

BLENDED LEARNING

MANUAL A

FOREWORD

The international context of education is undergoing profound change, brought about by the emergence of information and communication technologies (ICT) and the use of constructivist pedagogical methods found in ICT and distance education (e-Learning). Distance education, as a form of knowledge dissemination, formerly practiced via postal correspondence, is now regenerating as a result of ICT use, in new forms of space and time abstraction and virtualization. Innovations in ICT for education resolutions have changed the teaching and learning processes in Higher Learning Institutions globally including Tanzania. Through the beginning of the 21st century, the education environments have witnessed the introduction of information technologies and new pedagogies. Specifically, the extensive use of internet technologies as well as the networked learning have made possible the design and use of new generation learning environments that are realistic, authentic, and engaging. In the effort to capitalize on the advantages of instructional delivery modalities and minimize the disadvantages, scholars have started to combine the most functional elements of the instruction in these learning environments and that are universally referred to as 'Blended Learning'

The KIUT blended learning manual has been developed based on the university's e-learning policy, KIUT ICT policy and TCU guidelines for Online and Blended Delivery Mode of Courses for University Institutions in Tanzania. The aim of this manual is to present an introduction to blended learning design, and to briefly take you the learner through the process of integrating technology into your learning and teaching practice. The University is committed to enhancing quality and flexible learning which have to be consistent with its strategic priorities, such as increased use of information and communication technologies in teaching and learning, flexible modes of learning and cost-effectiveness of courses and which lead the University towards the expedient realization of its Vision and Mission.

It is an undeniable fact that a good learning environment comprises is a true blend of learning content and interactions of various types, leading to authentic learning experiences. ICT and

related technologies have made it possible to provide a diverse range of learning resources and interactions that enhance student learning in both distance and campus contexts. Typically, a blended learning course will have components of both online and face-to-face teaching and the context will determine the proportion of the blend. This manual provides instructors with a framework for the design and development of courses with online and face-to-face components altogether intended to offer due flexibility for addressing different learner preferences

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ACKNOWLEDGEMENT

The accomplishment of this manual could not have been possible without the contribution of various individuals. I am deeply indebted to the work of the Committee that was appointed to undertake this task. In particular, I would like to thank the chairperson of the committee, Dr. John Soka (Deputy Director of the KIUT Institute of Open and Distance Learning) for his effective leadership of the committee. I am also indebted to the Deputy Committee Chairperson, Mr. Thomas Munde (Director of Information Communication Technology) who ensured that the tasks of the committee were smoothly discharged. I am also thankful for the great job and commitment shown by the other members of the committee, namely, Mr. Adam Matiko Charles, (IODL Programme Coordinator), Ms Eunice Jengo, (IODL ICT Coordinator) as well as the IODL Administrator, Ms. Wemi Kimosa. Further, I would like to thank the members of the Board of the Institute of Open and Distance Learning, the KIUT management, University Senate and member of the University Council, for their critical and helpful comments and feedbacks which were useful in improving the earlier draft of this manual. Whereas, it is not possible to mention each and every member who participated in accomplishing this task, I value the contributions made by each one of them.

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ABBREVIATIONS

CABLS	Complex Adaptive Blended Learning System
CIT	Community of Inquiry Theory
ICT	Information Communication Technology
IODL	Institute of Open and Distance Learning
KIUT	Kampala International University in Tanzania

TCU Tanzania Commission for Universities

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DEFINITIONS OF TERMS

Blended learning: For the same students studying the same topic in the same course, this implies combining traditional classroom teaching methods with online transmission and access to learning. It is a thoughtful blending of face-to-face and online learning experiences (Garrison & Vaughan, 2008). There are also blended programs, in which students take some courses in a traditional classroom setting and others entirely online.

Face-to-face learning: Learning that takes place in a classroom or practical area where a lecturer interacts with students on a daily basis according to a set schedule.

Online learning: Learning in which a student and an instructor communicate over the internet rather than in a real classroom setting.

Distance Learning: A type of learning that takes place over the internet and is not restricted by geographical boundaries. For students who have a family and/or are in places of employment, distance learning enables them to have a more flexible schedule in following a course.

Flexible delivery: Refers to how a student can vary, personalize, and choose the timing, pace, material, assessment scheme, and location (in both virtual and physical locations) of learning to meet his/her requirements while still fulfilling the targeted learning outcomes. The course and/or subject requirements will determine the degree of fluctuation pertaining.

Digital literacy: Refers to the ability to effectively search, analyze, choose, use, and create appropriate technology for lifelong learning in a critical and safe manner. In order to access knowledge of a topic, participate in learning activities, collaborate with peers, and complete assessment tasks, students need digital literacy to locate, engage, interact, create, share, and communicate using a variety of learning technologies. In today's learning environments, academic and technical support staff must be digitally literate in order to communicate, support, motivate, and inspire students.

Mode of delivery: Mechanism where a subject is presented internally, externally, or in a limited mode. Regardless of the delivery method, blended learning can and should be incorporated into every subject in a course.

CHAPTER ONE

Background Information

1.1 Introduction

This chapter is an introduction to blended learning: how it is defined, how it emerged, how it is being used and what it has to offer, as well as the challenges one is likely to encounter in the course of pursuing blended learning in the teaching profession and practice.

1.2 The Growth of Blended Learning

According to the United States Department of Education (Means, Toyama, Murphy, Bakia, & Jones, 2009), combining classroom and web-based teaching and learning provides students with wide access to diverse learning modes and methods for their enhanced skills and expertise as learners (Cleveland-Innes, 2017). Many studies on blended learning show that students' abilities to learn collaboratively, think creatively, study independently, and tailor their own learning experiences to meet their specific needs have improved.

