

ENGAGING THE ADOLESCENT LEARNER

BY DOUGLAS FISHER AND NANCY FREY



Blended Learning

Mention "blended learning" in a professional development session and you're likely to get a variety of reactions and definitions.

Some will wear a puzzled look; others will have strong negative or positive responses. A debate might erupt about necessary elements and conditions. Is it the use of technology that defines it? Or is it the learning environment? The truth is that definitions of blended learning have been evolving for more than 20 years (Sharma, 2010). Other terms are sometimes used; *hybrid*, *distance*, or *online* learning are often comingled, further adding to the confusing brew.

The evolution of blended learning has its roots in the use of technology as a key element in traditional, face-to-face classroom instruction. However, true blended learning is not simply applying more technological tools to supplement brick-and-mortar learning environments. Rather, the intent is to blend classroom and digital environments, understanding that each offers its own advantages. These digital environments include both online learning and mobile technologies. In an earlier time, it was the technologies that dominated, and in fact the early leaders in the field had a strong educational technology background. As its use has become more widespread, curriculum developers and instructional leaders have joined the conversation.

Educators are leading the charge. Each year, more teachers are themselves participating in blended learning through teacher preparation and graduate programs. The collective experiences of teachers-as-learners are accelerating the use of in- and out-of-classroom digital environments. However, building a systematic and purposeful approach to blended learning is elusive. It is often left to the

technologically innovative teacher to provide these experiences. But without regular use, the skills built in one class are forgotten, and must be learned again in the future. In this column, we will discuss a purposeful approach to blended learning and share some of our experiences with it.

A Range of Blended Learning Options

Blended learning can be delivered in a variety of ways, and in fact it is this flexibility of delivery that can derail cohesive planning. We recommend a schoolwide approach to blended learning in order to ensure that there is a thoughtful scope and sequence. In the same way that other content areas such as mathematics, English, history, science, and the technical subjects are carefully planned across several years, so should blended learning. Accomplishing that requires understanding the range of options. Note how the responsibility systematically shifts to the learner, who

is required to become increasingly self-directed.

Classroom Instruction With Significant Required Online Components

This is perhaps the most commonly implemented aspect of blended learning at the college and career level. In fall 2010, more than six million college students were enrolled in at least one online course, an increase of 10% over the previous year, and far outstripping the overall college enrollment increase of 2% (Allen & Seaman, 2011). However, many college freshmen have little prior experience with participating in asynchronous learning environments. Of increasing importance is the need in each middle and high school course for substantive asynchronous online components (e.g., discussion boards, networking tools, wikis, and collaborative word processing tools). By doing so, students have numerous opportunities to build the necessary collaborative skills featured in the Common Core State Standards.



More recently, “flip teaching” has become a practice for a growing number of middle and high school teachers. Flip teaching describes the practice of using out-of-class time (typically reserved for homework) to introduce topics rather than practice recently taught ones. Teachers use short videos, either of themselves or prepared by others, to introduce new content and skills. Students watch these videos outside of the school day instead of doing traditional homework assignments. Face-to-face time in class is reserved for working with students to coach and scaffold, thus reducing lecture time and increasing interactions and active learning. In addition, teachers report that they have more time for differentiation because they don’t have to devote as much time to whole-class instruction. This is consistent with our research on the perils of assigning homework too early in the instructional process, resulting in students who either can’t or won’t complete it (Fisher, Lapp, & Frey, 2011).

Flip teaching has many applications. For instance, content teachers across the country have found that the short videos sponsored by the Khan Academy (www.khanacademy.org/) are ideal for providing preliminary instruction for complex topics such as derivatives in calculus, orbitals in chemistry, or the Bay of Pigs Invasion in U.S. history. More recently, TED has launched a new initiative called TED-ed. They have curated videos from a number of sources, including their own archives, and made them available to teachers and students. Although many of us have used TED videos for years, this newest innovation allows teachers to “flip” the video itself by customizing it to include questions, background information for students, and other supplementary material. The TED-ed website (<http://ed.ted.com/>) also houses flipped videos other teachers have created in order to build a growing library of resources for use by educators.



