# Study on Strategies for promoting Effect of Blended Training in Education Technology

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**Abstract.** The widespread adoption of web-based technologies in knowledge delivery and communication has made the blended learning a more effective pedagogical practice which combines traditional training approaches with e-learning tools. In this paper, a comprehensive view of blended training in education technology and strategies of training in education technology were discussed. A model was proposed to ensure all components are added appropriately and the whole system is maximum effective.

**Keywords:** c-Blended-learning; Education Technology; Training

## 1. Introduction

Although blended training in education technology is not one of Although blended training in education technology is not one of the leading trends in training today, its concept has been around for decades. The rapid emergence of technological innovations over the last half century (particularly digital technologies) has mad the blended learning more popular today. Blended learning combines e-learning tools with traditional classroom training to ensure maximum effectiveness.

## 2. Definition of Blending Leaning

Jennifer Hofmann (2001) pointed out that: "…behind blended learning is that instructional designers review a learning program, chunk it into modules, and determine the best medium to deliver those modules to the learner. Various media include, but are not limited to, technologies such as traditional classroom or lab settings, reading assignments, CD-ROM, performance support tools, tele-training, stand-alone Web-based training, asynchronous Web-based training, synchronous Web-based training…".

Driscoll (2002) also described the blended learning as a learning process that is based on the combined or mixed modes of web-based technology (e.g., live virtual classroom, self-paced instruction, collaborative learning, streaming video, audio, and text) to accomplish an educational goal; it combines various pedagogical approaches (e.g., constructivism, behaviourism ,cognitivism to produce an optimal learning outcome with or with out instructional technology; it also combines any form of instructional technology (e.g., videotape, CD-ROM, web-based training, film) with face-to-face instructor-led training; it mixes or combines instructional technology with actual job tasks in order to create a harmonious effect of learning and working[1].

Li referred blended learning to courses that combine face-to-face classroom instruction with online learning to reduce cost and enhance the effectiveness of training [2].

Zhou pointed out that blended learning designs and mixes specific learning approaches, including practical classroom practice, synchronous training and asynchronous training, based on difference in learning requirements and preferences among learners.

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Here we refer the blended learning to a training system that maximizes the effectiveness of learning through designing face-to-face classroom training and remote web-based training frames; recognising the differences among individual trainees; integrating various teaching resources and pedagogical principles; utilizing synchronous and asynchronous training approaches; and stimulating self-learning in the mean time respecting teacher's leading roles. This concept can be presented by the following model, as shown Figure 1[3].
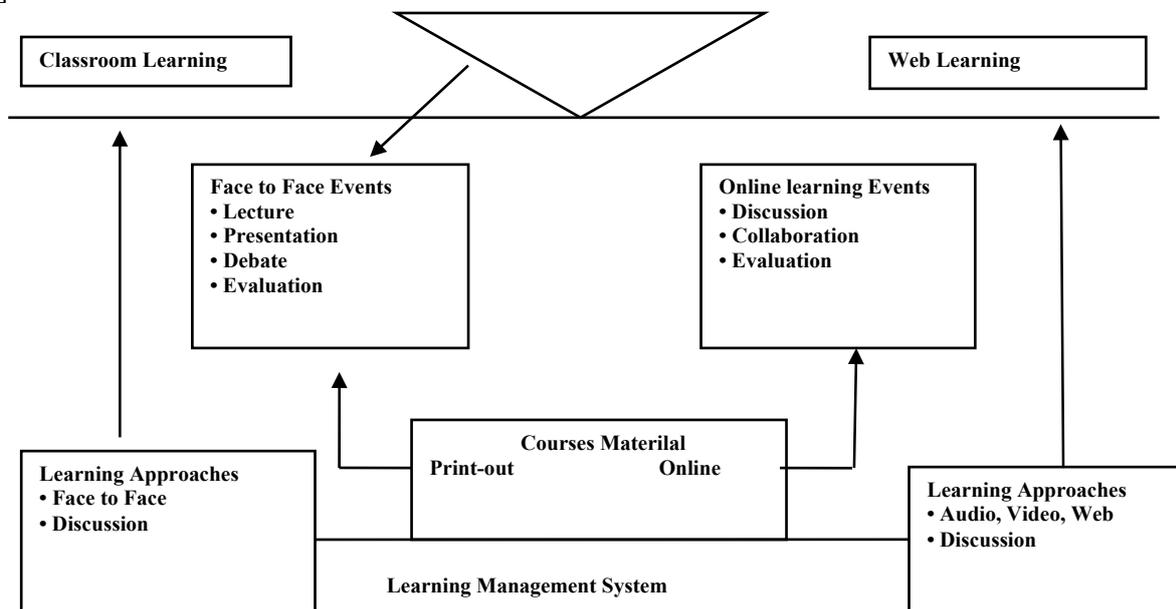
Fig.1 Diagram of blended learning model

## 3. Why Blending Training

There are many reasons why blended training has become more and more popular and effective training tool over other learning options.

Firstly, blended training satisfies the individual needs of both learner and trainer. The ability and pace of learning are difference among individual learners. Blended training is self-paced learning that implies solitary, on-demand learning at a pace that is managed or controlled by the learner. Blended training also provided more options in knowledge delivery , from email to web-meeting. On the other hands , blended training is a collaborative learning; it provides multiple platforms to facilitate the communication and discussion among learners and instructors.