For many years now, innovative educators have been developing new education delivery techniques by mixing components of in-person teaching with technology-enabled learning to bring remote people together. Blended learning started evolving in the late 1990s, when simple independent learning management systems first appeared in the education arena. There are now a plethora of combinations and permutations, but the process takes time to bloom.

While computers have become most people's daily companions since the early 2000s, education delivery systems have taken longer to catch up with emerging new practices. When it appeared as part of human engagement, technology started being used to supplement and complement the traditional teach-by-telling method. As computers and the internet revealed the ability to connect people in different places, as well as provide room for more interaction, pictures, and information, innovation grew, although in fragmented and uneven ways.

Soon after the user-friendly internet connectivity and browser development made it possible for everyone interested in learning to access a wider range of learning resources the number of learners worldwide increased rapidly. CD-ROM contents were phased out in favor of web-based learning. "Rather than distributing CD-ROMs to students, organizations found that they could simply upload material, eLearning exams, and assignments to the web, and students could access them with the click of the mouse" (Pappas, 2015b).

Education practitioners and scholars, on the other hand, did and still are challenging this assumption, knowing that learning competencies are not universal, as student abilities are significantly different from the skills needed to enable effective participation in social media, and broadband internet access to learning opportunities.

1.3 Meaning of Blended Learning

The mix of online and face-to-face learning is known as blended learning. Blended learning is the use of traditional classroom teaching methods in conjunction with online learning for the same students studying the same topic in the same course. It is a "thoughtful blend of face-to-face and online learning experiences," (Garrison & Vaughan, 2008). There are also blended education programs, in which students take some courses in a traditional classroom setting and other courses entirely online. By integrating the course delivery modalities, blended learning aims to provide the most efficient and effective education experiences possible.

Blended learning is also defined as a way of educating at a distance that combines traditional (or stand-up) education or training with technology (high-tech, such as television and the Internet, or low-tech, such as voice mail or conference calls). Blended learning, in other words, is used to describe the practice of offering instruction and learning experiences through a combination of face-to-face and technology-mediated learning processes. Students are not required to be physically present in one location for the technology-mediated components of these learning activities, but may be connected digitally through online communication.

Classroom instruction time can be substituted by online learning experiences, which can involve varied degrees of contacts or merely time alone in independent study and learning activities. In a good blended learning experience, both in-person and online learning content and activities are

integrated and work towards the same learning outcomes using the same information. The multiple learning experiences are synthesised, complimented, scheduled and organized to run concurrently.

1.4 Rationale – Why Blend?

Blended learning as the intentional application of technology to improve student learning processes and outcomes involves the intentional use of technology in the design of topics to improve instructors' and students' teaching and learning experiences respectively by enabling engagement in ways they could not use before. Students benefit from blended learning because it improves their learning, gives them opportunities for more access to material, improves their satisfaction and learning outcomes, and enables them to study alongside helping others to learn.

Blended learning is not about using technology simply because it is available and accessible; rather, it is about discovering better ways to promote student accomplishment of learning outcomes and provide them with the greatest possible learning and teaching experiences, as well as providing them opportunities to interact and or consult their instructors.

In summary therefore, blended learning design can:

1.4.1 Broaden the education space for course delivery and learning;

1.4.2 Support course and subject management (eg. communication, assessment, submission, marking and feedback);

1.4.3 Enables and supports the provision of educational information and resources to students;

1.4.4 Engage and motivate students through interactive and collaborative learning

1.4.5 Support face to face teaching, large and small group learning, self-directed learning, and communication with and between students

1.4.6 Promote virtual citizenship as learners practice the ability to project themselves socially and academically in an online community of inquiry. Digital learning skills are becoming essential for lifelong learning, and blended courses help learners to master knowledge and skills needed in using a variety of technologies.

1.4.7 Provide opportunity for collaboration at a distance: Individual students work together virtually in an intellectual endeavour as a new learning practice.

1.4.8 Increase flexibility in education access and delivery: Technology-enabled learning enables learning anytime and anywhere, lets students learn without the barriers of time and location but with the added possible support of in-person engagement.

1.4.9 Enhance learning: Additional types of learning activities improve engagement and can help students to achieve higher and more meaningful levels of learning and achievement.

1.5 Making Blended Learning Work

Blended learning is not only synonymous with technology integration in education. If online learning is merely a tiny component of a classroom-based course, it may not effectively contribute to a blended learning system but simply serves as a case of technology integration if it does not provide students with the independence, convenience, and interaction that online learning can and should provide.

Making the right decisions to conquer the hurdles that come with using modern technologies are key to creating an effective blended learning environment. According to Cleveland-Innes, Ostashewski, Mishra, Gauvreau, and Richardson (2017), the following issues should be considered while implementing a blended learning programme:

1.5.1 **Technology access**: This entails knowing which resources are available to students. The resources may include bandwidth, internet connectivity, and support devices such as laptops or smartphones

1.5.2 **Design:** Creating the appropriate in-person and online activities means designing courses with the befitting pedagogic principles of integrating technology in a way that supports meaningful learning.

1.5.3 **Safety and security**: Creating awareness of cyber-malice and ensuring security interventions against unethical learning practices, academic dishonesty, and identity of theft and incidences of bullying.

1.5.4 **Skill development**, **support and training**: Both students and instructors must be technologically literate and competent with the application of modern technologies in education,

1.5.5 **Motivation**: Students need adequate motivation when engaging in a wide range of often shifting learning modalities, some of which may require new skills development.

CHAPTER TWO

Theories Supporting Blended Learning

2.1 Introduction

The process of grounding practices and theories help in making better decisions when implementing blended learning and supporting learners more effectively to achieve meaningful learning. In this chapter, a review is made of two main theoretical frameworks that can be applied to enhance blended learning, then consider several models of blended learning and the pertaining technology integration.