Mostly or Fully Online Curriculum in Lab

In this model, students make use of commercially available online course software. The high school where we work focuses on the health science professions. Students build necessary skills using an online course that complements the material they are learning in their face-to-face courses, especially anatomy, physiology, and medical terminology. These online experiences take place within the school in the computer lab, under the guidance of an assigned educator. Times are scheduled for the students, ensuring that they are regularly working on these self-paced tutorials. The purpose of this is to build necessary skills and habits for students who have limited experiences within a digital learning environment.

Learning at a Distance

Several states are following Alabama, Florida, Michigan, and Idaho’s lead by proposing that high school graduation requirements include completion of an online course. Students in these states are required to take at least one fully online course approved for course credit. (Beginning in fall 2012, entering ninth graders in Idaho were required to take two online courses.) In our school, this course will be assigned to 11th-grade

students to ensure that they are meeting graduation requirements. In 12th grade—provided that they are eligible to do so—students can propose a course enrollment based on personal interest. Eligible seniors will be guided to select from open courseware providers such as the Massachusetts Institute of Technology and Harvard University. Students will have the option of accessing support by completing courses on campus in the computer lab or from home.

Although these variations describe a range of learning environments through computers, we also know that other technologies and opportunities are available for blending face-to-face and digital learning. In the next section, we examine how the skills for blended learning can be built systematically so that students are able to engage in self-directed learning.

Learning the Necessary Skills for Blended Learning

The skills necessary for maximizing learning opportunities in digital environments can be further enhanced through face-to-face instruction. By

An Increasing Shift to Learner Responsibility

1. Classroom Instruction With Significant Online

Components—Face-to-face interaction occurs daily, allowing for lots of coaching and scaffolding.

2. Mostly or Fully Online in a Learning Lab—Presence in the school building means there is a potential for personal interactions; however, determining who is failing to progress may be delayed depending on frequency of report generation. Students new to this should generate reports for teacher review each session.

3. Learning at a Distance—Students complete coursework offsite, which means they can fall behind quickly due to procrastination. In order to prevent this, schedule regular meetings with students and develop a completion plan with each.

enhancing classroom experiences in a purposeful way using synchronous and asynchronous digital learning, students can deepen their knowledge of these.

Using Mobile Technologies as Part of Field Study Experiences

Middle and high school students regularly engage in field studies to enhance their classroom learning. The power of carefully planned field study experiences cannot be underestimated. Visiting a restored World War II battleship brings the dangers of naval warfare to life for world history students. English students reading *Anne Frank: The Diary of a Young Girl* (Frank & Mooyaart, 1993) understand her remarkable spirit in the face of adversity after a visit to a museum exhibit devoted to the Holocaust. But students need a means for chronicling their learning. As well, these field studies should connect to the content of many courses, not just one.

Mobile technologies can offer students many such opportunities, and they offer an important benefit: These devices are

in the pockets and backpacks of the majority of students. We create teams of students so they can collaborate, and it also eliminates any problems that can arise from students who do not have these devices. Importantly, we look for ways to connect these field studies to their courses:

- ◆ In mathematics, using Geometry Sketchpad to log coordinates (longitude and latitude) to plan field study excursions.
- ◆ In earth science, using GPS location services (e.g., Google Earth) to navigate during field study experiences.
- ◆ In integrated arts, taking photographs and geotagging them using geospatial metadata during the field study.
- ◆ In English, organizing these images for collaborative digital storytelling (i.e., VoiceThread) after the field study.

Geocaching, a kind of GPS treasure hunt, is useful when you want

students to explore a larger physical space. For example, middle school students attending the state fair used a geocache designed by their teachers to ensure that they visited farm animal competitions, the rock and mineral collection, interactive agriculture education stations, and an historical display of a Civil War encampment located in the area. Students collected small tokens at each geocache, and signed logbooks and commented on their experiences at each station.

Building the Online Toolkit

Further attention is devoted to using a broader range of online tools. Students use podcasts, screencasts, video production, and screen recorders routinely; in fact, they are typically adept with using tools. However, they are less sophisticated about the functions of these tools, especially in advancing their own cognitive and metacognitive skills (Frey, Fisher, & Gonzalez, 2010). One such area is online self- and peer-assessments, especially those that offer 360-degree reviews (this is an evaluation process used widely in the professional world that includes feedback from colleagues, supervisors, and self).

Opportunities for learning about and applying these tools are integrated into all face-to-face courses.

