at McLennan Community College in Texas, began designing his online Anatomy & Physiology class, his primary focus was meeting the challenge of potentially low student engagement posed by distance learning.

“One of the problems we have in online situations is, if you’re not careful, it becomes a correspondence course, where all the students do is read and answer questions online.”

For instructors in both traditional and distance learning environments, WileyPLUS makes it possible to pursue better student outcomes via a structured, yet dynamic, blended learning experience for students.

In a recent Wiley survey among 353 instructors across several disciplines, three quarters of respondents agreed that WileyPLUS helps students to better prepare, complete homework and develop a better understanding of course concepts. Approximately two-thirds of respondents agreed that WileyPLUS contributes to better student retention of the material, more confidence in the ability to learn and a better grade.

While remediation is critical to ensure that students remain on track, instructors are often unable to devote valuable lecture time to the review of assigned material. The WileyPLUS system is designed to help faculty spur students to become more active and reflective learners, with features including:

- Multiple presentations of the content to support different learning preferences
- The functionality for instructors to create assignments aligned to specific learning objectives
- A full digital textbook linked to problems for easy access to material while doing homework or practice exercises
- Links directly from homework or practice problems to remediation content (in quantitative subjects)
- Guided online (GO) tutorials to break problems into steps, providing hints for students along the way

Instructors, often responsible for multiple courses and sections, can lack the necessary resources to design and execute assignments for pre-class preparedness and to assess each student’s progress. The WileyPLUS system offers a variety of course management tools that make it easy to create and grade assignments and to deliver consistent course content across sections.

- Online gradebooks allow instructors to trace the

As seen in the government-sponsored meta-analysis, adapting content to a variety of media facilitates the blended learning experience, an approach that has been shown to enhance student outcomes.

The building blocks of online interaction

Initially, Epps thought about creating his own online class materials. “When I was building my online course, I looked at ways of finding websites I could use to help reinforce the information among students. I was thinking of making up my own crossword puzzles, like I used to do when I taught veterinary Anatomy & Physiology, as well as having more discussion questions online,” he says.

Through his familiarity with Wiley, however, Epps realized that the materials he sought were already available through the WileyPLUS offering. “When I built my online class, WileyPLUS facilitated the course design process and gave me a better platform to teach the course and make the online program more enjoyable. It had the animations, the puzzles, the flash cards, the audio. They had so many things to add to a course that, in all honesty, it made it easier on me to not have to provide all of that on my own.”

Addressing the need for active learning

For Epps, WileyPLUS provided the means to address students’ varied learning styles while encouraging the repetitive practice necessary for learning the detailed Anato-
progress of individual students to quickly determine any learning gaps.

- Automatic grading makes it possible even for those with very large class sizes to easily deploy assignments.

- Access to the Wiley Faculty Network (WFN) gives instructors the opportunity to collaborate with their peers and mentors within their disciplines, attend virtual and live events and view and contribute to a wealth of teaching and learning resources available online.

**Concluding summary:**

**Today’s students have adapted to technology, and studies show that effective use of online resources can increase learning outcomes**

Pairing supportive online resources with face-to-face instruction can help students to learn and reflect on material in a manner that suits how they consume information. *WileyPLUS* provides students with easy-to-use online resources that stimulate active learning and can optimize the time they spend on their coursework.

**Instructors require a dynamic, yet structured means of addressing varied student needs while managing heavy course loads**

Deploying multi-modal learning methods helps students to engage with and retain their learning, and continual assessment/remediation is a key to helping students stay on track. The *WileyPLUS* system facilitates instructors’ course management activities and delivers a range of flexible tools for easy design and deployment of assignments and tracking of student progress.

- Epps notes the ease of creating assignments and tracking student progress on them via *WileyPLUS*: “I go in and make an assignment out of *WileyPLUS* with every chapter. Usually, anything interactive; anything with animation is an assignment. Then, I go in to see what percentage of assignments each student has completed.”

This tracking ability is particularly important in helping his distance learning students to better understand their progress (or lack thereof).

- “Sometimes, students say they don’t know why they’re not doing well,” Epps says. “With *WileyPLUS*, I can go in there and see that, for example, they’ve only done 35-45% of the activities I’ve assigned. No wonder they’re not doing well.”

**Improved student performance tied to WileyPLUS**

Epps has noticed overall improvement in student performance since employing *WileyPLUS* in his online class.

- “I have some of the highest grades this
semester than I’ve had in the past, and I’m going more and more into WileyPLUS to find more activities for my students to do. And—I’ve been able to tell—100% of those who have completed each assignment have done better in the course.”

Students have enjoyed using WileyPLUS in their online course as well. “The majority of my students think it’s great. It really has helped them to assimilate the information and to learn it,” Epps says. “I ask the students at the end of each semester to evaluate the course. I want them to tell me what they think. I ask them if the online WileyPLUS was beneficial to their understanding and learning the information. And everyone, almost without a doubt, has said yes.”

Works Cited


