BLENDED LEARNING IN HIGHER EDUCATION INSTITUTION IN MALAYSIA.

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Abstract

Poor traditional classroom learning has been a major concern in the teaching and learning activity. This conventional "chalk and talk" method is replaced by pure online learning. E-learning, a method which evolved from distance education, has received special attention from public universities. However, for e-learning to be effective, it must be combined with the other forms of learning such as face to face learning. This combination leads to a new methodology called blended learning. This blended learning has proven to be the most effective learning system. This paper conducts an exploratory study of blended learning in higher education institution (HEI) in Malaysia. The focus is on understanding what it means by blended learning, the implementation of blended learning at HEIs, and what benefits can be identified. This study also proposes a framework for making blended learning work best in HEIs.

Keyword: blended learning, e-learning, traditional face to face learning, higher educational institution, teaching and learning.

1. Introduction

The implementation of technology in teaching and learning activity has attracted great interest from the practitioners in the higher education institution (HEI) in Malaysia. Many higher education institutions have started to adopt and implement information and communication technology (ICT) solutions for example electronic learning as a source for flexible teaching and learning process either in the classroom or outside the classroom. This technology is referred as technology-enhanced learning (TEL). Traditional classroom required the instructor to present, interact, discuss, demonstrate and communicate with students face to face. As well as the students interact and communicate with each other face to face. The instructor has to distribute all the hands on, assignments and exercises to the students all by herself or himself. The traditional instructor-led classroom learning is a proven learning with full opportunities for interaction between the instructor and students as well as between students and students. However, the requirement for the instructor and students to be in a classroom on the day and time that have been designated in class schedule has made it difficult to certain instructors and students. In addition, the lack of equipment in the classroom may not support effective teaching and learning process. The integration of ICT in teaching and learning has changed the way curriculum is designed, the way we learn, and changing the way we communicate. E-learning has become an increasingly significant part of the teaching and learning experience to the instructors and also to the students. The virtual classroom learning enables to address difficulties and limitations posed by the traditional classroom learning. This technology makes possible variety of resource avenues, enables global networking for resources and provides sharing of information for the educational

communities. However, e-learning also has its own limitations. It requires greater discipline from the students, and sometimes is boring. The communication is limited between the instructor and students and may result to lower attendance. It is also difficult to make sure students have actually completed a course. All these constraints and limitations tend to lead to lower teaching and learning efficiency. As both the traditional classroom learning and pure e-learning offer strengths and limitations, it is better to combine the strength of face to face learning with online learning into new delivery method called blended learning. This study is focused on understanding the precise definition of the blended learning and the implementation of these mixing methodologies of traditional classroom with online delivery learning in higher education institutions in Malaysia. It is also proposes advantages and disadvantages of the blended learning in order to enhance teaching and learning experiences.

2. Higher Education Institution in Malaysia

There are currently 20 public universities and university colleges (14 universities and 6 university colleges), 30 private universities and university colleges (11 universities, 5 International universities and 14 university-colleges), and over 600 private colleges in the country of Malaysia (Ministry of Higher Education, 2006 as cited in Chai Lee Goi and Poh Yen Ng, 2009). Raja Maznah (2004) has mentioned that most public universities in Malaysia have some form of strategic plan for implementing pure electronic university. This plan includes the teaching and learning program will be conducted via online or web based mode to replace the traditional classroom learning. According to her, it is shown that universities in Malaysia are ready for the online delivery learning which supports distance education. Based on the analysis of SWOT project conducted in 2004 (Raja Maznah, 2004), it was found that most HEIs have sufficient e-learning infrastructure but unfortunate lack of a strategic plan for implementing online learning. Most HEIs focusing more to provide an ICT infrastructure to support online learning compared to firm plan for using ICT as a tool for teaching and learning, course development, course structure and assessment. Planning for use of the ICT in teaching and learning seems to be still in the drawing boards or still in the mind of the person responsible for managing the e-learning. The rapid growth of web-based technology and the high usage of Internet have made teaching and learning via the online mode more viable in recent years. Nowadays, most HEIs are ready for e-learning. They have set up the ICT infrastructures and strategic plan to implement online delivery learning in their program offered as e-learning mode may support conventional teaching approach. With supports from the government under the 9th Malaysia Plan (2006-2010), Malaysia government has highlighted building world class human capital through lifelong education. Using the concept of continuous learning; the government encourages all the public and private HEIs to establish one centre of life long learning (Chai and Poh, 2009). The Ministry of Education (MOE) has responded positively to this challenge by enhancing the strategic plan to increase the use of ICT in education:

- Provide sufficient ICT infrastructure and equipment to all HEIs.
- Restructure the curriculum and assessment and integrate ICT in teaching and learning process.
- Conduct training for lecturers and practitioners to upgrade their knowledge and skill in ICT.
- Encourage HEIs to adopt ICT in their management.

