

Defining Blended Learning in the GDLN Context

Blended learning refers to an educational experience created cost-effectively using a mix of integrated distance learning technologies such as videoconferencing, e-learning, videos, and CD-ROM. Typically the blend will also include traditional face-to-face classroom activities, print resources, and a variety of instructional strategies such as action learning, participatory learning, interactivity, case studies, and more. (GDLN Toolkit 2005)

Rossett et al (2000) report that adding an ICT to the blend gives superior results. They note that in 2002 Harvard Business School faculty DeLacey and Leonard reported that students not only learned more when online sessions were added to traditional courses, but student interaction and satisfaction improved as well. Thomson and NETg released a 2003 white paper that reported speedier performance on real world tasks by people who learned through a blended strategy – faster than those studying through e-learning alone.

Distance learning, e-Learning and blended learning

Distance Learning is an umbrella term encompassing all learning that takes place at locations remote from the point of instruction. Distance learning may take the form of an instructor-led course delivered via satellite to multiple remote locations. For example, a course originating in Washington DC at the GDLN hub and attended by participants in six Asian countries or a course originating in a GDLN Center(DLC) and attended by participants at distance learning centers in four provinces of a particular country. Distance learning may also refer to training applications delivered via computer networks to participants or students at any network node. Web-based training is one distance learning method where the training application resides on a Web server while participants/students may take the training from any location that can access the server.

E-learning is also an umbrella term that covers all learning that takes place using electronic means such as the computer and employing the world-wide web (internet), or storage devices such as CD-ROMS or DVDs or multimedia. E-learning facilitates and enhances both formal and informal learning and knowledge sharing at any time, at any place, and at any pace and is considered to be a current and important form of distance learning.

The term E-learning covers computer-based training (CBT), web-based training (WBT), and Internet-based training (IBT), which describe the learning mode according to the technology used. CBT pre-dated WBT and has, itself, migrated to IBT.

Blended learning has become increasingly important and is closely related to distance learning and e-learning. In spite of the many attractive advantages of accessibility, flexibility, and cost savings of e-Learning, direct human contact, especially the physical face-to-face interaction is missed in the learning process. Putting learning materials online doesn't make learning happen

automatically. It is a big challenge to create good e-Learning courses, and develop relevant learning skills and culture. Many people and organizations returned to the face-to-face mode after experiencing frustrations with e-Learning.

With this background, one definition of blended learning is to combine the face-to-face mode with e-Learning. Another possibility is to blend ICT-based modes into face-to-face classroom learning (Mantyla, 2001). A broader definition of blended learning refers to the optimal mix of different delivery technology or modes (see the citation at the beginning of this paper). GDLN takes this approach to blending that can include face-to-face classroom (one place same time) teaching, multiple places at the same time or at different times, and pure e-learning that can take place anywhere at any time.

If the one-place-same-time traditional face-to-face classroom teaching fits at one end of the spectrum of the learning delivery mode, then pure e-Learning fits on the other end. Figure 1 reflects the spectrum of delivery modes in terms of time and space, and illustrates the relationship among distance learning, e-learning and blended learning.

Figure 1: Spectrum of Delivery Modes

One Place, Same time	Multiple Places, Same Time and Different Time	Anywhere, Anytime
Face-to-face Classroom Teaching	Distance Learning	Pure e-Learning
	Blended Learning	

The basic feature of a blend is that a number of ingredients are mixed together to give the desired result. Blended learning is not different for it is a mix of appropriate delivery techniques and technologies combined to enhance the ability of the learner to learn and to achieve the desired outcome of the learning experience. There are many definitions of ‘blended learning’ but the core idea remains constant. Blending is the means toward an end which is to have the learner effectively learn.

Synchronous, asynchronous and interactivity of technologies

In dealing with distance learning technology it is very important to understand the terms synchronous and asynchronous.

Synchronous refers to the fact that the teaching and learning activity is happening at the same time. In other words, it is happening in ‘real time’. In a traditional classroom, e.g., a teacher

delivers a mathematics lesson to a class of pupils; the interaction is taking place in real time. To simulate the classroom situation in distance learning, the technology should be synchronous. Videoconferencing is an example. In spite of being in different time zones and linked at different local times, all participants are connected to the VC at the same time and communicate in real time. Two other examples are the Internet chat and online instant message.

Asynchronous is the antonym of synchronous, indicating that the interaction is not live or in real time. A message is sent out at one time, a response is given later. Postal mail, email and online discussion forums are all examples of asynchronous communication.

