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Addressing e-learning challenges via blended learning :

The Open University Malaysia approach

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INTRODUCTION

The term blended learning is used to describe a solution that combines several different delivery methods with the view of optimizing resources and maximizing learning. While blended learning is not a new concept, many organizations are innovatively combining electronic delivery with other non–electronic modes of delivery. The more accepted form of electronic learning is via e–learning as it satisfies current day demands of just–in–time learning, just–for–me learning and anytime learning. And e–learning gets better by the day as the technology that supports such learning is continuously being improved. But then, what is stopping institutions of higher learning especially open and distance learning institutions from adopting e–learning in totality? It is a challenge that needs to be addressed in an intelligent manner, so that at the end of the day, what matters is student satisfaction of the learning services provided to them. Whilst, Open University Malaysia (OUM) recognizes the tremendous value of e–learning we are also aware of the constraints our students will face if only this method of learning is adopted. In this respect, two identified constraints that affect our students are accessibility and affordability of the technology.

As such, to create a high learning value we decided to adopt the blended learning approach as we recognize that each mode of learning has it's strengths and weaknesses. Smith describes blended learning as a method of educating at a distance that uses technology (high–tech, such as television and the Internet or low–tech, such as voice mail or conference calls) combined with traditional education or training. We recognize the key to blended learning is selecting the right combination of learning modalities that will bring equal and satisfying returns to both the organization and the learners. This was only possible by first evaluating our learners, especially the peculiar characteristics that they carried with them as distance and continuing students, the amount of time they had for life–long learning activities, the motivation and the connectivity issues for e–

learning. Studies have shown the impact of blended learning on the total development of the learner, for example, DeLacey and Leonard (2002) reported that student interaction and satisfaction improved when e–learning options were added to traditional forms of learning, whereas Thomson and NETg reported a speedier performance on real-world tasks by students who learned through a blended pedagogy.

As such, blended learning adopted at Open University Malaysia is composed of two levels: the macro and micro level. At the macro level we provide the following options – self–managed learning, face–to–face learning (actual classroom learning) and online learning (virtual classroom learning). At the micro level, there is a more refined blend of resources for self–managed learning, face–to–face learning strategies and online learning modalities to suit complexity of content, availability of teaching resources, number of students enrolled for a particular course and technology. Our model of blended learning is not static, as we recognized that while the classroom is still a very powerful and effective learning modality, there are also many other options that will surface equally well in time to come. Our future plans are to increase the e–learning factor in our blended approach especially when student numbers increase, the technology becomes more amenable and also as we go off-shore with our programmes. As there are numerous technology hurdles inherent to the Malaysian scholar, this will be researched in detail before an e-learning culture is fully adopted.

THE OUM APPROACH

Currently, most countries are faced with demands of the information and learning age and it is vital that a reassessment of higher education is conducted to meet the needs of a changing economic order. Previously, the professor was the centre of most knowledge, now it may not hold true anymore. With much change in technology and constant information updates, it is a challenge for educators to keep abreast with students who may be ahead of them in terms of acquired knowledge. And why not? e-Learning seems to be the panacea for many such students: with the click of a mouse, the world's best teachers, libraries and experts are there for them to explore.

Whilst e-Learning may be the answer to many for a more fulfilling learning experience, many more are also at a greater disadvantage because of e-Learning. Among them are the monetarily poor, the mentally poor and the rural poor. Thus in some cases, e-Learning may not be seen as a problem-solver but a problem generator – it makes the information and learning gap bigger. As such the onus for a better education is on the providers of education for the best fit learning. At Open University Malaysia (OUM), we started with the premise that we will provide meaningful and satisfied learning experiences at an affordable price and at the same time not short-change our students where the state of the art services are concerned. We are aware of the fact that the learning process is more complex for our students who are not only older, but are quite contented and secure in their jobs and with their families and that most of them are continuing their studies to qualify for a better job. We are also aware of the lack of motivational factors, the absence of immediate teacher support and the dependence on technology for immediate gratification. As such we adopted the blended approach to learning.