Some more, the MOE have shown their seriousness by incorporate e-learning into the educational system. They developed The Smart Schools project under the Multimedia Super Corridor (MSC) flagship to integrate ICT in secondary school. Teachers in schools are

provided with laptops and LCD projectors to teach selected subjects in the beginning, namely, mathematics, science and English using standalone multimedia. The setting up of the virtual universities, the Universiti Tun Abd Razak (UNITAR) in 1998 and the Open University of Malaysia (OUM) in 2000 is a proof of commitment from the government to support the challenge of online learning in HEIs. Afterwards, the government launched the MSC projects in Cyberjaya to building a digital city and also they have established the Multimedia University in 1999 to support the project (Muhammad Rais Abdul Karim and Yusup Hashim, 2004). This awareness has led to the rapid growth of open and distance learning institutions to cater the needs of the countries' human capital development and lifelong learning. The potential market for lifelong learning, in particular, is huge and may continue to increase especially in many developing countries.

3. From Classroom Learning to Online Learning

Learning never stops in man's life. Everyday, we learn something new and experience new things. According to Won Kim (2007), there are possibly several types of learning: classroom-based or virtual-based, formal or informal and scheduled or self paced. Meanwhile learning can also be classified as technology-based or people-based, independent or dependent and directive or discovery oriented (Rossett, Douglis and Frazee, 2003). No matter how many categories of learning existed, learning is seen as a linkage between instructor, learner, classroom and technology. The integration of those elements promises an efficient and effective learning. For centuries, organizations and institutions of learning used classroom-based learning to deliver teaching and learning. Knowledge was passed from a master to pupils in a one-to-one or one-to-few arrangement. In a physical classroom, an instructor and learners collaborate together at the same time. The traditional delivery system for higher education institution (HEI) has been a classroom setting with a lecturer giving a lecture and students listening, taking and writing notes. Interaction between the lecturer and students has been viewed as an essential learning element with this arrangement. We discovered the higher education has always used the lecture method to deliver materials to students. This method is still used in most HEIs programs today. Over time, the lecture method of arranging a meeting at a given place and time with many students was adopted and has now become the primary educational delivery method. However, classroom lecture has not singularly been used for educational delivery in the twentieth century. Innovations in educational delivery mechanisms have changed the learning delivery method. Advances in information and communication technology (ICT) enable little used of educational delivery methods such as distance learning to gain new life. In addition, the advances in ICT have led in a new paradigm, online learning. As a developing country, Malaysian economy has transformed from the agriculture mode to the industrial mode, been through the information age and now in the telecommunication age, formal education has become absolutely necessary for the success of individuals, organizations or countries. As we enter the telecommunication age, the demographic factor for the students has changed. Today, the students' population in HEIs include single and married, fulltime and part time, employed and unemployed, residential and non residential students. These differences have influenced HEIs to offer flexibility in course offering. The changing demographics of students, new required knowledge-skill sets, new educational competitors and as well as the revolution of the technology are driving the adoption of new educational delivery systems that bridge the time-place gap that traditional courses have created. The emerging of Internet and World Wide Web (WWW) offer non-residential education services which may be more compatible with students' lifestyles and needs. In addition, educational delivery through the Internet is

also encouraged by the increasing number of computer users and dramatic reduction in the cost of personal computers and the increased capabilities of telecommunications. Driven by the reduction cost, global access and mobility capability, HEIs believe that the implementation of distance online delivery course might provide relative advantages when compared to the traditional teaching method.