2.2 Theories Supporting Blended Learning

It is impossible to include all blended learning models in this article. Wang, Han, and Yang (2015) present a comprehensive analysis of the main theoretical frameworks of blended learning. The Complex Adaptive Blended Learning System and the Community of Inquiry will be the focus of this chapter. These two frameworks provide a holistic approach to blended learning design and execution. They can be used in any segment of education, with adaptations made as needed according to the prevailing characteristics and expectations of the students.

2.2.1 The Complex Adaptive Blended Learning System (CABLS)

Figure 2.1 is a diagramatic presentation of the main components of the Complex Adaptive Blended Learning System, or CABLS framework. In this framework, the learner sits at the centre of the model from where all the other components impact each other. There are six elements in the system, each of which has its own sub-systems. These six elements are:

- a The learner
- b The teacher
- c The technology
- d The Content

e The learning support

f The institution

Each element has not only its own personality and subsystem, but also interacts with the other elements. The linkages are dynamic and integrative, as they should in any similar complex system. The relationships and consequences of each element functioning with and on the other elements give rise to what has come to be referred to as the adaptive blended learning system.



Figure 2.1 the CABLS Framework

Table 2.1 highlights of the six elements of the CABLS framework.

LEARNERS	Learners' roles vary or change as they interact with the system's elements for the first time or in emerging new ways. The most crucial factor is the well- documented shift from passive to active learning. This is critical for support and training enhancement of lifelong learners, which has been identified as the critical trait of the 21st-century learning principle.
INSTRUCTORS	Instructors' roles in blended learning environments are likewise new, and evolve in tandem with students as the two traits interact with and adapt to one another and with the other four factors of the system. The expectation is that instructors who operate and facilitate blended learning will adapt to pedagogies that are appropriate not only for blended learning but also for the learners who are prepared to participate in learning activities typical of the diverse 21st-century societies. The other emerging terms used to describe and identify these instructors are facilitators, mentors, advisers, and moderators.
CONTENT	Education subject matter continues to have a significant influence on how learning is delivered and acquired. Subject matter and its material elements used to engage learners in the process of promoting knowledge and understanding constitute educational content. Instructors and students can add to learning content before, during, and even after the completion of a course, thanks to the interactive, dynamic, and media-rich resources available online through blended learning. The interaction between the learner, the teacher, technology, learning assistance and support, and the institution has an impact on the selection and use of educational material. This complex interaction of various learning modes driven by different inputs provides opportunity for learners to engage in productive mastery of learning content.
TECHNOLOGY	In general, technology refers to any equipment and operational mechanism that contribute to increased human capacity to engage in tasks and to develop and apply ultra-modern means of doing things. Emerging technologies are usually evaluated for their effectiveness and contribution before they are adopted and adapted for use. Technological enhancement of

	learning necessitates new roles of both the learner and the instructor, demands new ways of accessing and engagement with knowledge. Many studies reports exist on the use of technology to enable and enhance learning in a variety of settings, and learner groups, with a wide range of encouraging outcomes. In the effort to determine more effective applications, problems,
	and consequences of technology for learning, further testing and research is required. Technology must be viewed and regarded as a critical component and contributor to the enhancement of blended learning system interacting productively with the other factors.
LEARNER SUPPORT	As part of their educational development, learners must be assisted to master each topic of a course and to become lifelong learners. Learner support emphasizes skills for the enablement of competent blended learners. Such support includes a system for troubleshooting, material access, help and feedback mechanisms for assignments and effective online communication between learners and their instructors and advisors. Online learning also provides room for independence and self regulation for lifelong learning. According to Wang et al. (2015), learner support, includes academic support which aims at assisting students to develop effective learning strategies, such as time management, collaborative learning skills, as well as their technical enablement for students to browse for and access new knowledge from diverse sources including electronic use of library resources worldwide
INSTITUTION	Blended learning necessitates institutional establishment of befitting digital janitors in technology infrastructures comparable with traditional classroom settings in brick-and-mortar institutions, desks, lighting, and other accessories. Institutional support is one of the key prerequisites of blended learning.

The CABLS framework provides a deeper and more accurate understanding of the dynamics and adaptive nature of blended learning (Wang et al., 2015, p. 390). This enables beneficiaries of

blended learning to think and embrace interaction between instructors, course materials, pertaining technologies in different settings of life, work and employment settings. The link between material, learners, and technology are overseen by course instructors.

2.2.2 The Community of Inquiry Theory (CIT)

Garrison, Anderson, and Archer established in 2000, a theoretical framework for structuring the learning process in an online or hybrid environment. The Community of Inquiry Theory (CTI), is an inquiry-based teaching and learning approach, based on John Dewey's work and constructivist perspective on experiential learning.

The CIT framework outlines the aspects that must be ensured in order to achieve deep and meaningful learning. The original paradigm describes the educational experience as a meeting of three factors: cognitive, teaching, and social. Such presence is described as a state of alert awareness, receptivity, and connectivity to the social, cognitive, emotional, and physical working of individuals and groups in the context of their learning settings in the application of this paradigm (adapted from Rodgers & Raider-Roth, 2006, p. 1).