BLENDED LEARNING DEFINED

At OUM, the term blended learning is used to describe a learning environment that combines several different delivery methods with the view of optimizing resources and maximizing learning. While blended learning is not a new concept, many organizations are innovatively combining the new forms of electronic delivery with other non-electronic modes of delivery. Depending on the technological ladder one is at, one's definition of blended learning will differ. For example, in Australia, the NSW Department of Education and Training defines it as learning which combines online and face-to-face methods. The term blended learning is used to describe 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-paced learning (Valiathan, 2002). Rosett, Douglis and Frazee (2002) describes blended learning as involving a planned combination of 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. Further Rosett et al proposed a variety of blends using the matrix below:

Live face-to-face (formal) • Instructor-led classroom • Workshops • Coaching/mentoring • On-the-job (OTJ) training	**Live face-to-face (informal)** • Collegial connections • Work teams • Role modeling
Virtual collaboration/synchronous • Live e-learning classes • E-mentoring	**Virtual collaboration/asynchronous** • Email • Online bulletin boards • Listservs • Online communities
Self-paced learning • Web learning modules • Online resource links • Simulations • Scenarios • Video and audio CD/DVDs • Online self-assessments • Workbooks	**Performance support** • Help systems • Print job aids • Knowledge databases • Documentation • Performance/decision support tools

On the other hand, Bersin (2003) found that programs with the highest impact, blend a complex media with one or more of the simpler tools. A web-based course for introduction followed by a real hands-on interactive class is an obvious mix. They go further to recommend the right blend: that is a mix of 2 or 3 of these ingredients: classroom, interaction, web-based courseware, CDROM courseware, forum, conference calls, virtual labs, simulations, text-based job aids and mentors.

According to Garrison, Hanuka & Hawes (2003), blended learning is the integration of face-to-face and web-based learning. They further elaborated that when thoughtfully designed, blended learning approaches offer opportunities to enhance the campus experience and extend learning through the innovative use of Internet information and communication technology. Meaningful learning events that are active, intentional, authentic and collaborative are fundamental to facilitating effective blended learning, and can capitalize upon the unique properties of Internet technology. For example, text-based Internet asynchronous

communication media encourages reflection and connectivity, and provides unique opportunities for collaborative learning and critical discourse.

Alternatively Masie E. (2002, pg. 59) categorizes blended learning as a mix of two or more distinct methods of training as is exemplified below:

- Blending classroom instruction with on-line instruction
- Blending on-line instruction with access to a coach or faculty member
- Blending simulations with structured courses
- Blending on-the-job training with brown bag informal sessions
- Blending managerial coaching with e-learning activities

THE E-LEARNING CHALLENGE

e-Learning refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance. It combines both WBL and knowledge management attributes (Rosemberg, 2001). In OUM, the adopted definition for e-Learning is harnessing the internet and related technologies to create an effective and efficient learning environment as demanded by the individual learner. The challenge is thus seen as two fold here: building sustainable Internet facilities and powerful content; and managing the interactions into knowledge database to be tapped by others in the learning environment. Currently, not many learning institutions or learning systems have been able to do this. To top it, in Malaysia there are other challenges that need to be considered: connectivity, affordability, learnability and sustainability. In terms of connectivity, the better dial-up connections give an average of between 40-45 \bps. and this is mainly in areas where the nodes are readily available. In rural and out-lying areas in Malaysia, it could go as low as 20 \bps. and to get a connection can be a long and laborious affair. In terms of affordability, both the institution and learner affordability has to be considered. On the one hand, video-conferencing might still be a heavy cost factor to the institution, and Internet might be long and laborious the more affordable one but video-conferencing might be the more easier solution for the learner in terms of access, whereas Internet might be a problem.

In Malaysia many students are still unable to purchase a computer and pay for Internet connection and to top it technology, transmission, maintenance, and infrastructure components might be the unseen cost factors that are not factored in when they purchase a computer. Learnerbility is the ability that a person has to quickly grasps ideas. In the e-Learning environment, reading abilities are most crucial for a smooth learnability factor followed by the command for language. Sustainability refers to the ability of both the technology and learner to keep up with current demands. The technology provider must be able to sustain higher technology demands from the learner; the learner must be able to sustain new technological innovations. With all the above factors in mind, just-in-time, just-for-me, learning-on-demand and anytime learning might not hold true all the time for e-Learning effectiveness.

And whilst countering physical factors is an e-learning challenge, other challenges include mental abilities (the steep learning curve), hardware incompatibilities, software bugs and user error. These factors need the right support so that the student is not inconvenienced. There is so much to learn about computers that using the computer is more then just buying a computer: you have to strike a relationship.

In sum, whilst we recognize that e-Learning has many benefits, we are not ready to implement it in toto and that the key is blended learning: that is selecting the right combination of learning modalities that will bring equal and satisfying returns to both the organization and the learners.