3.1. The Strengths and Weaknesses Of Traditional Classroom Learning And Online Delivery Learning

The table below shows the strengths and weaknesses of both learning method that can be concluded by the researcher. The previous researchers have reported that there are still the needs to the face to face contact in the online learning. Stodel, Thompson and MacDonald (2006) found that there are three areas of presence identified in what the learners are missing in the online learning: social presence, cognitive presence and teacher presence.

Table 1.0: The Strengths And Weaknesses Of Classroom And Online Delivery Learning.

	Strengths	Weaknesses
Classroom Learning	▪ Face to face conversation is convincing – through text, speaking, body language and expressions.	▪ The conversation can move along more and more time. The conversation will be boring and passive.
	▪ Direct interaction between the teacher and the learners – there are sense of community between the learners and teachers – quick to help, share resources and information, and respond to questions.	▪ The teacher is not well prepared with the content to deliver in the classroom. ▪ Limited access to the source of learning. ▪ Information is delivered only to the learners in the classroom in the mean time.
	▪ Full participation in the learning experience – working in groups ▪ Effective group discussion	▪ Lack of teaching and learning equipment to support the group discussion ▪ The discussion must be held in the physical classroom.
	▪ Easy to monitor, assess and evaluate the learners	▪ Instructor needs to put more attention and responsibility to monitor the teaching and learning progress.
Online Delivery Learning	▪ Online Forum and Chat - Medium of synchronous and asynchronous discussion	▪ The quality of discussion is poor and is used as a means to "report in". ▪ The discussion might become too loose and drawn out ▪ Lack of direct interaction between the teacher and the learner. ▪ It's not easy to have active learner's participation and involvement in group discussion. ▪ Lack of spontaneity and improvisation
	▪ Facilitates learning anytime, anywhere, anyplace	▪ Resource and infrastructure support – slow and limited access to the Internet, need special devices to enhance the data transmission over the Internet; band with requirement;

		information network equipment; shortage of IT skills.
	▪ Convenient and mobility – a fast and easy learning environment	▪ Lack of network support – the provider has to ensure the webpage are easily accessible anytime and anywhere
	▪ Fast and easy to share experience and knowledge between the teacher and the learner – assignment and notes posted	▪ Web site security and support – the learners might lost their interest and patience to learn.

Even though online learning provides a new set of tools that add values to traditional learning modes, the drawbacks of online learning should be taken into consideration to enhance the learning setting. Stodel, Thompson and MacDonald (2006) in their study proposed three criteria that should occurred in the education. The criteria which are based from the Garrison, Anderson and Archer (2001) might improve the teachers and learners' learning experience. Table 2.0 shows the criteria:

Table 2.0: Social, Cognitive and Teacher Presence (Garrison, Anderson and Archer (2001) as cited in Stodel, Thompson and Macdonald, 2006)

The Criteria	Description
Social Presence	▪ Development of social community - Communication, interaction, interpersonal relationships, perception and reaction. ▪ Facilitate the attainment of the cognitive learning objectives by supporting critical thinking in a community of learners through affective, interactive, and cohesive responses.
Cognitive Presence	▪ Development of critical thinking community – community of inquiry, ability to construct and confirm meanings through sustained reflection and discourse. ▪ Four phases of practical inquiry: triggering event, exploration, integration, and resolution.
Teacher Presence	▪ Supports and enhances social and cognitive presence and is "most directly under the control of teachers". ▪ There are three categories of teaching presence: design and organization, facilitating discourse, and direct instruction.

4. Blended Learning

As both the traditional classroom learning and online delivery learning have offered strengths and weaknesses, it is great to combine the strengths of the two methods into blended learning. Blended learning applies the use of technology in the physical classroom learning. The technology makes possible a variety of resources and contributes to enhance experience in learning. The researcher has conducted a comprehensive review of the literature to find a common definition for blended learning. There are several of precise definitions of blended learning given by the previous researchers. They point out:

- ✓ *Blended learning is learning outside the traditional classroom using information technology for the delivery of the learning materials (Won Kim, 2007).*
- ✓ *Combination of two kind of learning environment, physical classroom learning and online learning to enhance the learning outcomes (Kudrick, Lahn and Morch, 2009).*
- ✓ *The mixing of traditional face to face approach with online approach (Kim, Bonk and Oh, 2008).*
- ✓ *Combination of multiple delivery media designed to complement each other and promote learning and application learned behavior (Singh, 2003)*