As a learning process and a subject on learning to learn, inquiry-based teaching and learning is more vital today than ever before. Inquiry-based teaching and learning has its origins in the 1960s initiation of a new learning movement, during which the so-called "the me generation" was born. This alerts humanity that more active, self driven learning was inspired by educational pioneers such as John Dewey (1938) and Lev Vygotsky (1997), who considered individual experience and self creation of one's own knowledge structures, as critical to effective engagement in and learning outcomes. Learning through cognitive engagement, which is now known as inquirybased learning, in contrast to content-based learning, gives students more responsibility on how they build their own knowledge foundation. Inquiry-based learning is therefore, viewed as fundamental for developing self driven learning, higher-order thinking skills and material acquisition (Garrison, 2016). Inquiry-based learning is not limited to passive and hobbyist perusal of reading material but includes the whole process that necessitates and emphasizes meaningful and purposeful interaction with, the search for and embracing of complete education. As its ultimate goal, enquiry based learning aims at enablement of one's careful and effective engagement in symbolics in the use of speech, gestures and rhythms; basic skills in mathematics, empirics of the natural and physical world, esthetics of arts and music; synnoetics of personal knowledge and ethical and moral principles of living; synoptics of history, philosophy and the ultimate meaning of all things through religion and hence growing up as an educated person.

Making the learning process explicit is also a requirement of inquiry-based education. This teaching method, which builds on the work of Schwab (1966), provides for structure to guide students through active inquiry. According to Schwab, active inquiry process begins with learners engaging in and being required to identify correlations between concepts or variables through the use of questions, challenges, and material. As the students progress, they will be presented with questions or issues to solve, and they will be expected to figure out how to independently get answers to problems. A learning topic is provided in the third and final stage, where learners find questions, issues, approaches, and solutions as the instructor guides and promotes learning.

The CIT framework encourages guided inquiry by identifying educational activities and providing content and procedural direction for blended learning in theory and practice. Blended learning, using the CIT framework, gives possibilities for self-reflection, active cognitive processing, engagement, and peer-teaching, in keeping with the original three presences of the CIT framework, namely, social presence, cognitive presence, and teaching presence. Further, expert help from instructors at the appropriate and opportune time stimulates participation and shared application of knowledge, emphasizing the value of forming communities of inquiry in and beyond the classroom – whether through face-to-face, online, or mixed modes of learning acquisition.

With the support and guidance of universities and colleges, research continues to be conducted on communities of inquiry in blended learning and the pertaining pedagogical approaches. Over 4,000 times in the scholarly literature, the original Garrison, Anderson, and Archer (2000) article cites the outlines this concept. Much of the early research focused on social presence (Richardson & Swan, 2003) as a novel way of approaching education and on into and beyond pure transmission theories. There has also been a substantial amount of study done to determine the components of this framework and how they interact with each other (Arbaugh et al., 2008; Garrison, Cleveland-Innes & Fung, 2010).

The accuracy of the framework enables a more in-depth evaluation of cognitive presence. This is significant since none of the presences exist in isolation. The four separate but overlapping components of practical inquiry make up cognitive presence and trigger events, investigation, integration, and resolution. Deep and meaningful learning necessitates participation in all the four components. However, according to Akyol and Garrison (2011), cognitive presence necessitates a balance of cognitive, social, and teaching presence. Beyond explaining content, educators employing this approach must provide direct instruction and promotion of cognition. This backs up Archibald's (2010) assertion that teaching and social presence account for 69 percent of the variance in cognitive presence.

Teaching presence, rather than "teacher presence," refers to the ability of both instructors and students in a CIT to engage in the learning process. While the teacher or instructor takes the lead, teaching presence enables and encourages students to teach one another. Recent research emphasizes the role of teacher presence in creating positive learning experiences for students (Chakraborty & Nafukho, 2015; Morgan, 2011). It is, nevertheless, inextricably related to other presences. Emotional presence has been suggested in addition to these three types of presence (Cleveland-Innes & Campbell, 2012; Stenbom, Cleveland-Innes & Hrastinski, 2016). Emotional presence is defined as an individual's or group's outward manifestation of emotion, affect, and feeling as they relate to and engage with learning technology, course content, other students, and teachers in a community of inquiry. The tool of measuring the initial three presences was used to identify and examine the indicators for emotional presence (Arbaugh et. al, 2008). Exploratory factor analysis suggests that emotional presence may stand alone as a separate element in this framework (Cleveland-Innes, Ally, Wark & Fung, 2013).



Figure 2.2 the Community of Inquiry model

CHAPTER 3

Blended Learning Models and Types

3.1 Introduction

Blended learning is sometimes called *hybrid* or *mixed-mode learning*. This system of instructional design uses many types of teaching and learning experiences and varies in design and implementation across intructors, programmes and providing higher learning institutions. This section offers a more in-depth exploration of five blended learning models

3.2 Models of Blended Learning

3.2.1 Blended Presentation and Interaction Model

The fundamental component of this paradigm is typified by classroom interaction, which is supplemented by out-of-class, online exercises. The flipped classroom or flipped curriculum approach is a common example of this strategy. Students hear podcasts or other online resources before participating in classroom-based tutorials or seminars for indepth exploration of these resources in group or peer learning.

3.2.2 Blended Block Model

This approach, also known as programme flow model, involves structuring a series of activities, or "blocks," such as to include both face-to-face learning and online study, usually with pedagogical guidelines and practical limits in mind. For example, a course for geographically dispersed learners or working professionals might start with a block of intensive face-to-face sessions, followed by blocks of online study units with collaboration involving online tutorials, followed by another block of face-to-face learning or group presentations.

3.2.3 Fully Online

This model is fully ICT delivery online. It may still be considered blended when it incorporates both synchronous learning (for example, online tutorials) and asynchronous activities (for example, discussion forums). Thus, blended learning covers any of the following three situations:

- a Combining instructional modalities (or delivery media).
- b Combining instructional methods.
- c Combining online and face-to-face instruction.