Secondly, blended training has proved to be an improved and more effective pedagogy. The blended training makes teaching and learning practice more interactive. It increases the level of active learning. Multiple delivery modes allow the instructor to design and deliver the training material in different formats, making content more acceptable. It provides tools by which more learners can instantly input their thoughts and experiences. For trainer, it is convenient to add any new content, such as practical examples. Blended training prompts the two-way communication and interaction between trainers and learners .

Finally, by providing increased access and flexibility, blended training meets the different learning styles and student levels and generates higher level of student and faculty satisfaction. Student learning outcomes and student demand are higher by blended training, comparing to face-to-face and fully web-based course. Participating in Web-based courses also led increase in student and instructor information literacy. Today, more and more training professionals and institutes recognize the benefit of blended training

## 4. Strategies for Promoting Effect Blended Training in Education Technology

Carman (2005) listed 5 key elements that could be considered when developing an effective blended training system. They are live event, online content, collaboration, assessment, and reference materials.  This paper shows that building a successful blended training in education technology system requires following 4 steps [4].

## 4.1. Designing course content of an effective blended training in education technology by thoroughly analyzing learner's background and requirements .

A successful blended training in education technology system can gain and keep the learner' attention; it also makes learners realise that it is relevant to their specific situation; finally, it installs confidence in learners and provides the learners with satisfaction.

It is important to know as much as possible about the target audience before designing blended training content. At North China Institute of Science and Technology, designing blending learning course starts with the analysis of the expected goals and skills of each individual learner. It also takes into consideration of the nature of their job, and the context in which they were to perform. The second step is design appropriate course content based on the result of analysis. While the instructor-led classroom learning is best for complex theory and principle, the instructor-led online learning (part of blended learning system) provides a good platform to present demonstration step by step that motivated learners more.

In College Teachers Training program for University Teachers (majority are assistant or associate professors), North China Institute of Science and Technology conducted a survey among the trainees before training course was designed. The survey covered trainees' general skills, experiences, knowledge levels, preferred learning methods, familiarity and comfort level with learning via computer, motivation to learn, performance goals and learning objectives, requires face-to-face interaction, and teamwork…ect. Then under frame of the National Educational Guideline for Training University Teachers, a course was designed based on the difference in personal learning styles, skills and knowledge backgrounds. To satisfy the special needs of university teachers who have higher education background and more familiar with current information technology, the content of the course was expressed in more divers format including i). Multi-media combination for basic concept and principle, training related activities, case studies, and experimental demonstration; ii) Web designed by using Dream weaver instead of HTML, so that the instructor can easily access and update the content on the web; iii) multi-media and teaching video and movies.

## 4.2. Implementing multiple approaches to delivery training

Three approaches have been used in the College Teachers Training program for University Teachers. i) Instructor-led online learning:  The traditional instructor-led classroom learning gives the instructor the opportunity to present, demonstrate, discuss and interact with students face to face. For many learners, nothing can replace the ability to tap the expertises of a live instructor. Live instructor-led online learning system keeps the above mentioned advantages as well as benefits of using web technology. The trainees are motivated and willing to participate in activities and experiments. There intend to be more discussion between instructor and trainee, and among trainees. ii) Self-paced learning:  Self-paced, asynchronous learning adds significant value to the blended training. Instructor uses internet to assign the self-paced learning content. Students practice and carry out learning activities based on their own speed and schedule. It dramatically increases learner's independency. It extends the time and space for learner to access the course information. iii) Collaboration: Within the blended training system, an environment is created for learners and instructor to collaborate synchronously in chat rooms, or asynchronously using email and thread discussions. The collaboration can be peer-to peer or peer-to-mentor. The collaborative learning offers learners with enormous advantages not available from more traditional instruction because a group can achieve more meaningful learning and solve problems better than any individual can alone.

## 4.3. Monitoring learning progress

The self-paced online learning can sometime be boring, requiring greater discipline on the part of the student. It is important that instructor can monitor the attendance and learning progress. In the preparation stage of the learning, instructor should demonstrate the learning system so that every learner is capable to access and use online tools and utilize online resources; the information can be delivered through handing out print out or via email; making sure the reference material is available to everyone. During learning, an online tracking system should be in place to generate statistic data for instructor to monitor learning progress. Many tools, such as online chat, instant messaging, and newsgroup, can connected the instructor and learners together to form a learning community. Students can also be divided into several small discussion groups so they can share more responsibility.

### 4.4. Rational assessment effect of blended training in education technology.

Assessment is one of the most critical components of blended training. It enables learners to test out the content they already know, fine-tuning their own blended training experience. It also measures the effectiveness of all other learning modules and events. The result of assessment helps to improve the existing learning modules and the way of blending. At North China Institute of Science and Technology, two approaches were adopted. A short survey and interview assess learner's knowledge, attitude and opinions on blended training. In addition, an evaluation was conducted measuring trainee's ability in comprehension, application and analysis skills gained from the course. In the final project paper submitted, trainee's ability to use multiple media and other information technology ( i. e. PPT, video, image and carton…) as tools to express the concepts and principles gained in the course was examined. Based on the final evaluation, instructor can modify the current blended training system to make it more effective.

## 5. Conclusion

By combining published blended training principle and experience of our own practice, stratigies for improving blended training in education technology training was proposed. However, as the new technologies continue to emerge, and due to the complexity of pedagogy, further research is required to maximum the effectiveness of blended training.

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