

*Chapter*

## **Blended *Online Learning*: Benefits, Challenges, and Misconceptions**

*Peter J. Fadde\* and Phu Vu*  
Southern Illinois University Carbondale

### **ABSTRACT**

Blended online learning is an emerging variation of blended learning. Whereas blended learning enhances face-to-face classroom instruction by adding asynchronous online instruction via a learning management system, blended online learning adds synchronous online learning via web conferencing to enhance otherwise asynchronous online courses. Blended online learning can potentially attract seasoned faculty to online instruction because of the similarities of web conferencing to traditional face-to-face instruction. Adding synchronous sessions can also enhance learners' sense of community in online courses. However, blended online learning can be criticized as undermining the "my time, my place" convenience that has drawn many learners to online instruction. It also requires appropriate software, training, and technical support. The challenge in developing blended online learning courses is to find a combination of synchronous and asynchronous activities that leverage the technology affordances of each mode, are within the capabilities of instructors, and satisfy the preferences of learners.

**Keywords:** Blended Learning, Blended Online Learning, Synchronous Learning, Live Virtual Classroom

### **INTRODUCTION**

With enrollments in online courses continuing to grow at around ten percent per year and 69 percent of colleges projecting online instruction as vital to long range plans (Allen & Seaman, 2013), higher education administrators have ample incentive to increase online instruction's footprint. However, enticing seasoned instructors who have not yet pursued online instruction provides challenges. While over three-quarters of chief academic officers believe that online instruction is "as good or better" than face-to-face instruction, less than a third of those same administrators believe faculty at their schools accept the value and legitimacy of online education (Allen & Seaman, 2013). In addition to common concerns

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\* 625 Wham Drive, MailCode 4610, Department of Curriculum & Instruction, Carbondale, IL 62901  
fadde@siu.edu

about intellectual property, workload, and tenure, many faculty also cite pedagogical concerns with online learning such as lack of interpersonal interaction with learners and needing a different instructional skill set (Green, Alejandro, & Brown, 2009; Lloyd, Byrne, & McCoy, 2012). Blended learning (BL) that combines traditional face-to-face classroom instruction (F2F) with online instruction—typically using a learning management system (LMS)—is one way to address a number of the concerns some faculty have with online learning. BL offers a familiar learning experience for instructors and learners who desire both the convenience of asynchronous online learning and the personal contact of the classroom (Lloyd et al., 2012).

This chapter introduces an emerging version of BL called blended *online* learning (Power, 2008) that also has the potential to address faculty concerns with the quality of online learning, and thereby to increase the number of instructors designing and developing online courses. Rather than combining face-to-face classroom instruction and asynchronous online instruction, as blended learning does, blended online learning (BOL) is totally online, mixing “asynchronous online learning” using a learning management system with “synchronous online learning” using web conferencing applications (e.g., *Adobe Connect*, *WebEx*, *WizIQ*). Web conferencing applications used for “synchronous online learning” go by a variety of names including electronic meeting, web conferencing, e-conferencing, and desktop videoconferencing. In this chapter, we use the term *live virtual classroom* (LVC). The following equations should also help illustrate the differences between blended learning and blended online learning:

$$\begin{aligned} \mathbf{BL} &= \mathbf{F2F} + \mathbf{LMS} \text{ (Blended Learning = Face-to-Face + Learning Management System)} \\ \mathbf{BOL} &= \mathbf{LMS} + \mathbf{LVC} \text{ (Blended Online Learning = LMS + Live Virtual Classroom)} \end{aligned}$$

In the following chapter, we highlight the benefits and challenges of BOL, as it arguably is emerging as a new form of online learning. We begin by comparing and contrasting BL and BOL along with the component LMS and LVC environments. We then discuss the benefits and challenges of BOL for different types of instructors—that is, those who have no experience with online instruction, those who are experienced blending F2F and LMS instruction (the most common type of BL), and also instructors who are experienced in LMS-based asynchronous online instruction. We conclude by illustrating how BOL can potentially add to both the quantity of online instruction, by attracting more instructors, and also the quality of online instruction by offering online instructors a choice of delivery modes with affordances that can be matched with pedagogical strategies, institutional goals, and the preferences of instructors and learners. We contend that BOL can potentially enhance LMS-based instruction in ways that maintain the benefits of LMS while using the unique features of LVC to address long-standing challenges of asynchronous instruction. We also consider that blended online learning, and LVC in particular, are unfamiliar to most instructors and so administrators should provide instructors with integrated online instruction platforms, appropriate training, and technical support in conducting LVC meetings.