Table 3.1 Three models of blended learning

MODEL 1	MODEL 2	MODEL 3
Blended presentation and	Blended block Combination	Fully online
interaction Activity-focused face-to-face sessions blended with online resources. For example, the flipped curriculum model which combines: short lecture podcasts, and online resources with face-to-face tutorial/seminars for interaction and presentation of	of: intensive face-to-face sessions lasting half or full one day weekly online tutorials/seminars for activities and interaction online content and resources	Combination of: short lecture podcasts complemented with online resources and learning activities online tutorials (synchronous) instructor-learner interaction via online collaboration, discussion forums and/or group work

Source: Hannon & Macken (2014)



Figure 3.1 Models of blended learning

3.3 Types of Blended Learning

This section offers a more in-depth exploration of five potential types of blending learning :

- a Discussion Boards
- b Online Instant Messaging/Chat Sessions
- c Podcasting
- d Rapid E-learning Software Tools
- e Web Conferencing

3.3.1 Discussion Boards

Discussion boards are an asynchronous communication medium in which a user (typically a teacher or instructor) asks a question or assigns a task, and students respond at a later time. Discussion boards provide learners with additional time to think about a topic or question before posting a message asynchronously. The boards can also assist instructors in keeping track of students' involvement and understanding in a class. Because discussion boards are asynchronous, learners may be tempted to postpone their involvement unless explicit expectations and standards for discussion board are set and used.

Discussion boards can help to promote informal interaction that often occurs during face-to-face training in blended learning programs, especially the online self-paced lessons. This informal

connection between students, as well as between students and the lecturer, enhances learning. Instructors can create a virtual space for this type of interaction among learners by keeping the tone of discussion boards conversational, resourceful and academically complementing and strengthening.

Best uses

- a Group discussions
- b Resource sharing
- c Posting class assignments

Benefits

a Offers free, easy access with internet connection,

b Can preserve discussions for later review or for new learners,

c Allows learners to access the discussion boards at a time convenient to their schedules,

d Provides learners with more time for reflection and creation of articulate responses,

e Provides interaction for learners and ability to pose questions to classmates and instructor,

f Can track and measure learner participation in discussions,

g Allows learners—on some message boards—to preview and edit their posts as well as to include attachments such as course assignments.

Challenges

a Time lapse between postings can slow the momentum of discussions and make it difficult for learners to receive immediate clarification of a question or comment,

b Commitment to monitoring discussions is required from instructors and learners,

c Many learners and instructors need initial training on best to use message boards,

d Participants are unable to observe facial expressions, voice tone or body language, which can cause misinterpretations,

e Instructors need to develop good facilitation and moderation skills to encourage effective participation by all learners.

Discussion board tools

In the effort to enable blended learning programs, a variety of high-cost to no-cost discussion board tools are available. There is a variety of board discussion software packages to choose from, but most libraries will find that these packages are more complex than they should be. Discussion board softwares are included in certain learning management systems. Most discussion board demands in blended learning programs can be fulfilled with free technologies like Google Groups.

Tips on the application of discussion boards

Demonstrate to learners how to use the discussion boards, preferably in-person, and follow up with individual learners who need additional assistance in getting started

Provide clear discussion board participation guidelines to learners, including instructor expectations, rules of conduct and examples of what constitutes adequate participation,

Begin by having the instructor post an introduction and share information about his or her background and personality; learners should be encouraged to do the same,

Acknowledge individual discussion and contributions by learners so that they feel heard

Focus the discussion by carefully preparing questions and or assignments in advance

Monitor the discussion or assign a monitor to keep learners focused on the topic

Monitor the quality and regularity of the postings, and if individual learners appear to not participate, or post messages that are off-topic or are not substantive, communicate with those learners privately,

Consider making the discussion board private or password protected so that learners feel free to share their thoughts and opinions with only their classmates.

Summarize the discussion before moving on to a new thread.

3.3.2 Online Instant Messaging/ Chat Sessions

Many students are used to sending informal and quickly produced messages to friends or coworkers via instant messaging (IM) or chats (e.g., AOL Instant Messenger, MSN Messenger, Yahoo, etc.). Defining the goals of chat sessions, providing a clear framework and ground rules for the sessions, and moderation of discussions are all necessary steps in successful incorporation of a chat into a blended learning program.

The instructor must always prepare for effective chat sessions. A chat is a synchronous technology in which all users are online at the same time and communicating frequently. While this makes it a very lively and fast-paced method of interaction, learners typically do not often have enough time to think about the themes of conversations. To counteract this, instructors can provide students with specific conversation topics or questions to think about before the chat session begins. Since chats are conducted in real time, instructors must establish clear procedures in advance to prevent students from wondering about a topic or all responding at the same time.

Many instructors are also finding that instant messaging can be an effective one-to-one tool for conducting virtual "office hours" and for providing more responsiveness to student requesting for additional help.

Best uses

- a Informal check-ins,
- b Small group discussions,
- c Set "office hours" for students to ask questions and seek instructor clarification on issues

Benefits

a Free, easy to access and simple for participants and facilitators to use,

b Offers room to preserve transcripts,

c Provides room for learners to ask questions and get immediate feedback in real time,

d Enables learners to develop a buddy list and to access other learners, to ask questions and to share understanding.

Challenges

- a Difficult to keep conversations focused,
- b Cannot facilitate body language, tone or facial expressions,
- c Difficult to know when someone has completed his or her response,
- d Delayed conversations due to heavy internet traffic,
- e Scheduling challenges,
- f Limited time for reflection on questions due to pacing of the chat

Online chat/IM tools

In considering the use of a multi-network IM program there are many competing IM networks for users, with AOL Instant Messenger SM, MSN Messenger and Yahoo! Instant Messenger as top on the list. A user of one network cannot communicate with someone on another network.

Trillian for Windows (www.trillian.cc) or Meebo (http://www.meebo.com)

Gaim (http://gaim.sourceforge.net) for other operating systems lets you operate on multiple networks simultaneously

AIM Express (www.aim.com/aimexpress.adp?aolp=0) because it does not require learners to download any software.