Interactivity is another important feature of communication technology. It is described as one-way or two-way communication. One cannot ask a question or respond to an opinion in the case of radio or TV broadcasting as they are examples of one-way technology, especially when they are pre-recorded. But by integrating telephone and email with live audio or TV broadcasting, two-way communication can be achieved. Videoconferencing is a two-way communication technology. GDLN's VC facility has two-way audio and two-way video capacity so every center can be both a receiving and delivering site. There is other VC equipment available on the market at a much lower cost, which is designed to have one-way video and two-way audio. The center which sends out a video signal is the delivering site while the others are receiving sites.

Definitions of educational media and technology

The rapid development of Information Communication Technology has given rise to a lexicon of terminology that is commonly used by practitioners but sometimes not fully understood by users. It is important that those who request and those who design blended learning activities be familiar with the more commonly used ICT terms.

So far, the terms “media” and “technology” have been used without offering clear definitions. Bates and Poole (2003) argue that it is important and necessary to differentiate and define media and technology for effective teaching in education. According to them, “technologies are physical things. Of themselves, they do not communicate. Media, however, are means of communication. They require a source of information, a means of transmitting information (including symbol systems), and a receiver, that is, someone who is interested in, has access to, and knows how to interpret the communication” (p. 48).

Bates and Poole (2003) defined five primary educational media, which represent different clusters of symbol systems, or ways of mediating and interpreting knowledge:

- Direct face-to-face contact
- Text (including still graphics)
- (Analogue) audio
- (Analogue) video
- Digital multimedia

Technologies, on the other hand, are physical, mechanical or electronic capabilities that are used for symbol transmission and communication. Books, radio, television, cassettes, compact disks, and Websites are one-way broadcasting, or one-to-many technologies. They are good for information dissemination. Post office mail, telephone, videoconferencing, e-mail and e-discussion forums are examples of two-way technologies, which allow interactions such as question and answer, discussion and debate, feedback and collective work. Table 3 summarizes major technologies and media that can be used in blended learning in synchronous or asynchronous situations.

Table 3: Educational Media and Technology

MEDIA:	TECHNOLOGIES			
	<i>One-way Broadcast</i>		<i>Two-way Communication</i>	
	<i>Synchronous</i>	<i>Asynchronous</i>	<i>Synchronous</i>	<i>Asynchronous</i>
<i>F2F</i>	lecture	lecture notes	discussion, Q&A	
<i>Text</i>		books		mail
<i>Audio</i>	radio	Audio cassette	telephone, audio conference	
<i>Video</i>	TV	Video cassette	videoconference	
<i>Digital Multimedia</i>	Webcasting, audio, video streaming	Website, CD-ROM, DVDs	Online chat, instant message	Email, discussion forum

Adapted from: Bates and Poole (2003, p55).

Ingredients of GDLN blended learning

With a general understanding of blended learning it is possible to take a look at blended learning in the GDLN context by listing all the major ingredients for an optimal mix. This is not an exhaustive list, but covers the elements most often used in GDLN programs.

Synchronous physical mode (direct face-to-face live human contact)

- Instructor/teacher led classes, lectures and conferences (participants assemble in one place)
- Hands-on laboratory activities and workshops (participants assemble in one place)
- Field Trips (participants assemble in one place and move together)
- Local face-to-face activity in a distance learning program (participants gather at GDLN Centers, with a local facilitator at each site)

Synchronous virtual mode (two-way real time interactivity, seeing each other on screen)

- Video conferences (GDLN's main technology: participants gather at multiple learning centers in real time)
 - Audio link is always an option or backup to be integrated into a VC
- Video Streaming for maximum outreach and flexibility (also called Webcasting). Can be requested together with VC connection at extra cost
 - Other supplemental features include Instant Messaging or Chat (written form)

Self-paced asynchronous mode (not live)

- *Online* (need Internet connection)
 - Email (for communication and attached files of modest size)
 - Participating in an e-discussion forum (e.g. the d-groups at <http://www.dgroups.org/>)
 - Web searching, reading of information and knowledge, downloading files
 - Study an e-Learning course hosted by a website, or a Learning Management System (LMS), such as WebCT or VLE.
 - View tapes in "Video on Demand" (e.g., B-Span of WBI at <http://info.worldbank.org/etools/bspan/index.asp>)
 - Conduct/complete survey/test/assessment online
- *Off line* (this function is important when Internet connection is expensive or not always available)
 - Study an e-Learning course stored on a CD-ROM (e.g. the "Microfinance Distance Learning" course developed by the UNCDF, which is stored in a CD-ROM for self-study).
 - Study various content stored on CD-ROMs or DVD disk, including text, PowerPoint presentations, video clips, etc.

Source: Working Paper on "Effective Blended Learning for Development" by Charles Maguire and Jiping Zhang, forthcoming.