For example, ninth-grade English teacher Robin Atwater records each of her students' speeches and uploads them to her classroom wiki. Both she and the speaker view them separately and leave written comments. Next, each student is required to watch and comment on five speeches from other class periods (not the one they are enrolled in).

In advance of this video assignment, students are taught about 360-degree reviews, as well as the components of constructive and useful feedback. Once completed, they return to their own videos, read the comments, and

write a final self-assessment. "I assign [the five videos] so that every student has minimally one peer comment, as well as my assessment and their self-assessment," Ms. Atwater said. "I've been impressed with how insightful they are about their own performance, and how respectfully they comment on one another's." Ms. Atwater was inspired to do so after enrolling in a graduate course at the local university. "It was a blended learning course, and one of our requirements was peer- and self-assessments. It's built in to the e-platform the university uses. I never thought I would learn as much as I did from doing these 360-degree reviews."

Synchronous Learning Environments

Real-time technologies allow us greater access than ever before to information. However, it also means that decision making must occur much more rapidly, and this can strain the skills of adolescents. In order to strengthen these skills, students need additional experiences in using real-time data in a variety of settings. For instance, many secondary classrooms make use of real-time web/SMS audience response systems.

Audience response systems have rapidly evolved since their initial design as a dedicated use device. These have been replaced with web/SMS services that allow participants to use their smartphones, tablets, and computers to respond to questions using text messages, Twitter, and web browsers (e.g., Poll Everywhere).

In our high school, students not only participate in teacher-designed polls, but also design and analyze their own for use in their courses. For instance, students in mathematics courses learn how to use descriptive and inferential statistical tools to analyze survey data, while in English they read informational texts to learn about survey design. They design, implement, and analyze survey data related to health issues for their

health sciences courses (e.g., identifying exercise and nutrition habits for their healthy lifestyles course).

Many schools make use of guest speakers to enrich the learning of students. Our school regularly hosts power lunches. Each Friday, a content area team hosts an expert talk for students to attend during their lunch hour (e.g., the science department invited a hydrogeologist to discuss water quality; the mathematics department hosted one with an analytic engineer from Google.) These power lunches are well attended, often with more than 100 students in the room.

However, discussion can be difficult, especially if the guest speaker is not as adept at managing such events. We have begun using backchannel media technologies, an interactive video commenting system that allows for large-format public display. These backchannel media increase participation of attendees who might not otherwise be able to do so in such a large audience. A host teacher and several designated students are in charge of managing and facilitating these parallel digital conversations. Audience participants can pose questions via text messages from their smartphones. A student facilitator uses comments and questions from the audience to propel discussion and interaction with the speaker. "This has been really valuable for us because the guest speakers sometimes need assistance in managing the discussion, or in getting audience participation," says science teacher Greg Zacharias.

College- and Career-Ready Connections

The Common Core State Standards articulate a progression of skills and concepts that traverse the divide between K–12 education and post-secondary applications. But nowhere is this more urgently felt than at the high school level, particularly for upperclassmen who are

too aware of the coming transition to their post-secondary lives.

Beginning in their ninth grade year, students at our school develop a digital media display of information in the form of a personal website. They catalog their field studies and internship experiences, using blog postings for pre- and post-reflections. As students move into their junior year, these websites prove to be an excellent log of their academic and professional experiences. They convert this information to a variety of formats, including resumes and college applications. By 12th grade, students have amassed four years of academic

Valuing Functions Over Tools

Technology tools change rapidly—every week seems to bring a new gadget or service for classroom application. But keeping up with the tools can be daunting. Teachers may be intimidated with their students' dexterity with using these tools, but don't lose sight of its functions. What we are skilled at is teaching the functions of learning and communicating. Although the tools will change, the functions won't. All students need to know how to do the following:

- ◆ find information
- ◆ use information
- ◆ produce information
- ◆ share information (Frey, Fisher, & Gonzalez, 2010)

By foregrounding the function, we can make judgments about what tools best serve our students.

and professional experiences, including health internships, community college coursework, high school academics, work experiences, and community service. These websites are not static, and in fact represent the student as a young adult preparing for the world of college and career. These websites include a blog, digital resume, short videos of introduction, timelines, and other information appropriate for an audience of college recruiters and employers.