## MODES OF ONLINE AND BLENDED LEARNING

Although our primary interest is BOL, it helps frame our discussion to identify key strengths and weakness of not only BL and BOL but also of the asynchronous and synchronous components of each delivery mode. We consider strengths and weaknesses of

these components in relation to David Merrill's eLearning dimensions of effectiveness, efficiency, and engagement (Merrill, 2009).

Table 1  
Perceived Strengths and Weaknesses of Online and Blended Learning Modes

<b>Delivery Mode</b>	<b>Strengths</b>	<b>Weaknesses</b>
<b>Asynchronous (LMS)</b>	<ul style="list-style-type: none"> <li>• Learner access independent of Time and Place</li> <li>• Organization of content</li> <li>• Critical thinking in discussion forums (High efficiency)</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of spontaneous interaction</li> <li>• Lack of immediate feedback (Low engagement)</li> </ul>
<b>Synchronous (LVC)</b>	<ul style="list-style-type: none"> <li>• Learner access independent of place</li> <li>• Some F2F presence (audio and video)</li> <li>• Permanence (can be recorded)</li> <li>• Classroom-type technology (Higher engagement than LMS, lower than F2F)</li> </ul>	<ul style="list-style-type: none"> <li>• Requires meeting at same time</li> <li>• Depends on learners' installed base of computer equipment and connection</li> <li>• Requires skill to run meetings (Lower efficiency vs. LMS, higher efficiency vs. F2F)</li> </ul>
<b>Blended learning (F2F + LMS)</b>	<ul style="list-style-type: none"> <li>• Learner access partially independent of time and place</li> <li>• Technology aids to support live meetings</li> <li>• F2F allows for personal responses and relations (High engagement, high effectiveness)</li> </ul>	<ul style="list-style-type: none"> <li>• Can lead to excessive work for learners and instructor</li> <li>• Still requires on-campus participation (Low efficiency)</li> </ul>
<b>Blended online learning (LMS + LVC)</b>	<ul style="list-style-type: none"> <li>• Learner access independent of place</li> <li>• Adds presence vs. LMS</li> <li>• Spontaneous thinking in LVC</li> <li>• Critical thinking on LMS discussion forums (More engaging than LMS)</li> </ul>	<ul style="list-style-type: none"> <li>• Partially dependent on time</li> <li>• Susceptible to technical difficulties</li> <li>• Needs an event producer</li> <li>• May reinforce direct instruction methods (Less efficient than LMS)</li> </ul>

### **Asynchronous (LMS) Online Instruction**

Online learning can take different forms in higher education, public education, and corporate or institutional training contexts. However, what we refer to as asynchronous LMS-based online learning is the popular form of online learning—especially in higher education—that is instructor led and tied to a set schedule such as a college semester (Lowenthal, Wilson, & Parrish, 2009).

**Benefits.** LMS-based online learning has a number of strengths. Chief among these is convenience for learners in having a high degree of control over when and where they engage with course materials and activities. Another strength of LMS-based instruction, for instructors as well as learners, is highly structured, efficient, and secure management of assignments and grades. A third strength of LMS-based instruction is the learner-centered critical thinking that can be generated in properly structured LMS discussion boards (Hew, Cheung, & Ng, 2010).

**Challenges.** Asynchronous LMS-based instruction also displays some weaknesses. Attrition is often perceived as an issue and sometimes is attributed, at least in part, to lack of social and personal engagement (Liu, Magjuka, Bonk, & Lee, 2007). LMS-based instruction is not incapable of generating social presence. Indeed, innovative online instructors have developed many creative ways of using LMS discussion boards to cultivate interaction and sense of community in potentially impersonal LMS-based learning environments (Comer & Lenaghan, 2012; York & Richardson, 2012). However, they are working uphill to overcome the “difficulties inherent in building a learning community in an online environment” (Shackelford & Maxwell, 2012, p. 249).