Tips on the application of online chat/IM

Determine your objectives for using a chat and set clear expectations for its use during the course,

Establish clear etiquette and security guidelines for the chat,

Monitor and facilitate the session to keep it focused on the topic and keep all learners engaged

Keep the number of participants small in order to enable meaningful dialogue.

Establish a protocol so that learners will know when someone has completed his or her message

(i.e., ask learners to add an asterisk [*] at the end of their sentences) or has a question or comment

(i.e., ask learners to indicate when they have a question or comment by entering "?" or "!").

Give every learner the floor during the chat.

Send prepared messages privately to late comers instead of interrupting the chat

Be aware that those with less technological skills or experience may be hesitant to participate or may have trouble typing as quickly as other learners and actively try to engage learners who are slow in participating

Summarize the major points at the end of the chat session and save a transcript,

Encourage learners to use emotions to help convey mood.

Offer practice sessions for those not familiar with chats

3.3.3 Podcasting

The term podcast is a combination of the words *iPod* (Apple's popular digital music player) and *broadcast*. The term is a bit misleading because users can listen to podcasts on other digital music players, smart phones or desktop computers—and they do not have to tune in to a specific broadcast time. Essentially, podcasts are digital audio programs that can be subscribed to and accessed on a variety of digital audio devices at the listener's convenience.

What makes podcasting different from simple posting streaming audio or audio recordings on a website that users can download is that users subscribe to an RSS (Really Simple Syndication) feed and the feed (called an aggregator or podcatcher) automatically updates whenever a new podcast is posted. This "push" technology saves listeners' time from having to check individual sites for new podcasts.

The first step in creating a podcast is to record and edit the content. The MP3 audio files that are typically used in podcasts are fairly simple to create and do not require high-priced equipment. The next step is to process and publish the edited podcast to an MP3 format and uploading it to a web server. The final step is to generate an RSS feed and publish the RSS feed URL. Many multiple tools are free as open-source, and exist to help with all of these steps (see **Podcasting tools**).



Best uses

a Lectures,

b Interviews with field experts,

c Recording classroom presentations or role playing exercises,

d Enable audio content that was previously created and can now be used as supplemental material.

Benefits

a Enable learners to subscribe to content and receive updates automatically,

- b Requires little monetary investment to get started,
- c Provides content that is portable and available on demand,
- d Appeals to auditory learners,
- e Provides a way for learners to review material.

Challenges

a Considerable time for the creation of a podcast—including planning the content, recording, editing and publishing,

b Users must have sufficient bandwidth to download the podcast,

c Podcasts are not a one-time thing; the strength of the format is that it continually provides access to new information, but this requires careful planning and a commitment to continue producing new content,

d Learners cannot quickly "skim" through a podcast in the same way that they can skim reading materials for the main points.

Podcasting tools

Podcatchers/aggregators Juice: http://juicereceiver.sourceforge.net/index.php PodNova: www.podnova.com/index_about_podnova.srf HappyFish: www.thirstycrow.net/happyfish/download.aspx Audio editing software

Avid Pro Tools (Windows): www.avid.com/products/xpressStudio/proToolsLE/index.asp

Garbageband (Mac): www.apple.com/ilife/garageband/

Audacity: Open-source, free, multiple platform (Windows, Mac, Linux) application that will record your audio and export it as an MP3 with the help of the LAME MP3 encoder, which is also available for free

RSS feed generation services (these services help you create the XML files that let podcatchers find your podcast): Feed Burner's SmartCast: www.feedburner.com/fb/a/home Poderator: http://poderator.com/

Soup to nuts solutions (these services offer combinations of recording capabilities, RSS feed generation, bandwidth, file hosting, blogs/Web sites): Odeo Studio: http://studio.odeo.com/ Hipcast (formerly Audioblog): www.hipcast.com/ Podomatic: http://podomatic.com/

Tips for the application of podcasting

Plan, organize and prepare your content,

Make it engaging and entertaining for listeners,

Keep it short and content-rich,

Use multiple speakers if possible,

Incorporate music to indicate the opening and closing of the podcast or between segments—but beware of copyright issues. For more information visit the Pod Safe Music Network: http://podsafemusicnetwork.com/

Get permission before recording anyone,

Invest in a good microphone,

Prepare and publish notes about your podcast that include links to information you mention.

Include metadata at the beginning of your podcast (title, speakers, date) to help identify the context and to prepare for the likelihood of the content being repurposed later

Provide instructions and links for , learners to download a podcatcher and subscribe to your feed.

3.3.4 Rapid E-learning Software Tools

Rapid e-learning software allows you too quickly and costs effectively create self-paced tutorials, either from PowerPoint presentations or by recording your computer screen. In the past, creating a tutorial frequently required working with an outside contractor for months and could cost tens of thousands of dollars.

Today, many organizations find that with a minimal investment in rapid e-learning software they can use existing PowerPoint materials and convert them into Flash-based online tutorials that can be authored in a matter of days or weeks and made accessible to learners online. Some of the available software packages include assessment and tracking capabilities that are AICC- and SCROM-compliant. AICC and SCROM are both standards for how a course communicates with a learning management system (LMS). Courses that follow these standards can be imported into any compliant LMS and work correctly in terms of learner tracking and course content sequence.

Two main types of rapid e-learning software

a **Screen casting software:** These tools enable one to record the computer screen and add narration. The recording can be converted into Flash or other video formats. Screen casting is often used to demonstrate software or Websites. Some of these tools enable the creation of interactive software simulations.

PowerPoint to flash conversion tools: This type of software enables course designers to take existing PowerPoint slides, add narration and convert them to flash presentations. The top products in this category create course navigation menus and allows for insertion of quizzes, animations and supporting documents.

