



## Blended learning: issues and concerns

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### General Note

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### ABSTRACT

Blended learning is being recognized as a solution to the perceived weaknesses in both traditional learning and e-learning. This paper discusses the opportunities provided by blended learning, in comparison with both traditional and e-learning, and the dimensions that must be considered in order to create the best blend. The review shows that blended learning is not a new concept, but that it exists in many different forms and is prevalent in most classroom practices. The most used definition indicates that blended learning merges traditional classroom teaching with e-learning activities; and the strength of blended learning is not limited to its potential to overcome the disadvantages of e-learning or traditional learning, but in the blend itself. The 'ingredients' of the blends are compared, leading to a discussion of the factors that must be considered by educational institutions when selecting appropriate and effective teaching practices.

**Key words:** Blended Learning, e-learning, Switching, Networking, Citation analysis.

### 1. INTRODUCTION

The IT revolution, which first prized 'information' and its dissemination, is creating a knowledge society in which it is not just information which is important, but the know-how to use that information appropriately. More information is available than at any time in history, in many forms, for those who know where to look and have the necessary resources. This gives rise to a need for ongoing human resource development to teach people how to find, understand and apply the information.

For the last few decades, technology has been revolutionizing every aspect of life. Saudi Arabia has responded to the technological expansion in most areas, including education. Traditional methods of learning have been inspected and found wanting, for example in terms of the need for flexible thinking and technological implementation. Traditional classroom-based learning in which students are passive recipients of information provided by the expert, have in certain circumstances been replaced by e-learning. The

implicit assumption behind moves to full e-learning is that e-learning is the best way to achieve educational improvement, in all subjects, for all students. New educational paradigms have emerged, with the learner seen as an active agent. One way of facilitating such activity is to make the learner the information seeker. Thus, most educational institutions aim to adopt e-learning with an assumption that this will reap greatest educational improvement. By focusing on blended learning in this paper, we will argue that the current transitional stage, where traditional learning and e-learning co-exist may be more appropriate than full e-learning. The specific objectives of the paper are:

1. To investigate the need for blended learning in contrast with e-learning and traditional learning.
2. To understand the concept of blended learning.
3. To explore possible ingredients of the blend.
4. To determine the factors that needs to be considered when selecting a teaching style.

## 2. IDENTIFYING THE NEED FOR CHANGE

Traditional learning and physical classrooms have been the dominant form of knowledge transfer for over 3,000 years. As Singh & Reed (2001) said, "even today, nearly 80% of corporate learning is conducted in the classroom." However, "there are many problems associated with traditional learning" (Hijazi, 2003), and when possible new technologies have been developed to support teaching – e-learning being the latest. However, multiplicity has accompanied the concept of e-learning, as Pollard & Hillage (2001) said "every time you pick any book or magazine on the subject of e-learning, you will almost find a different definition." For some e-learning is a broad concept, including any learning that uses information and communication technologies; for example; pre-school children using an interactive game; pupils collaborating on a history project with pupils in another country via the internet. Conversely, there are narrower definitions such as Fitzgibbon's (2004), where 'e-learning' is defined "as a web based, higher education accredited programme, delivered over the Internet, using a managed learning environment, mediated by tutor led synchronous and asynchronous discussion groups." The definition of Urdan and Weggen's (2000) is closest to the one I would like to adopt here. They define e-learning as "the delivery of learning materials, packages or opportunities (i.e. content) through various forms of electronic media, including the internet, intranets, extranets, satellite broadcast, audio-video tape, interactive TV and CD-ROM."

E-learning compared to traditional teaching methods can

- Be faster and more intense when designed appropriately as Epic (1999) noted: "where you are using interactive, self-paced materials, then the time for learners to complete the programme will be at least 50 percent less than traditional classroom learning".
- Increase IT skills. As indicated by the National Education Centre (2000) "Internet based learning empowers people, because learning online demands that students have at the very least a basic understanding of IT skills and computer literacy".
- Potentially provides more educational opportunities as Hennik, (2003) stated "e-learning has access to a large audience of possible learners", so will the number of people with relevant IT skills increase.
- Potentially minimize forgetting and thus increasing the probability of retrieval. (Thalheimer, 2003)
- Provide meaningful repetitions to aid learners in releasing information they'd forgotten and shrink the length of the retention interval by interspersing the original retention interval with addition learning events.