Instructors in asynchronous online environments are also challenged to delivery content in the familiar classroom format of lecture supported by *PowerPoint* slides and writing or drawing on a blackboard or white board. Many experienced online instructors use tools such as video and screencasting (e.g., *Camtasia*) to pre-record lectures for asynchronous viewing (Frank, 2008). However, faculty who cite the need to learn new pedagogies as a barrier to adopting online instruction (Lloyd et al., 2012) may find pre-recording lectures to be uncomfortable or unsatisfying because of the lack of immediate feedback from learners.

**Misconceptions.** A potential misconception about asynchronous online learning is that it is not as effective as F2F instruction, a perception that has lessened according to the 2013 Sloan Consortium report *Changing Course: 10 Years of Tracking Online Education in the United States*. The percentage of academic leaders surveyed by Sloan who consider online learning to be “as good or better” than traditional F2F instruction increased to 77 percent in 2013 from 57 percent in 2003 (Allen & Seaman, 2013). A U.S. Department of Education meta-analysis of empirical studies also found a small but significant advantage for online instruction over traditional F2F instruction (Means, Toyama, Murphy, Bakia, & Jones, 2010).

**Bottom line.** In terms of Merrill’s e3 dimensions of e-learning, asynchronous online instruction is very high in the dimension of instructional efficiency, is at least equal to F2F in the dimension of instructional effectiveness, but is challenged in the dimension of learner and instructor engagement.

### **Synchronous (LVC) Online Instruction**

Synchronous online learning involves instructor and learners being online together and at the same time, although not all in the same place. Although other modes of synchronous online learning such as educational television and videoconferencing remain viable the

synchronous online learning that we refer to uses a web conferencing application such as *WebEx*, *GoToMeeting*, or *Adobe Connect*<sup>1</sup>. We adopt the term Live Virtual Classroom to refer to educational uses of web conferencing applications (Driscoll & Carliner, 2005). LVC class sessions using web conferencing applications typically include numerous features that enhance communication and instruction: live video or audio of instructor and learners, presentation media (e.g., *PowerPoint* slides), screen sharing (e.g., software demonstration), whiteboard display, text-based chatting, polling of participants, breakout rooms for small-group interaction, and session recording for viewing by learners unable to attend the “live” LVC meeting or for review by those who did attend. Figure 1 depicts a graduate class meeting in *Adobe Connect* that shows several LVC communication and instruction features.

The screenshot displays the Adobe Connect interface with three main panels:

- Notes:** A list of agenda items for June 25, 2013, including 'Housekeeping', 'Discussion - Favorite FT4T (weekly)', 'Julie Patrick visit (H.S. English, Johnson City)', 'Cool Tools Profile notes - 4Cs', 'CI-482 tool?' (with sub-items 'Google Drive (Core Tool)', 'Diigo', 'Twitter', 'Jing (screencast)'), 'Teacher Blog Profile', 'Chapter 1 (plus 2, 5)', 'Professional Development / Community of Practice', 'LinkedIn Groups?', 'Student Projects', and 'Synchronous Online (Live Virtual Classroom)'. A final item is 'Discussion - LVC / LMS'.
- Chat (Everyone):** A text-based chat window showing a conversation. Key messages include: 'Lindsey: Yes. Can you enable my webcam and mic? I have a question', 'Jenny: Please record Mr. Fadde', 'Meredith: I cannot hear anything...anybody else? Maybe my internet being slow', 'Jenny: Meredith, I can hear.', 'Ahikpa: GOOD REMINDER .Record please', 'Meredith: It just keeps cutting out...maybe I will try another computer', 'Tarnisha: sound isgOpKmy', 'Lindsey: Do I have microphone??', 'JuliePatrick: Ready for webcam... I think.', 'Tarnisha: please enable my webcam', 'Jenny: I am having trouble muting my microphone.', 'Jenny: I'm clicking on the arrow and selecting mute my mic, but its not working', 'Jenny: thanks', 'Kat: my connection has been really bad lately, I don't know if I am able to stay on or talk through mic', 'Meredith2: Kat I have been having issues too', and 'JuliePatrick: Encyclopedia of Me (multi-genre writing project)http://www.phs.d211.org/english/krausejm/gold\_star\_entries.htm Best YouTube Channels for Teachershttp://www.fractuslearning.com/2013/06/14/youtube-for-teachers/ Misspelled Word Gamehttp://dictionary.reference.com/fun/misspell Check out TedED Lessons Worth Sharing My Bloghttp://juliebethpatrick.blogspot.com/ My School Websitehttp://mispatrik.tripod.com/ Great Resource- Just search your topichttp://www.fretech4teachers.com/
- Video:** A grid of video thumbnails for participants. Visible names include Peter F., Tammy, Jenny, Dorot., Lindsey, Andrea, Ahikpa, and JuliePa... Below the video grid is an 'Attendees (11)' list categorized into 'Hosts (1)' (Peter Fadde), 'Presenters (0)', and 'Participants (10)' (Ahikpa, Andrea, Dorothy Schachel, Jenny, JuliePatrick, Kat, Lindsey, Meredith, Meredith2, Tammy).