Best uses

a Providing basic knowledge transfer for learners in sessions that are less than one hour in length,

b Standardizing training for all audiences that do not change often,

c Repurposing existing PowerPoint course materials for self-paced tutorials,

d Deploying training quickly to a wide audience.

Benefits

a Trainers or subject matter experts can avoid spending valuable time delivering the same training over and over again,

b Software tools are fairly inexpensive, easy to learn and offer a huge cost savings over outside development,

c Software quickly creates professional-looking materials,

d Software allows organizations to leverage existing content,

e Most trainers and learners are familiar and comfortable with PowerPoint presentations,

f Tools enable course designers to quickly update and edit tutorials after they are authored,

g Tutorials can be integrated into an LMS,

h Self-paced tutorials enable learners to participate when their schedules allow,

i Software quickly provides training to a large number of learners or learners who are spread out geographically.

Challenges

a Instructional design skill is critical for creating engaging self-paced tutorials,

b Time needed to develop and create a training pack is still longer than for in-person training,

c It is tempting to recycle in-person training and simply convert it to a boring, ineffective self-paced tutorial,

d Learners with dial-up access may experience significant delays downloading tutorials,

e Learners need computers with speakers or headphones, an up-to-date browser and flash plug-in versions,

f To be successful, learners need to be comfortable with technology and online learning,

g The free, rapid e-learning tools are not as easy to use and often do not include features such as menu navigation, interactivity or AICC/SCROM compliance.

Screen casting tools

All of these tools record on-screen activities and enable one to add narration and output various video formats, including Flash video:

Adobe Captivate: www.adobe.com/products/captivate/

SCORM- and/or AICC-compliant, also creates simulations

Camtasia Studio: www.techsmith.com/camtasia.asp

SCORM- and/or AICC-compliant

Viewlet Builder: www.qarbon.com/presentationsoftware/viewletbuilder/

SCORM- and/or AICC-compliant, also creates simulations

Viewlet Cam: www.qarbon.com/presentationsoftware/ vc/

BB Flashback: www.bbsoftware.co.uk/bbflashback.aspx

CamStudio: www.camstudio.org/

Free, open-source, no SCORM or AICC

Wink: www.debugmode.com/wink

Free, no SCORM or AICC

Tips on the application of screen casting

Invest in a good microphone for recording audio portions,

Check for background noise in the recording area,

Script audio and practice delivery prior to recording,

Integrate charts, diagrams and digital photos,

Build in as much interactivity as possible by posing questions to learners and taking advantage of assessment and quiz tools,

Create animations to engage audience and develop greater understanding,

Incorporate music,

Use multiple speakers or presenters, especially for longer tutorials,

Provide date information so that learners will know when the presentation was created,

Link to supporting information articles and resources.

Tips on the application of power point (PPT) to flash presentations

All of these tools will convert an existing PowerPoint presentation to Flash (swf) format suitable for use on the Web:

Articulate Presenter:

www.articulate.com/presenter.html

Top-rated, navigation, sound, editing, insert Flash animations, SCORM/AICC

Adobe Presenter:

www.adobe.com/products/presenter/

Formerly Breeze, very similar to Articulate, includes XML tags, which enables content to be indexed and fully searchable

iLecture:

www.lib.uiowa.edu/commons/ilecture/index.html

OpenOffice: www.openoffice.org/

Converts PPT to Flash, no sound, no animations, no auto-play, free

Powerbullet Presenter: www.powerbullet.com/

Converts PPT to Flash, with animations and embedded sound, free

3.3.5 Web Conferencing

Live online learning has many names such as synchronous learning, virtual classrooms, emeetings, webinars, and webcasts. All of these are about delivering information live over the Internet to multiple learners who can be located anywhere—and who most commonly use a Web conferencing tool to transmit information.

During a Web conference, participants sit at their own computers and are connected to other participants via the Internet. By using a Web conferencing application, presenters are able to display content, usually in the form of a PowerPoint presentation, on the screens of all the participants. The presentation is accompanied by voice communication, either through a traditional telephone conference call device or through Voice over IP (VoIP).

Other Web conferencing features:

a **Application (or screen) sharing:** the ability to share a live view of an application, such as a Web browser or spreadsheet. Participants are able to view every movement of the presenter's

cursor, making it possible to teach software applications remotely. The presenter may also be able to give students control of the application so they can try the task themselves.

Web co-browsing: is when a presenter "pushes" a Website out to participants' computers enabling each participant to then interact with the site and browse individually.

c Annotation tools: are tools that enable a participant to directly draw or type on the content area of the screen for all to see either on a blank "white board" or directly over a presentation slide.

d **Public and private text chat: refers to** the ability to send text messages either to all in attendance or specific individual participants.

e **Streaming video: is** the ability to transmit videos inside a Web conferencing application; this is commonly used to transmit live webcam images.

f **Polls, quizzing and surveys: are the** tools that make these functions available in real time inside a session and often allow for instant display of the results as well.

g **Recording or archiving: refer to** the ability to record both the visual and audio content of a session for future playback.

Best uses include:

a Time-sensitive announcements or demonstrations for large audiences,

b Question and answer sessions that use guest speakers or subject matter experts,

c Software application training,

d Collaborative meetings for team members in different locations,

e Discussion or follow-up sessions as part of a blended learning program.

Benefits

a Saves travel time and costs for participants,

b Enables the presenter to adjust the pace and/or complexity of information being conveyed in response to immediate interactions and feedback between a presenter and participants,

c Enables the presenter to gauge students' comprehension of material using discussion and polling.

d Enables experts to address a group of learners from any geographical location and respond to questions in real time,

e Provides for remote demonstration of complex software applications,

f Enables sessions to be recorded and archived for learners to review and for those who cannot attend the live sessions,

g Creates a sense of community for learners and instructors who might not otherwise interact with each other,

h Involves a social interaction with other people that can make training more engaging compared to other e-learning modes.