However, e-learning has several disadvantages.

- It may not be universally appropriate. "It is particularly suited to cognitive learning, to presenting new information, stable course content, learning that requires practice and review, for those with reflective or theorist learning styles, where situations need to be simulated, and where the media requirements are fairly simple. [...] it is much less suited to psychomotor learning, affective learning, those with activist or pragmatist learning styles, for richer media (audio/video voice or video recording), and where voice and body language is important." (Epic, 1999)
- It is technology dependent, which can exacerbate divisions between the technologically rich and poor. As indicated by Hennik (2003) "in terms of internet and broadband provision, and hardware specification." In addition, Al-Dawalij Manager (Saudi Educational Software Producing Company) said that his company had stopped producing online educational materials for schools because of the Network connection problems that prevented schools from accessing the material. Thus, their product range is only available on CD-ROMs and DVDs.
- Apart from technological issues, other obstacles include reduced levels of satisfaction in higher education students (Sikora and Carroll, 2002), Higher attrition rates, difficulty in adjusting to the structure of online courses, time management and motivation (Marino, 2000).
- Furthermore, the reduction of non-verbal social cues in computer mediated communication, such as the absence of facial expressions and voice inflections can generate misunderstandings that can adversely affect learning. Hara and Kling (2001) conducted a study of online courses, finding that feelings of isolation were an important stress factor

for online students, but not the main problem as frequently mentioned in the professional literature.

- Rather, students reported confusion, anxiety and frustration due to the perceived lack of prompt or clear feedback from the instructor and from ambiguous instructions on the course website and in e-mail messages from the instructor.

These indicate that the problems exhibited by some online courses may be less related to the course delivery mechanism and more related to failure in anticipating how technology can be used to support course design, facilitate learning and nurture a sense of community. Since both traditional learning and e-learning have strengths and weaknesses, there is a general agreement that traditional learning can be used to enhance e-learning (Fallon and Brown, 2003; e-learning, 2000; Festa, 2000) with many researchers believing there is a place for traditional learning in classrooms with e-learning. Therefore, blended learning has emerged.

## 3. BLENDED LEARNING

Although blended learning is not a new concept, the ingredients of the blend are new. In the past, these have been limited to physical classroom formats (lectures, labs, etc), books or handouts. However, today these can be supplemented by opportunities provided by IT. Blended learning represents a real opportunity to create learning experiences that can provide the right learning at the right time, in the right place and at the right level, for each and every individual, not just at work, but in schools, and universities. It can also be truly universal, crossing global boundaries and bringing groups of learners together through different cultures and time zones. In this context blended learning could become one of the most significant developments of the 21st century. Although the term 'blended learning' has gained popularity in recent years as a description of particular forms of teaching with technology, it remains ill defined. Within this section, some of the most popular definitions will be identified.

Collis and Moonen (2001) defined blended learning as "a hybrid of traditional face-to-face and online learning so that instruction occurs both in the classroom and online, and where the online component becomes a natural extension of traditional classroom learning. Blended learning is thus a flexible approach to course design that supports the blending of different times and places for learning, offering some of the conveniences of fully online courses without the complete loss of face-to-face contact." This is the most usable definition nowadays.

In 2002, Driscoll identifies four different 'concepts':

1. A combination or mix of web-based technology to accomplish an education goal;
2. A combination of pedagogical approaches (e.g. constructivism, behaviorism, cognitivism) to produce an optimal learning outcome with or without instructional technology;
3. A combination of any form of instructional technology with face-to-face instructor-led training; and
4. A Combination of instruction technology with actual job tasks.