Figure 1. Screenshot of *Adobe Connect* LVC class session.

LVC has a direct precursor in the videoconferencing that has been used in distance education for decades. While LVC and videoconferencing share many attributes, there are also critical differences. Video conference-based courses in higher education are typically narrowcast from dedicated “studio” classrooms or conference rooms that are wired for sound, video, and document sharing (Grant & Cheon, 2007). Videoconference-based classes often involve a technical director switching between cameras covering instructor, learners, and documents, balancing multiple microphone inputs, and assuring connectivity to and from the originating site to remote sites.

While videoconferencing is essentially an institutionally-supported instructional delivery mode, LVC has evolved from ad hoc tools to integrated learning platforms. A few innovative online instructors in the late 1990s and early 2000s, began to experiment with small-scale

<sup>1</sup> We use commonly recognized brand names at various points to help clarify different types of delivery modes and technologies; no endorsement of brands is intended.

ways to integrate synchronous communication tools, such as instant messaging and discussion boards, in an ad hoc fashion into their online courses (Chen, Ko, & Kinshuk, 2005; Hrastiniski, 2008). Then, in the mid-2000s, researchers (e.g., Anderson et al., 2006; Shi & Morrow, 2006) began investigating uses of full-featured LVC applications such as *Wimba*, *Elluminate Live!* and *Macromedia Breeze* (now *Adobe Connect*). *Blackboard's* 2010 acquisition of *Wimba* and *Elluminate Live!*, later incorporated into *Blackboard Collaborate* (Nagel, 2010), represented an evolution of live virtual classroom environments from ad hoc web communication tools to online learning solutions that integrate LVC into existing LMS environments.

Table 2

*Evolution of Synchronous Online Tools*

Type of Solution	Solution Breadth	Tools Typically Used
Ad hoc	individual	IM/Chat, video chat (e.g., <i>Skype</i> )
Stand Alone	individual or institutional	LVC (e.g., <i>Adobe Connect</i> )
	institutional	Videoconferencing (e.g., <i>Polycom</i> )
Integrated	institutional	LMS + LVC (e.g., <i>Collaborate</i> )

**Benefits.** The primary benefit of LVC is that it can add presence to online learning by enabling live, spontaneous interaction between instructor and learners, and also among learners (Chen, Ko, & Kinshuk, 2005). In addition, web conferencing offers instructional features that are similar to modern classroom technology. Instructors who transition from technology-enabled classrooms to LVC class meetings find a version of such familiar instructional tools such as student response systems (clickers), which map to the LVC feature of polling, and lecture capture, which maps to the LVC feature of session recording. In particular, LVC offers instructors a way to conduct *PowerPoint* or white board supported lecturing with integrated questions and comments from learners.