For a smaller number of students, there are opportunities for them to blend classroom learning with specialized web-based resources. Some mathematics students use content and social analytics to collect and analyze “big data” (e.g., web traffic, school data management, school-sponsored social media, etc.). The goal of these experiences is to use the science of analysis to mine large data systems in order to make predictions about future events, uncover trends, and develop operational plans. For example, cross-analyzing daily attendance data (with student info redacted) with school events could reveal the impact these have on attendance.

Developing a Schoolwide Approach to Blended Learning

In this column, we have discussed the basics of blended learning: what it is, how its environments vary, and how skills can be acquired through the use of innovative in- and out-of-classroom experiences. But having a definitional understanding is not enough. It is certainly inadequate to haphazardly adopt a few new tools that a few teachers use for a while. There are several essential elements to fostering a truly blended environment:

- ◆ *Blended learning means that some learning must occur outside of the classroom.* This is a big psychological

hurdle for some teachers to overcome, as they have grown accustomed to thinking of the learning environment only within the four walls of the classroom. Most would agree that history learning, for instance, doesn't only occur five days a week during second period. True history learning happens all around us. But a constrained learning environment subconsciously reinforces this mindset. After all, how are we going to get them to be lifelong learners, if we aren't doing anything to get them to be daylong learners?

- ◆ *Blended learning requires that students have the skills to be self-regulated.* It's not enough to say, “They aren't self-regulating, so we can't do it.” Skills have to be built, consciously and with purpose. In the same way that it would not be acceptable to say, “They can't do algebraic thinking, so we can't teach algebra,” we need to think similarly when it comes to self-regulation. If they can't currently do it, how will these skills be built? Self-regulation is every bit as important as the disciplines we teach. And the skills of self-regulation can be built within the classroom. But there needs to be a plan to do so.
- ◆ *Blended learning requires a progression.* Eighth graders should

not be doing the same thing as sixth graders. After the initial phase of introducing blended learning, when both students and teachers build their competence and confidence, there comes a time when a scope and sequence of blended learning experiences is needed. This is key to self-regulation as well. As students become more skilled, they should be challenged to apply those skills in increasingly challenging ways.

- ◆ *Blended learning requires a schoolwide approach.* There will always be individual teachers who are wondrously innovative and adventurous—thank goodness we all have them on our faculty. But without a mechanism for schoolwide discussions, planning, and curriculum development, these innovators exist in silos. We keep blended learning as a standing topic in all of our faculty meetings because we know that it requires a collective investment. That keeps the topic front and center in our discussions about other seemingly unrelated issues: our internship program, our health science courses, our community project efforts, even our attendance policies. By ensuring that blended learning is schoolwide, surprising connections are made.





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Additional Resources From IRA

- Gainer, J., & Lapp, D. (2010). *Literacy remix: Bridging adolescents' in and out of school literacies*. Newark, DE: International Reading Association.
- Although literacy instruction focusing primarily on print-based reading and writing is still vital for our students, it is insufficient given the multiple literacy demands of today's society. Thus, a remixing of "old" and "new" literacies is necessary to bridge students' inside and outside of school literacies. However, this may seem like a daunting demand for many of us who still wonder what exactly this looks like and how to acquire the needed background and skills. This book addresses ways in which in- and out-of-school digital literacies can be marshaled for learning.
- Grisham, D.L., & Wolsey, T.D. (2006). Recentering the middle school classroom as a vibrant learning community: Students, literacy, and technology intersect. *Journal of Adolescent & Adult Literacy*, 49(8), 648–660.
- This article proposes that middle school students can use asynchronous online discussions to improve their responses to literature, increase their engagement with the classroom community, and recenter the classroom around student voices. The authors examined online transcripts, interviewed students, and observed lesson sequences in eighth-grade humanities classrooms over three years. They found that threaded discussions helped these middle school students to engage with and learn new literacies, examine literature through a more critical lens, and socially construct knowledge to create a more authentic community of learners. The authors also found that the role of the teacher is transformed by technology to scaffold instruction through participation in online conversations.
- Sternberg, B.J., Kaplan, K.A., & Borck, J.E. (2007). Enhancing adolescent literacy achievement through integration of technology in the classroom. *Reading Research Quarterly*, 42(3), 416–420.
- Seven areas that require research for enhancing adolescent literacy achievement through the integration of technology across all content areas are outlined. There is a need for research in state-offered virtual courses and delivery systems, communication tools, artificial intelligence, word processors, new literacies practices, professional development, and technology for parents.

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