WHAT RESEARCH SAYS ABOUT BLENDED LEARNING

The most extensive research on blended learning is thus far conducted by Bersin & Associates (2003) but the focus is mainly on corporate blended learning programs. More than 30 corporations were reviewed in 2002 and 2003 which culminated into a report titled *Blended Learning: What Works.* According to Bersin & Associates, among others the goal of the research is to provide detailed information about real-world implementation and strategies that work. Among some of the findings from them include:

- Why do e-learning programs fail? After interviewing dozens of program managers, we found that the biggest reason is not "content" -- it is program management.

- The fact that when companies are making decisions about what media formats to blend together, they are essentially managing their portfolios.

- Blended learning does not have to cost millions of dollars, and that a common blended approach was to create electronic content and surround it with human, interactive content.

What can be concluded from the research report by Bersin and Associates is that it is very corporate in nature and that it is biased towards e-Learning, i.e. the definition of blended learning is almost equal to qualities found in e-Learning.

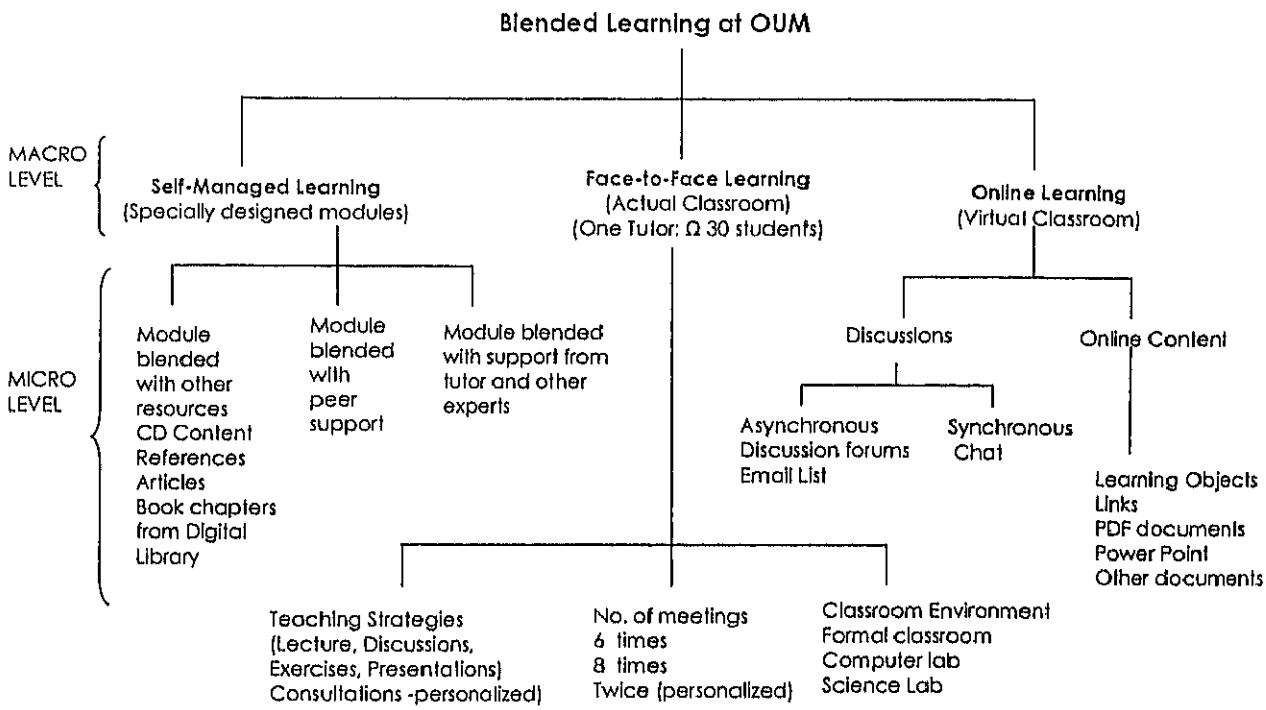
Other studies reveal the following:

Student interaction and satisfaction improved when e-learning options were added to traditional forms of learning (DeLacey and Leonard, 2002).

A speedier performance on real-world tasks by students who learned through a blended pedagogy (Thomson and NETg).

THE OUM MODEL: TWO LEVELS OF BLENDED LEARNING

Blended learning at OUM can be discussed at two elaboration levels: the macro and the micro, and is represented graphically as such:



MACRO LEVEL BLENDS

At the macro level, the following are key characteristics: self-managed learning, face-to-face (actual classroom) learning and online (virtual classroom) learning.