Hence, blended learning is an approach that mix and combine the strengths of the two methods, face to face and online learning. Teaching and learning activities are delivered through synchronous and asynchronous formats. The blended learning provides instructors and learners with a comprehensive learning model. They may experience the excitement of physical classroom formats such as lectures, books, labs, handouts and the integration of telecommunication technologies; computer, Internet, World Wide Web and mobile phone in their teaching and learning processes. The blended learning becomes a popular approach at HEIs. With combination of various delivery modes, blended learning not only offers more choices but is also more effective. Blended learning is expected:

- To develop social communication in HEI's community.
- To increase learners' competence and confidence.
- To provide a quality learning experience.
- To develop critical thinking in learning environment.
- To integrate technology as an affective tool to deliver contents to learner.

Rosset, Douglis and Frazee (2003) mentioned blended learning as an integrated strategy for delivering on promises about learning and performance where it involves planned combination approaches such as coaching by a supervisor; participation in an online class; breakfast with colleagues; competency descriptions; reading on the beach; reference to a manual; collegial relationships and participation in seminars, workshops and online communities. Thus, blended learning has been found providing link to three criteria: social presence, cognitive presence and teaching presence (Garrison, Anderson and Archer (2001). Blending approach also provides various learning delivery medium. According to Singh (2003), learning can be formed in three formats and is shown in the table below:

Table 3.0: Learning Approaches and Choices (Singh, 2003)

Synchronous physical formats (live classroom learning)	- Instructor-led classroom & lectures - Hands on labs & workshops - Field trips
Synchronous online formats (live e-learning)	- Online meetings - Virtual classrooms - Web seminars & broadcasts - Coaching - Instant messaging - Conference calls
Asynchronous formats (self-paced)	- Document & web pages - Web/computer based training modules - Assessments/Tests & Surveys - Simulations - Job aids & electronic performance support systems (EPSS) - Recorded live events - Online learning communities & discussion forums - Distributed & mobile learning

5. The Benefits Of Blended Learning

Blended learning is a natural idea of learning approach. This blending approach is taking the best from self-paced, instructor-led, distance and classroom delivery to achieve flexible, efficiency and cost effective learning. Blended learning is an approach generated from

disappointment of online and traditional learning. It offers greater benefits to the instructor and learners in terms of the teaching and learning activities. The following are some of the benefits of blended learning:

1. Enhanced Social Interaction, Communication And Collaboration.
Blended learning connects people, activities and events through technology. It is a key tool for building and sharing cultural understanding on a global basis. In addition, the interaction between learners and instructor, as well as learners with other learners may build online communities and learning practices where knowledge, ideas, experience and learning products are exchanged and valued.

2. Offers Flexibility And Efficiency
Blended learning may primarily function as a replacement for or extension of face to face environment. It combines offline and online learning where the online learning refers to the use of Internet in the learning activities. While an offline learning happens in a more traditional classroom setting. The Internet provides flexibility and efficiency in teaching and learning activities. The teaching and learning session can be conducted via video or teleconference where learners can attend the class session via online. Study materials and research resources are easily navigable over the web. The application provided over the Internet such as e-library, e-book, e-resources and others offer opportunity to learners and instructors to explore the virtual medium. Hence, blending open the doors to increasing contents of learning and improving the instructor and learners' experience while minimizing cost.

3. Extend The Reach And Mobility
The emerging of information and communication technology has changed the learning approach. With the increasing use of mobile and wireless technologies, the time and place for learning can take place anywhere at anytime. The blending of delivery mechanisms, instructional approaches, technologies, and learning situations, will evolve to support learning which is individualized yet collaborative and interactive, that is timely and directed toward a specific need yet part of a lifelong learning journey, and that is complex and yet ubiquitous and seamlessly integrated into the learning landscape. Thus, it is possible that such technologies are able to make learning more easily accessible and promotes rich, interactive learning experience.