Driscoll summarized by saying, "the point is that blended learning means different things to different people, which illustrates its widely untapped potential". The concept of "blending" grew out of experiences with e-learning. As indicated by Driscoll (2002) "the importance of the blended learning arises from the failure of purely online learning to meet the training needs of organizations." Another conceptualization is provided by Valiathan (2002), he described blended learning as "a solution that combines several different delivery methods, such as collaboration software, Web-based courses, EPSS, and knowledge management practices. Blended learning is also used to describe learning that mixes various event-based activities, including face-to-face classrooms live e-learning and self placed learning."

He described blends in terms of different approaches to learning:

1. Skill-driven learning, which combines self-paced learning with instructor or facilitator support to develop specific knowledge and skills;
2. Attitude-driven learning, which mixes various events and delivery media to develop specific behaviors; and
3. Competency-driven learning, which blends performance support tools with knowledge management resources and mentoring to develop

workplace competencies. Here, Valiathan starts to link purposes (intended learning outcomes) to delivery mechanism and approaches to teaching.

Furthermore, Whitelock & Jelfs (2003) opened a Journal of Educational Media Special issue on blended learning with three definitions:

1. The integrated combination of traditional learning with web-based online approaches
2. The combination of media and tools employed in an e-learning environment
3. The combination of a number of pedagogic approaches, irrespective of learning technology use.

Of these, the first is perhaps the most common; the second is widespread, although sometimes advocated in a more general form as concerning models that combine various delivery modes rather than privileging e-learning. Singh (2003) gives a more substantial description that elaborates on the third possibility based on what he sees as a much richer set of learning strategies or dimensions that can be blended in ways such as: offline with online; self-paced with live, collaborative; structured with unstructured; custom content with off-the-shelf etc. However, these three contrasting definitions are not the only ones that have been offered. In addition, Kerres & De Witt (2003) in the same volume as Whitelock & Jelfs's article discusses blended learning as the mix of different didactic methods and delivery formats, arguing that these two are independent.

Additionally, Singh (2003) said "Blended learning programs may include several forms of learning tools, such as real-time virtual collaboration software, self-paced Web-based, courses electronic performance support systems (EPSS) embedded within the job-task environment, and knowledge management systems. Blended learning mixes various event-based activities, including face-to-face classrooms, live e-learning and self-paced learning. This often is a mix of traditional instructor-led training; synchronous online conferencing or training, asynchronous self-paced study, and structured on-the-job training from an experienced worker or mentor." Therefore, it can be concluded that 'blended learning' is multi-faceted, different authors may use different interpretations, making cross study comparison difficult. Such clarification is needed if an appropriate blend is going to be found for different circumstances (e.g. subject domain, pedagogy, age of child, diversity of group).

#### 4. THE ARGUMENT FOR BLENDED LEARNING

Blended learning is rooted in the idea that learning is not just a one-time event, but a continuous process. By integrating e-learning and traditional learning it can gain the advantages of both and reduce the disadvantages. The main arguments for blended learning relate to the following:

a) The recognition of different learning styles as indicated by Danchak (2004) "some individuals need concrete experiences while others are more comfortable with abstract concepts. It is not practical to tailor a single lecture exclusively to the learning style of each participant." There is still uncertainty over which learning styles works best but research in this area may provide the key to developing tailorable educational services. At present there appears to be a tendency among new teachers to teach how they themselves would like to be taught and not how the students ought to be taught. In order to avoid too narrow a range of teaching styles, it is important for teachers to be aware not only of their preferences but also of the diversity among pupils. Acknowledging such variety the best approach at present would be to use a variety of teaching and learning material and environments that do not favor any one style. This has the advantage of reducing a student's dependency on one learning style. Therefore, organizations will need to adopt a blended approach to the design of learning opportunities to provide the right content, in the right format, to the right people, at the right time. Blended learning can combine different delivery mechanisms that complement each other.