Self-Managed Learning (SML). Self-managed learning at OUM is essentially based on print-based materials (specially constructed modules) and supported by specially designed CDROM courseware. Print is the foundation of blended learning and the basis from which all other delivery systems have evolved. We recognize the fact that in an open & distance learning environment, the first distance-delivered courses were offered via print materials which have not lost its flavor. While technological developments have added to the repertoire of tools

available to the distance educator, print continues to be a significant component of all open and distance learning programs.

At OUM, learners are required to invest a total of 40 learning hours to one credit hour of study. Thus, the most important component of OUM's is the print-based modules which provide learners with basic reading content and also activities to help them understand and apply subject matter. These have been designed using effective instructional design features such as 'think' activities, 'your ideas' and specially selected practice exercises. Specially constructed print-based module has many advantages over a textbook in an ODL environment and can be represented as such:

Textbook	Module
▪ Learners read through, digesting knowledge as they go.	▪ Instructional design is incorporated. ▪ Learners go through, stop and reflect, do assignments and apply knowledge to their own situation.
▪ It is designed according to the logic as seen by the author	▪ It is designed with the needs of the learners forecast.
▪ It is normally in an impersonal, academic style.	▪ It is normally in a more personal, informal style.
▪ It is divided into chapters which may take many hours to read.	▪ It is divided into units of study time which make it easier for learners to manage their learning.

At OUM, students are also referred to textbooks/references and websites and are also encouraged to read what is available in the digital library.

Face-to-Face (Actual Classroom). In face-to-face (actual classroom) interactions, OUM learners meet approximately six times in a semester and each meet lasts for 3 hours. The teaching strategies employed are a blend of the following: lecture, discussion, exercise and presentation. Although students are required to meet six times a semester for 3 hours, again the blend may range from meeting twice to eight times and anywhere from between 1 hour to 4 hours. This is due to the fact that we offer personalized learning service to students where class enrolments are less than 5 students. On the other hand we also have extended hours for students who have lab work.

Online (Virtual Classroom) Learning. In online learning, learners meet their tutors and peers virtually. A LMS caters for this and OUM has built one LMS called myLMS. The most important component in the MyLMS is the forum whereby online discussions pertaining to a relevant topic are conducted. Here, collaborative learning takes place whereby peers support peers and a tutor supports learners. The online blend is very interesting and unique. Firstly, the stage does not belong entirely to the teacher. Secondly, learners have time for reflection and thirdly they can depend on their peers for support and motivation. As such, the repertoire of blend may extend from the learners starting a discussion topic, to the learners seeking answer to queries; to learners suggesting further reading materials to their peers and teachers. In the virtual classroom, any form of discourse is possible; but tutors and learners are given behaviors/expected outcome guidelines.

MICRO LEVEL BLENDS

Micro Level 1: Self-managed Learning Blends

At the micro level, self-managed learning takes on a different blend depending on the learner characteristics, the content learnt, the resourcefulness of the tutor and learner, the strength of the module, availability of learner time and accessibility to other learning materials. Learners have different learning styles and they need to be made aware of this. At OUM, we increase awareness via learning skills courses, whereby the learner is made more conscious of his/her learning style so that a maximal learning outcome is achieved. Thus, if a learner is more of an auditory person, it will suit him if he reads the print-based materials out aloud. Similarly a visual learner is often advised to jot down important points, make notations while reading and drawing maps.

At the content level, the blend of self-managed learning takes a different tangent again. Technical subjects need more learner hands-on approach, more kinesthetic activities, more understanding than memorizing. Tutor and learner resourcefulness will also give a different blend to SML as tutor can help support the learner in understanding the modules by allowing learners to call/meet up at a time and place that is convenient to both. Learner resourcefulness will include

forming learning groups to discuss the print materials. We cannot deny the fact some modules are better written than others and this can be attributed to the amount of effort that is invested as exemplified by the following phrase: *when something can be read without effort, great effort has gone into it's writing.* As such modules that are seamless will enable the learner to digest information in a much better and efficient way and those that are not will require the learner to adopt some strategies like group discussion. Learners benefit significantly from their involvement in small learning groups. These groups provide support and encouragement along with extra feedback on course assignments. Most importantly, the groups foster the feeling that if help is needed it is readily available. At OU Malaysia we envisage that the learner has between 1-2 hours of learning time if they plan their day well. Thus learner time is also a crucial factor in determining the blend in SML.