4. Optimizing Development Cost And Time
Blended learning combined different delivery modes that balance out and optimize the learning program development and deployment costs and time. Internet is a tool to deliver online learning supports a greater range of learning styles and individual differences in learning at a minimum cost. This virtual medium is purposefully designed to further enhance a community of practice. Singh (2003) explained, a totally online, self-paced, media-rich, Web-based training content may be too expensive to produce (requiring multiple resources and skills), but combining virtual collaborative and coaching sessions with simpler self-paced materials, such as generic off-the-shelf WBT, documents, case studies, recorded e-learning events, text assignments, and PowerPoint presentations (requiring quicker turn-around time and lower skill to produce) may be just as effective or even more effective. In addition, the following are some of the benefits provided by blended learning to HEIs community:

- Offers efficient and effective approach
- Provides more choices about learning to learner
- Increase learning resources and experiences
- Encourage independence and conviviality.

6. The Growth Of Blended Learning In Higher Education Institution in Malaysia

Technology is no doubt has an important place in HEIs. Blending method becomes popular to HEIs community in Malaysia. Open University of Malaysia (OUM) is using blended learning approach in their teaching and learning activities. OUM is successfully leveraging on technology to provide blending method to their students and tutors to optimal learning and teaching support as well as experience. According to Zoraini Wati and Halimahton (not dated), OUM is committed to bring the blending method in education. Moreover, its vision is to be a leader and innovator in open learning.

6.1. Blended Learning At The Open University of Malaysia.

Open University Malaysia (OUM) merely has 753 students in August 2001, and it has grown to almost 45 000 (in May 2006) students five years later and the enrolment of the students is increasing about 53 000 today. Although the number of students has grown by almost 60 times, the number of full-time faculty has grown by three times over the same number of years. Additionally, OUM engages over 3 500 part-time tutors. OUM offers various learning technologies to continue to provide optimal learning and teaching support. In line with this, the university provides a learner-centered environment via the use of various media (largely technology-based) to deliver instruction. In the process, the ICT (information communication technology) and learning skills that learners acquire will better prepare them for lifelong learning in a knowledge society. Tutors will facilitate part of the learning and to provide greater educational value, learners are encouraged to learn collaboratively through virtual discussion forums. Hence, OUM formulated a blended learning approach in its learning and teaching environment. This blend comprises self managed learning, online learning and face-to-face interaction (Zoraini Wati and Halimahton, not dated).

- **Self Managed Learning**

OUM develops modules for each course offered. Many open distant learning institutions such as the Open University in the United Kingdom, UNISA (University of South Africa), Korean National Open University, Indira Gandhi National Open University and Open University Hong Kong provide print modules for their students despite the wide range of learning technologies available to them. Print modules at OUM are designed to be self-instructional, self-exploratory, interactive, and learner-friendly and go through a systematic process of development. OUM trains module writers to write the way OUM wants it and appoints moderators to ensure that the contents are accurate, relevant and sufficient. To help the students cope with learning at OUM, one of the first two compulsory courses required of every student titled, "Learning Skills for Open Distance Learners," is designed to help the students understand OUM's blended learning in general and self-managed learning in particular. This course is compulsory to students to take this in the first semester (Zoraini Wati and Halimahton, not dated).

- **Face To Face Interaction**

It is also felt that students will not be able to cope by just reading the print modules, that is, learning in isolation from others. Hence, face-to-face interactions in the form of fortnightly tutorials are blended together with other instructional formats. Attendance at face-to-face tutorials is, however, not compulsory for students. Tutorials involve explanations of key concepts are given, discussions of applications of concepts are held and exercises are done together. It is also when hands-on activities, demonstrations and presentations are held. In addition, tests are administered during two of the five tutorials. Each tutorial group is kept to 25 students and the same group goes online for discussions with their tutor. The latter is known as online learning (Zoraini Wati and Halimahton, not dated).

▪ **Online Learning**

From the beginning, online learning is one of OUM's primary modes of learning. Originally limited to a few forms such as multimedia courseware, learning objects and online forum discussions, it has today expanded to include video conferencing as well as audio and video streaming. Online learning at OUM is delivered via the university's myLMS, a learning management system that has evolved functionally over the semesters. Online forums have become increasingly useful and valuable since the introduction of Collaborative Online Learning in several of the courses in 2004. This online discussion is perceived as a two way forum between tutor and students and it is a useful channel for multi-discussions relating to concepts, theories and applications. Teachers are a critical component of bounded learning communities. OUM felt that their teachers or tutors must model effective collaboration and knowledge construction, apply instructional strategies, supervise students' activities, monitor and assess learning, providing feedback, remediation, and grades, troubleshoot and resolve problems, including meeting needs of hard-to-reach students, and establish trusting relationships with students (Zoraini Wati and Halimahton, not dated).