b) Variation Theory: The variation theory of learning is based on the idea that for learning to occur, variation must be experienced by the learner. Without this there is no discernment, and without discernment there is no learning. Discernment is at the core of our ways of experiencing the world around us and concerns the experience of difference. Discerning means that a feature of the world appears as the subject, and is seen or sensed against the background previous experiences as something different. Learning occurs

when critical aspects of variation in the objects of learning are discerned. For example, sound can only be experienced as a contrast to experienced (or imagined) silence. If the level of happiness – or sorrow – never varied within individuals, nor differed between individuals, then happiness – and sorrow – would cease to exist. If we always told the truth, not only lies but even truth would never have been a part of our awareness. According to variation theory, it is necessary to experience certain patterns of variation through the blend in order to develop certain ways of seeing.

c) Improve learning: Gardiner (1994) endorsed the need for classroom change to allow students to acquire more significant kinds of cognitive learning, particularly critical thinking skills. Creating blended learning is about enabling people to see alternatives so that they get different results (Thorne, 2003). Because of the growing agreement that there is not and probably never will be, one unified general theory of learning, there is a need for a blend. Rossett (2002) supports this "blended theory approach." Learning theories aren't like religion, you don't have to pick Catholic or Baptist or Muslims, and shun the others. "The goal is to have the right theory for the right situation" (Zemke, 2002). Thus blended learning improves learning outcomes by providing a better match between how a learner wants to learn and the learning program that is offered

Particularly, there are several benefits that strengthen the need for blended learning in comparison with e-learning, such as:

a) Sense of community: Rovai & Jordan (2004) argued, "the rationale was that a combination of face-to-face and online learning environment provides a greater range of opportunities for students to interact with each other and with their professor. These interactions should result in increased socialization, a stronger construction of knowledge through discourse, thus providing stronger feelings that educational goals were being satisfied by community membership." Moreover, Hennik (2003) said, "the immediate feedback, and the many opportunities for personal communication, enables learners to develop presentation and other social skills."

b) Extending the Reach: A single delivery mode inevitably limits the reach of a learning program or critical knowledge transfer. For example, a physical classroom-training program limits access to only those who can participate at a fixed time and location, whereas a virtual classroom event is available to a remote audience, and when followed up with recorded knowledge objects (ability to playback a recorded live event), can extend its reach to those who could not attend at a specific time.

c) Optimizing development cost and time: Combining different delivery modes has the potential to balance out and optimize the learning program development and deployment cost and time. A 100% online, self-paced, media-rich, Web-based training content may be too expensive to produce online (requiring multiple resources and skills), but combining virtual collaboration learning forums and coaching sessions with simpler self-paced materials such as generic off-the-shelf WBT, documents, case studies, recorded live e-learning events, text assignments, and PowerPoint presentations (requiring quicker turn-around time and lower skill to produce), may be just as effective or more effective. Moreover, Singh & Reed (2001) supported this idea when they said "blended learning focuses on optimizing achievement of learning objectives by applying the "right" learning technologies to match the "right" person at the "right" time."

#### 5. INGREDIENTS OF THE BLEND

In blended learning several ingredients can be mixed together. The decision as to which ingredients to use may be influenced by factors such as:

a) Audience: "the biggest danger in any 'e' or blended solution project is becoming focused on technology /creativity, and not the audience" (Throne, 2003). Therefore the characteristics of the target learner must be understood in order to design the most effective delivery options in achieving the learning objective. As Singh & Reed (2001) note this needs to consider:

- Base knowledge – how uniform is the knowledge that they are bringing to the learning program?
- Preferred learning styles – whilst individual learning styles may vary, groups of learners may share learning styles preferences; for example designers are visual thinkers.
- Location – is the audience centralized or distributed?
- Motivation – what is the level of effort, inconvenience or cost the learners are willing to incur in order to obtain the learning you are offering?

b) Content: Danchak (2004) said "choosing what to present is as important as how it is presented", not all content may be optimally presented using the same delivery mechanism – therefore different parts of the material will require different modes of delivery. Course developers need to consider which parts of the program can be taught online, using which technology, and which assessment mode is most suitable. This might work best through co-operative endeavor.

c) Learning outcomes: In using any learning method, the learning outcomes have to be determined clearly showing how each of the employed learning method can support achieving each of the learning outcomes.

d) Context: Specify the unique circumstances and conditions that surround the educational process that need to be considered.

e) Financial: Analysis of both the content development and delivery costs could play a significant role in the deciding the delivery options.

g) Infrastructure: The available bandwidth network connections and PCs specifications will affect the choice of the technology used in the learning process.