**Challenges.** While LVC can approximate classroom instruction methods, conducting synchronous online learning sessions is a substantial challenge for instructors. First, materials must be properly uploaded in the LVC meeting room. Second, instructor webcam or microphone must be properly configured and tested. Third, learners who are participating through audio or video modes must have their microphones or webcams tested. Since web conferencing relies on the installed base of participants' own device (desktop, laptop, tablet, or smart phone), camera, microphone, and Internet connection, learners' technical configurations are likely to be different and susceptible to disruption (Gautreau et al., 2012). In addition to technical duties, LVC sessions may also include pedagogical duties such as keeping track of learners' comments or questions in the text chat box, watching for digital raised hands, conducting polls, and forming learners into small group breakout rooms (Anderson et al., 2006).

**Misconceptions.** In contrast to institutionally supported videoconferencing, LVC web conferencing can be perceived of as an "easy to operate" personal computer technology, a misconception that can leave instructors without training, event producers, or other recommended support for conducting synchronous class meetings (Shi & Morrow, 2006). Administrators, instructors, and learners who are familiar with videoconferencing services

supported by on-campus instructional support centers may expect a “turn key” level of support that is not likely to be in place with LVC emerging as an online instruction option.

**Bottom line.** Returning to Merrill’s e3 (effective, efficient, engaging) dimensions for assessing e-learning LVC, as a stand-alone delivery mode, is potentially high in engagement but is low in efficiency compared to LMS-based instruction. The effectiveness of various instructional activities delivered via LVC, in comparison to F2F or LMS, has not yet been systematically investigated.

## Blended Learning

Blended learning is not precisely defined (Graham, 2006) but we refer to individual courses that blend on-campus F2F meetings with LMS-based asynchronous online instructional activities.

**Benefits.** A few universities, notably University of Central Florida and University of Wisconsin-Milwaukee, have strategically developed blended learning as a way to increase enrollments by reducing the number of on-campus meetings and thereby making it feasible for more learners to take college classes (Graham, Woodfield, & Harrison, 2013; Moskal, Dziuban, & Hartman, 2013). More commonly, however, blended learning has been adopted without administrative direction by individual instructors who seek to take advantage of LMS capabilities to distribute course materials, manage grading and assignments, and conduct asynchronous discussions (McGee & Reis, 2012).

LMS-based discussion boards, in particular, have been developed and investigated by instructors and researchers for at least 15 year, generating a substantial body of best-practices and empirically-based recommendations for cultivating critical thinking (Comer & Lenaghan, 2012). While much of the research on discussion boards is in the context of asynchronous online courses, the same benefits may apply in blended learning approaches in which learners in on-campus courses are assigned to participate in asynchronous online discussions between F2F class meetings (Graham, 2006).

**Challenges.** Unfortunately, details of which LMS features are used in blended learning courses are not available. The definition of blended learning used by Sloan Consortium to track developments in online education reflects this when it defines blended learning as being 30 to 79% online (Allen & Seaman, 2013). While the Sloan survey notes that blended learning typically uses online discussions and typically has reduced number of face-to-face meetings (Allen & Seaman, 2013), these criteria are not formalized and the undifferentiated construct of blended learning joins the undifferentiated construct of online learning in confounding both researchers and practitioners (Lowenthal et al., 2009) seeking to identify critical features and strategies. Despite the lack of definitional precision, however, blended learning appears to be more effective than either F2F or online learning alone (Means et al., 2010).

While blended learning can potentially be more effective than F2F alone and more engaging than online alone, the efficiency of BL can be hurt by a tendency to simply add asynchronous LMS activities to on-campus courses rather than intentionally re-design courses when they become blended (Means et al., 2010). Indeed, blending often increases workload for both instructors and learners; the course-and-a-half phenomenon reflects what many learners dislike about blended courses... too much work (Hartnett, 2009, as cited in McGee & Reis, 2012, p.11). On the other hand, one of the traits of successful online educators is that

they spend more time than do less successful online educators in the design and delivery of their courses (Vu & Fadde, 2012).

**Misconceptions.** Those who advocate for institutionally-supported blended learning approaches argue that blended learning allows more learners to be enrolled in on-campus classes without substantially increasing on-campus facilities (Graham et al., 2013; Moskal et al., 2013). Although more of a limitation than a misconception, enthusiasm for blended learning as a path to increased enrollment should be tempered by acknowledging that BL still requires learners to attend some class sessions on-campus and therefore does not extend access beyond geographically local learners.