6.2. The Impact Of Blended Learning At The OUM

The OUM has launched their myLMS to provide better facilities in teaching and learning activities to their students as well as their tutors. The collaborative approach between traditional classroom and online learning makes learning more interesting. An OUM student is already provided with the print module, and they can simply join the online forum via the myLMS to participate in an online discussion forum where they can exchange information and ideas with their peers and tutors. myLMS increases the learning experience among the students by providing the online application such as iTutorials, iWeblets and iRadio. According to Zoraini Wati, blended learning has enabled OUM to leverage on technology to reach a wider audience no matter where they are. This global reaches feature supports access to myLMS 24-7. The ubiquity of the technology increased the efficiency and timely in content delivery. For example, the online forums have enabled not only the socialization among students and tutors, but more important, these forums are supporting constructivist learning through joint collaborative learning where knowledge is built upon each other's posting in response to issues raised for discussion. In addition, it has allowed students, who are generally passive in the physical classroom to actively speak their minds, share their experiences and give their opinions online. Generally, blending the online delivery learning with traditional classroom learning appears to be more effective than either conventional methods or individual forms of e-learning. Blended learning has been able to support as democratize education by providing the various learning styles. It also provides learning opportunities wherever the students are in the most flexible way possible. It is believed that as OUM progresses, the blended learning model will continue to evolve towards providing a learning environment that will contribute to produce a conducive education environment (Zoraini Wati (no date) as cited in UKM proceeding seminars in education, 2006).

7. The Propose Framework of Effective Blended Learning in Higher Education Institution

There are several propose frameworks of blended learning developed by the researchers. The framework basically consists few of elements from the both delivery methods of classroom and online learning. In this study, the researcher has conducted a literature review on blended framework proposed by researchers. The following are some of the frameworks:

7.1. Khan's Octagonal Framework (cited in Singh, 2003)

The framework has eight dimensions: institutional, pedagogical, technological, interface design, evaluation, management, resource support, and ethical (see Figure 1). Each dimension in the framework represents a category of issues that need to be addressed. These issues help organize thinking, and ensure that the resulting learning program creates a meaningful learning experience.
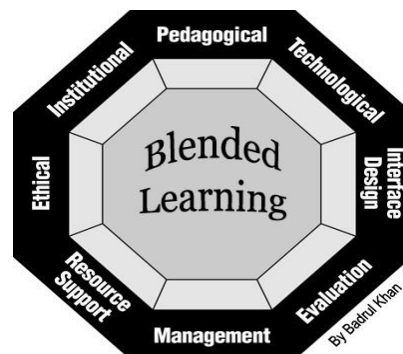

Figure 1. Khan's Octagonal Framework.

- Institutional - The Institutional dimension addresses issues concerning organizational, administrative, academic affairs, and student services.
- Pedagogical - The Pedagogical dimension is concerned with the combination of content that has to be delivered (content analysis), the learners' needs (audience analysis), and learning objectives (goal analysis). The pedagogical dimension also encompasses the design and strategy aspect of e-learning.
- Technological - This dimension addresses the need for the most suitable learning management system (LMS) that would manage multiple delivery types and a learning content management system (LCMS) that catalogs the actual content (online content modules) for the learning program. Technical requirements, such as the server that supports the learning program, access to the server, bandwidth and accessibility, security, and other hardware, software, and infrastructure issues are addressed.
- Interface Design - The Interface Design dimension addresses factors related to the user interface of each element in the blended learning program.
- Evaluation - The Evaluation dimension is concerned with the usability of a blended learning program. The program should have the capability to evaluate how effective a learning program has been as well as evaluating the performance of each learner.
- Management - The Management dimension deals with issues related to the management of a blended learning program, such as infrastructure and logistics to manage multiple delivery types.
- Resource Support - The Resource Support dimension deals with making different types of resources (offline and online) available for learners as well as organizing them.
- Ethical - The Ethical dimension identifies the ethical issues that need to be addressed when developing a blended learning program such as equal opportunity, cultural, diversity, and nationality.