Challenges

a Presenter needs to develop specialized facilitation and moderation skills to encourage participation by all the learners,

b More difficult than in-person training for presenters to gauge participant comprehension and involvement on the fly,

c Several technical hurdles for users, including Internet connection speed, learners needing to install software, and a need for a headset, etc.

d Thoughtful design required to keep participants engaged,

e Participants may find it difficult to limit the distractions of their workplace during training.

Tips for the application of web conferencing

Provide participants with technical resources for easy participation and links to any downloads or plug-ins needed as well as instructions for requesting and accessing technical help

Provide clear instructions for logging into the Web conference and encourage participants to test

their systems several days before the actual start time for formal sessions

Offer suggestions for limiting participant distractions

Spend time at the beginning covering the basics and setting ground rules for interaction

Have a "producer," or assistant to the presenter, to manage the technical side of the Web conference and the chat sessions

Have a back-up plan that enables redress of technology problems (for example, have screen shots of the Website to be shown when it is down).

Limits the time to one hour or less

Builds in interactivity by using polls, multiple-choice questions and chat features to keep learners

engaged and help them retain the material

Build in fun and humor whenever possible

Tools for web conferencing

Web conferencing services are typically hosted by a vendor and made available either on a usage basis (pay per use) or for a fixed fee (pay per "seat"). Many vendors charge set-up fees. The learner is also warned to be aware of potential charges for exceeding the number of seat licenses.

WebJunction's Live Space: http://webjunction.org/livespace

Combines Horizon Wimba's conferencing tool with enhanced library-specific training and support

Horizon Wimba: www.horizonwimba.com/

Extended training features like breakout rooms, shared cursor control, etc., mainly for academic and nonprofit institutions

Elluminate: www.elluminate.com/

Extended training features like breakout rooms, shared cursor control, etc.

OPAL: http://opal-online.org/

Lower cost, basic solution for libraries, with shared programming between libraries

Centra Live: www.saba.com/centra-saba/

Highly rated, full-featured virtual classroom and meeting space with several different versions

available for different uses

WebEx: www.webex.com/

A top-rated professional Web conferencing tool aimed at business use for meetings and training

Adobe Acrobat Connect: www.adobe.com/products/acrobatconnect

A visually appealing, Flash-based conferencing tool with highly configurable layout and display options

DimDim: http://dimdim.com/

Open-source Web conferencing, in both free and "enterprise" versions; still new and under

development

Туре	Best Uses	Benefits	Challenges
Discussion	Live Online Learning	Online discussion	Online tutorials
Boards	Online chat/IM sessions	boards	Simulations
Dourus	Conference calls	Listservs	Online self-assessments
	Video conferencing	E-mail	Archived Webinars
		Blogs	Podcasts
		Wikis	CD-Roms
Online	Informal check-ins	Free, easy access and	Difficulty in keeping
Instant	Small group discussions	simple for participants	conversations focused
	Set "office hours" for	and facilitators to	Inability to observe and
Messaging/	students to seek	pursue	benefit from body
Chat Sessions	instructor clarification	Ability to preserve	language, tone or facial
	and set questions	Transcripts	expressions
		Immediate feedback	Difficulty knowing
		enabled	when response is
		Learners can develop a	complete
		buddy list and access to	Time delay
		other learners online	Scheduling challenges
			Limited time for
			reflection on questions
			set
Podcasting	Lectures	Learners subscribe to	Time involved for
	Interviews with experts	content and	creation of podcast—
	in the field	automatically receive	including planning the
	Recording classroom	updates	content, recording,
	presentations or role	Little monetary	editing and publishing

3.4 Summary of Types of Blended Learning

	playing exercises	investment required to	Users must have
	Avails audio content	get started	sufficient bandwidth to
	that has previously been	Content is portable and	download posted
	created and could be	available on demand	material
	used as supplemental	Appeals to auditory	Requires careful
	material	learners	planning and a
		Provides a way for	commitment to continue
		learners to review	producing content
		available material	Learners cannot "skim"
			through a podcast
E-learning	Enhances basic	Trainer can avoid	Limited capabilities of
Software	knowledge transfer for	repeated delivery of	instructors
Soltware	learners in planned	same content	Software tools are fairly
Tools	sessions	Software tools are	may be expensive and
	ensures standard and	inexpensive, easy to	needs induction before
	stable training for all	use, and offer cost	its use
	audiences Builds and	saving	
	provides content for	Quick creation of	
	self-paced tutorials	professional materials	
	Can be deployed to a	Ability to leverage	
	wide audience	existing content	
		Software builds on	
		trainers' and learners'	
		familiarity with PPT	
		Ability to leverage	
		existing content	
		Software builds on	
		trainers' and learners'	
		familiarity with PPT	
		Tools enable course	

		designers to update and	
		edit tutorials	
		Enables quick creation	
		of	
		professional-teaching	
		materials	
		Tools enable course	
		designers to update and	
		edit tutorials	
		Tutorials can be	
		integrated into an LMS	
		Learners can participate	
		at their convenience	
		Training provided	
		quickly to a large	
		number of learners in a	
		big geographical area	
Web	Enables important	Travel time and costs	Instructors need
Conferencing	announcements, updates	reduced	facilitation skills
	or demonstrations for	Immediate interaction	specific to live online
	large audiences	and feedback made	learning
	Enhances Q & A	possible	Technical hurdles for
	sessions with experts	Ability to adjust	users
	Remote software	instruction and check	Thoughtful design
	application training	for comprehension	required as learners may
	enabled	Sessions can be run in	find it difficult to limit
	enables meetings and or	time	workplace distractions
	discussions for learners	Fosters a sense of	
	in different locations	community	

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