**Bottom line.** In terms of the e3 dimensions of e-learning, blended learning is primarily intended to increase the effectiveness of F2F courses by adding LMS elements. Although adding LMS to F2F courses can improve the management of assignments and grades, it is ultimately less efficient than F2F alone when LMS activities such as asynchronous discussion are also added. In comparison to asynchronous online courses, blended learning courses increase engagement by adding live class meetings although, again, at a cost to instructional efficiency.

### **Blended Online Learning**

Blended online learning is an emerging delivery mode that combines LMS and LVC in the context of a fully online course. It is similar to blended learning's combining of synchronous and asynchronous activities, but in the reverse direction. That is, instead of adding asynchronous LMS activities to the dominant synchronous F2F delivery mode, BOL adds synchronous LVC activities to the dominant asynchronous LMS mode.

**Benefits.** At best, BOL can help instructors leverage the benefits of the component elements (LMS, LVC, BL) while addressing the challenges of each. Adding synchronous LVC meetings can address challenges that LMS-based instruction faces in cultivating sense of community and providing learners with immediate feedback. In addition, instructors who have previously resisted online instruction on the basis of having to learn new pedagogical strategies may be more comfortable adapting their *PowerPoint* or blackboard/whiteboard supported lecture styles to the LVC environment. BOL can potentially address these limitations of LMS for both learners and instructors, while maintaining LMS benefits in managing assignments and grades as well as cultivating the critical thinking associated with asynchronous discussion.

Adding LVC meetings to an otherwise asynchronous online course not only address limitations of LMS but also addresses limitations of LVC as a stand-alone delivery mode. LVC sessions within a BOL delivery mode are not responsible for the total instructional effort, as are videoconference-based courses. Therefore, LVC activities in a BOL context can be scaled to the technical support, instructional goals, and comfort level of instructors and learners. Indeed, two of the commonly cited principles of successful LVC activities are that they not be made compulsory and that they not present critical content that is not available elsewhere (Karman, Aydemir, Kuçuk, & Yildir, 2013).

BOL also gains some of the benefits associated with blended learning while addressing the major challenge of BL, which is that BL still requires learners to be on campus for some class sessions while BOL is entirely online. As with blended learning, BOL can potentially increase the engagement and effectiveness of the "host" delivery mode (F2F for BL, LMS for BOL), although at a cost in instructional efficiency for both instructors and learners.



**Challenges.** The challenge for instructors is to decide which instructional activities are enhanced by synchronous interaction, and can also be executed “live” within the resources and constraints available to the instructor. The challenge for administrators, then, is to provide instructors with appropriate products, pedagogical training, and technical support to effectively, efficiently, and engagingly blend LVC and LMS activities in fully online courses.

The benefits and challenges of BOL vary depending on the level of an instructor’s experience and attitudes toward online instruction. Table 3 shows benefits and challenges in relation to three types of instructors: Those who have not participated in online instruction because of concerns with quality or pedagogical unfamiliarity, those who have experience with blended (F2F + LMS) environments, and those who have substantial experience with LMS-based online instruction.

Table 3

*Benefits and Challenges of BOL Based on Instructors’ Prior Experience*

Prior Experience	Benefits of BOL	Challenges of BOL
No Experience with Online Instruction	<ul style="list-style-type: none"> <li>• Introduction to online</li> <li>• LVC similar to technology enabled classroom</li> </ul>	<ul style="list-style-type: none"> <li>• Few models and examples</li> <li>• Requires technical and instructional support</li> </ul>
Experience with BL (F2F + LMS)	<ul style="list-style-type: none"> <li>• Smooth transition to BOL</li> <li>• BL pedagogy in place</li> </ul>	<ul style="list-style-type: none"> <li>• F2F classroom activities may not translate directly to LVC</li> </ul>
Online Experience (LMS only)	<ul style="list-style-type: none"> <li>• Enhance LMS (increase engagement)</li> </ul>	<ul style="list-style-type: none"> <li>• Established LMS pedagogy in place, LVC disrupts</li> </ul>

Some instructors who have not previously ventured into online instruction may find LVC to be a more natural translation of classroom activities and methods. In particular, lecture and discussion activities commonly used by instructors in higher education can potentially be translated quite directly from F2F to LVC contexts. It may seem counter-intuitive for faculty developers<sup>2</sup> to present potential online instructors with not one (LMS) but two (LMS and LVC) online delivery modes. However, having multiple delivery modes can enable instructors, with guidance from a faculty developer, to avoid feeling like they need to learn new instructional methods for asynchronous online instruction.