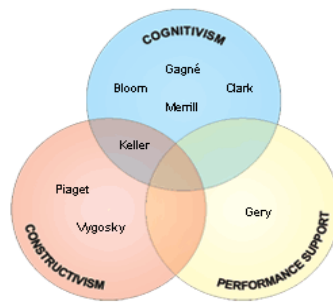### 7.2. Carman's Blended Learning Process (2005)

Figure 1: A Blend of Learning Theories

By applying learning theories of Keller, Gagné, Bloom, Merrill, Clark and Gery (cited in Carman, 2005), (see Figure 1), Carman has mentioned five key ingredients emerge as important elements of a blended learning process (see Figure 2):

1. Live Events: Synchronous, instructor-led learning events in which all learners participate at the same time, such as in a live "virtual classroom."
2. Self Paced Learning: Learning experiences that the learner completes individually, at his own speed and on his own time, such as interactive, Internet-based or CD-ROM training.
3. Collaboration: Environment in which learners communicate with others, for example, e-mail, threaded discussions and online chat.
4. Assessment: A measure of learners' knowledge. Pre-assessments can come before live or self-paced events, to determine prior knowledge, and post-assessments can occur following scheduled or online learning events, to measure learning transfer.
5. Performance Support Materials: On-the-job reference materials that enhance learning retention and transfer, including PDA downloads, and PDFs.

7.3. Design Framework of Blended Learning (Sale, no date)
The effective development of blended learning can best be achieved through recognition and application of the following:

1. Effective blended learning is firstly about good learning design
2. Good learning design is grounded on core principles of learning
3. Core principles of learning must be thoughtfully applied in relation to specific learning outcomes, learner characteristics, learning environment and resource availability
4. ICT's are used to enhance specific aspects of the learning process
5. The completed blended design maximizes the affordance of a range of learning modes and mediums.

7.4. Determining the Best Blended Learning Mix (Marsh, 2001)
To determine the most effective blended learning mix for your training project, you will need to gather information regarding the following:

▪   Target audience description: It is critical to know as much as possible about the target audience   when designing blended learning. In particular, it needs to know their familiarity and comfort   level with learning via computers.
▪   Skills/content: The type of skills and content learners need to master will greatly influence the delivery methods which are selected. Some skills require interaction with an instructor, while others are best learned in a self-paced environment.
▪   Technical resources: Blended learning depends on the organization's technical resources. The organization must cataloguing the infrastructures they does and does not have will narrow

down the choices available to organization and help them avoid making costly mistakes.

- Personnel resources: The personnel resources available for development, delivery and technical support.
- Budget/time constraints: There are always budget and time constraints that must be considered
  in choosing blended learning mix.

The primary goal of blended learning is to combine the interactivity of instructor-led training, the flexibility of self-paced learning, and online tools for building a learning community. From the proposed frameworks reviewed, to design effective blended learning framework or model, the researcher thought there should take to obtain for the following elements:

- Technological or technical resources
- Pedagogical
- Evaluation or Assessment
- Institutional
- Skill and Content
- Collaborative and Interactive modes

8. Discussion and Conclusion

Teaching and learning is an evolutionary process, it never ends. It has evolved from a total teacher/classroom dependent stage to an online environment. The emerging of computer and other technologies had made teaching and learning activity a very dynamic process. This study is conducted to examine the implementation of mix mode approach, blended learning in HEIs in Malaysia. The paper has outlined the precise definition of blending and some of the benefits of this approach. Moreover, this study also reviewed a few models or frameworks proposed by the researchers to generate the best blended learning models. All models are not argued as equally good. Some models are better than others and it is almost impossible in contrary, to design a perfect model. In the context of designing blended learning framework and model, the challenge faced by educators and learners when technology-focus is in place is to maintain the flexibility and imagination to adapt the tool to new uses as they arise (Chew, Jones & Turner, no date). Again, according to Chew et.al (no date), today, blended learning researchers seem to have an emphasis toward practices without a clear understanding of or underpinned educational theories. Hence, the need to explore educational theory and its relationship with technology is essential. And as well, the power and potential of the technological and the skills of the teacher should be blended together to offer totally great learning experience to learners at all levels. A well blended learning approach is expected to be able to cater for the diverse needs of most learners.

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