Following is a suggestion of the possible ingredients of the blend:

a. Mixing online learning with face-to-face teaching: This is the most popular meaning of blended learning. As Singh (2003) said "the original use of the phrase "blended learning" was often associated with simply linking traditional classroom training to e-learning activities."

b. Mixing Media: Here several types of media are mixed such as video, TV, and animations to achieve the learning outcomes.

c. Mixed contexts: As indicated by Oliver & Trigwell (2005), "Implicit in some of the definitions is the idea that what may need to be blended are the different physical contexts within learning takes place." This is what is currently happening in Al-Madrasa (Secondary and high school) in Riyadh, each subject has a special class or lab and students move around these rooms according to their time table.

d. Mixed Pedagogies (Theories of Learning): Driscoll (2002), suggested in the definitions of blended learning "that the mix consists of 'pedagogical approaches' such as constructivism, behaviorism, and cognitivism. Actual blended learning would involve students learning through experiencing variation in aspects of what it is that they are studying (their object of study). So in looking at relations between learning theories and blended learning, we must start from the position that many students may not experience the learning environment as one that is blended in ways similar to the way intended by the 'instructional designer'.

e. Mixed Learning Objectives: Another definition of blended learning involves blending different kinds of intended learning outcome. Driscoll (2002) mentioned blending skill-driven, attitude-driven and competency-driven learning.

f. Blending self-paced and live, collaborative learning: Collaboration learning involves groups working together to solving problems, in sharing and clarifying ideas (Kemery, 2002) as well as periods of individual endeavour

g. Blending structured and unstructured learning.

h. Blending Custom content with off-the-shelf content.

i. Lending learning practice and performance support.

From this it can be seen that blended learning has evolved to encompass many dimensions with overlapping attributes.

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Since there are several combinations of the ingredients; the question is what are the "Right" ingredients for creating the most effective blended program? These relate to the following issues:

- Institutional: e.g. organizational, administrative, academic affairs, and student services.
- Pedagogical: the content that has to be delivered, learner needs, and learning objectives
- Technological: issues include creating a learning environment and the tools to deliver the learning program.
- Interface design: the user interface of each element.
- Evaluation: the usability of a blended learning program.
- Management: such as the infrastructure and logistics in managing multiple delivery types.
- Resource support: with the practicality of organizing and making available different types of resources.
- Ethical issues: such as equal opportunity, cultural diversity and nationality should be addressed. If students are known to have preferred learning styles, or to learn easier under different circumstances, is it ethical to deny them the opportunities to achieve optimum results?

## 6. CONCLUSION

Blended learning is not a new concept. Technological and pedagogic advances have given rise to many 'ingredients', which can be included in the blend. A broad definition is therefore needed, which includes a determination of the ingredients of the blend, the media, the context (place and time), the pedagogies, the learning objectives and the teaching practices. Focusing on the incidence where the online component becomes a natural extension of traditional classroom learning. Blended learning is thus a flexible approach to course design that supports the blending of different times and places for learning, offering some of the conveniences of fully online courses without the complete loss of face-to-face contact. As well as maximizing the benefits of traditional and e-learning methods, blended learning can be used to accommodate different learning styles and preferences. Therefore, organizations must use a blend of learning approaches to provide the right content, in the right format, to the right people at the right time. This review has illustrated the complexity of blended learning and number of choices available to individual educationalists, authorities, service providers, curriculum designers and content providers. Rather than adopt a technology – led approach, a more holistic policy is required to develop an optimum delivery mechanism. Therefore, a further investigation and innovation plan should be conducted in order to examine the student's success rates using blended learning in comparison with traditional and e-learning.

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