**Misconceptions.** Experienced online instructors who have largely mastered the challenges of LMS-based instruction and learning are likely to resist adding LVC sessions to LMS-based courses. Consider this exchange in a *LinkedIn* E-Learning Professionals’ discussion forum when a member asked, “Could adding synchronous sessions increase the engagement of online learners and improve retention?”

<sup>2</sup> We use the term *faculty developer* to refer to instructional designers in higher education contexts whose duties include consulting with and assisting instructors in designing and delivering online courses.

*Hank:* I have led and been part of dozens of courses where there was no "live" interaction at all. Making all the students be in one place at one time, even in cyberspace, largely destroys the advantage of online education, which is learning when the student has the spare moment.

*John:* First, IMHO, doing anything "live" goes against the major benefits of asynchronous online learning.

*Margaret:* I'm also confused by the perceived need for synchronous learning activities in an async class. Most of my students are taking the online course not because they want the online experience, but because their schedules are crazy.

The objections of these experienced online instructors can be addressed through approaches to BOL in which LVC sessions are non-compulsory and are recorded for asynchronous viewing by learners who are not able to "attend" live online LVC sessions (Karman et al., 2013). As is common practice in managing LMS-based discussion (Rovai, 2003), some online instructors have reported managing participation behavior by awarding points based on both LVC and LMS participation (Vu & Fadde, 2013). Individual learners can then blend their own participation modes depending on their preferences for interaction modes and personal schedules.

**Bottom line.** In terms of the e3 dimensions of effectiveness, efficiency, engagement blended online learning offers ways of adding to the engagement dimension of otherwise asynchronous online learning, although at a considerable cost to instructional efficiency for learners and instructors. On the other hand, BOL that includes occasional LVC meetings is probably less engaging, but more efficient, than "traditional" blended learning that includes on-campus F2F meetings. Whether BOL enjoys the same advantages in learning effectiveness that are claimed for blended learning has not yet been systematically investigated.

### **Blended Online Learning: Research and Practice**

As BOL emerges, both academic studies and best-practice reports can be expected to further theorize and investigate particular BOL strategies. In the meantime, studies from the foundational area of blended learning and the related area of videoconferencing can provide theories, principles, and best practices. For example, Grant and Cheon (2007) conducted a study that compared desktop videoconferencing with audio conferencing. Without the level of technical support often associated with larger scale videoconferencing, the desktop videoconference equipment meant to be used in the study could not be made to work with learners' variable installed base of computer equipment and connectivity. Eventually, the researchers resorted to ad hoc tools for video transmission.

Within this technology stressed environment learners felt they learned better from the audio-only condition, in large part because they had to concentrate more and therefore limit their self-generated distractions while working on their personal computer. The study revealed a need to study the potentially critical issue of learner distraction during synchronous sessions in a BOL course.

Research that can inform BOL design choices investigates different ways of blending synchronous and asynchronous modes. For example, Gosmire, Morrison, and Van Osdel

(2009) compared different strategies for adding faster feedback and more instructor presence to both LMS and LVC discussion activities in a BOL course. They compared four conditions:

- 1) Asynchronous Discussion Board (ADB) by itself,
- 2) ADB + a teaching assistant reader responding to each ADB post,
- 3) ADB + Video chat (*Illuminate Live!*), and
- 4) ADB + teaching assistant reader + Video chat

Ultimately, the various conditions had no significant differences except that learners gave lower ratings to the conditions that included a teaching assistant reader of their posts.

Other examples of distinctly BOL research include a self-survey by a group of Turkish online educators with extensive BOL experience (Karman et al., 2013). The BOL instructors described using LMS for discussion and LVC for lecture, noting the value of the synchronous environment for adjusting their lectures in progress based on learner questions.

Skylar (2009) compared text-based asynchronous delivery of lecture notes with synchronous web conferencing lectures in alternative weeks of a BOL course. A substantial majority of learners said they would prefer to take an online course using web conferencing lectures. Learners reported that participating in LVC lectures increased their understanding, and that they performed better on weekly quizzes in weeks with LVC lecture—although analysis showed there were no significant differences in quiz performance when learners were in the asynchronous or synchronous lecture conditions.

Another source of LVC principles to inform practice and suggest further research is the similarity between LVC features and modern classroom technology. For instance, LVC polling can be used in the same way that instructors in large-enrollment classrooms rely on student response systems (clickers) to gauge learner understanding and increase learner involvement (Shi & Morrow, 2006). In other instances, an LVC feature reveals a unique affordance that can lead to a new or reconceptualized instructional strategy. For example, in a BOL graduate course in which learners attended class in an on-campus computer classroom or attended “live online” from their home or office computer using *Adobe Connect*, both the on-site and online learners used the text chat function extensively to ask questions and offer comments during the instructor’s *PowerPoint*-based lectures (Vu & Fadde, 2013). Fellow learners often responded in the chat box by answering a question or by adding with their own comment. In a synchronous communication activity that recalls pre-LVC studies of IM interactions (Hrastinski, 2008), learners carried on a spontaneous and on-task text chat discussion without interrupting the instructor’s lecture.

## CONCLUSION

Several findings reported in *Changing Course: Ten Years of Tracking Online Education in the United States* support the need to rethink online instruction. Since the first survey in 2002, the percentage of chief academic officers reporting that online learning is a critical component of their institution’s long-term strategy increased from less than 50 percent to almost 70 percent. Meanwhile, the online enrollment growth rate slowed to 9.3 percent in 2013, the lowest since the survey started. Although almost one-third of currently enrolled higher education learners have taken at least one college course online, the slowing growth rate suggests that there will be increasing competition for online learners (Allen & Seaman, 2013).

Institutions that wish to expand their online enrollments are faced with the need to improve both the quantity and quality of online courses. However, Sloan Consortium reports that only about 30 percent of chief academic officers believe that their faculty accepts the value and legitimacy of online instruction (Allen & Seaman, 2013). While there are many reasons why faculty resist designing and delivering online courses (Green et al., 2009; Lloyd et al., 2012), we maintain that the addition of Live Virtual Classroom meetings in the context of blended online learning may entice some resistant instructors—who may be among the most senior and esteemed faculty at an institution—to consider online instruction. The addition of LVC meetings can address resistant faculty members' concerns with inadequate learner involvement and their own discomfort with asynchronous online instruction methods. LVC meetings can provide spontaneous discussion among learners using audio, video, or text media. In addition, LVC can provide a familiar context in which to deliver *PowerPoint* and blackboard or whiteboard supported lectures.

Administrators must recognize that preparing and conducting LVC meetings can be technically and emotionally challenging for individual instructors since technical issues need to be resolved “live” during instruction. Ideally, instructors should be supplied with integrated LVC and LMS platforms, trained in the pedagogical choices to be made in blended online learning, and supported by a teaching or technical assistant who can help produce LVC sessions. LVC sessions that are a distinctly supplementary aspect of LMS-based online courses do not need to be as formal as a classroom presentation. Depending on the interests and resources of individual instructors, LVC sessions can be used to review and debrief assignments, provide an enthusiastic and spontaneous opening to discussions that can be continued as asynchronous online discussion, or simply to hold virtual office hours (Frank, 2008).

The bottom line is that the blending LVC meetings with otherwise asynchronous LMS-based activities has the potential to increase the effectiveness and especially the engagement of online learning—although at a cost to instructional efficiency that can be difficult for experienced online instructors and learners to accept. Still, the potential benefits of addressing long-standing challenges of online learning such as building sense of community justify instructors, faculty developers, and administrators exploring the emerging mode of blended online learning.

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