Micro Level 2: Face-to-face (Actual Classroom) Blends

Face-to-face (actual classroom) blends will depend on the number and variety of students, the total classroom climate (structure, interactions, resources), tutor experience and readiness. But of all the reasons mentioned, teacher/tutor readiness will determine how successful the classroom mode is. According to Idaho University, ODL learners value tutors who are well prepared and organized as they benefit significantly from well prepared handouts, presentations and group discussions, as is explicated below:

- Learners are more motivated if they are in frequent contact with the instructor. More structured contact might be utilized as a motivational tool (Coldeway, et al., 1980).
- Utilization of on-site facilitators who develop a personal rapport with students and who are familiar with equipment and other course materials increases student satisfaction with courses (Burge & Howard, 1990).
- Learners value timely feedback regarding course assignments, exams, and projects (Egan, et al., 1991).

Micro Level 3: Online (Virtual Classroom) Learning Blends

Many factors affect micro-blends at the online level such as the connectivity, the availability of resources, the kind and amount of support given by the tutor and the subject matter experts and most of all the volume and intensity of interactions. Tutor and peer online support will determine the manner in which the learner is benefiting from such interactions. Many distant learners require support and guidance to make the most of their online learning experiences. This support typically takes the form of some combination of student-tutor and student-student interaction (please see **Appendix 1** for a sample of such interactions).

FUTURE PLANS

Our model of blended learning is not static – it will be suited to the changing trends and demands of society, technological progress, and socio-economic standing. It cannot be denied that technology will become cheaper, faster and accessible for more people. Based on the technological factor itself, it can be said that the percentage of e-Learning will be much higher in the blended learning equation. The e-Learning factors are reflected through the following:

1. More progress in technology – Statistics show that dial-up rates and Internet usage rates have fallen. According to Harris (2001), some other technological changes include the prediction that there will be more VoIP (Voice over Internet Protocol) whereby 30% of all long distance calls will be carried across the Internet for free by 2005, usage of biometric (finger-print, voice, retina-scans) data for Internet security will become the norm, and by 2010 we will have real time, instantaneous international translation, so that when you speak in Bahasa for example, someone in Egypt will hear you speak Arabic.

2. More digitized content – Digital content creation at OUM will be faster as we have now progressed from the traditional style of programmer and process dependent development to academic dependent creation. As a result of research, the following are suggested: creation of instructional templates for academics which require the least programming so that they

can create powerful digital content, providing academics access to reusable templates so that they could easily change similar instructional style available in another content to suit to theirs and use reusable templates to easily suit to curriculum demands.

3. More technology savvy learners – As time progresses, more and more students will become technology savvy in terms of knowledge and acquirement of skills. This will mean that their attitudes towards the role of technology will also become more positive. Once attitudes are positive, the motivational level increases. This will result in better usage of available technology.

4. More technology savvy tutors – For OUM to increase the e-Learning equation, the teaching staff must be technology savvy enough to carry our programmes through to the learners. It is our strong belief that our more than 600 tutors will become more technology savvy due to two main reasons:

   a. continuous training in use of technology to enhance learning provided by OUM and

   b. build-up of positive relationships with the technology through constant usage.

5. More intelligent learning systems – As the technological know-how progresses, learning systems become more intuitive to the needs of learners and teachers. Throughout the world, research is being carried-out on how learning systems can be made more personalized to realize learning-on-demand to cater to individuals' needs.

CONCLUDING REMARKS

The OUM two-tier blended model is currently very applicable to the needs of our students as well as our institution. The approach is well received as can be seen from the phenomenal growth in student numbers (close to 15,000 students in 2

years) and the number of tutors who are willing to come on board (a total of 5000 applied to be our tutors). In developing countries, due to numerous constraints, it would seem that such two-tier blended pedagogy is the best as technological factors such as accessibility and competency (skills) are considered and factored in. Further, our blended learning approach is contextual in nature: suiting to the psychological as well as socio-economic factors of our populace. However, many more developed countries have a different view of blended learning, one that is more technology oriented, probably because the infrastructure is in place and the populace is ready.

As a final remark, the two-tier model with a greater emphasis on flexible learning is a more desired model especially for developing countries. This is in lieu of the fact that developing countries have students enrolments running into the hundred thousands (eg. China Radio & T.V. University (more than 530,000; Indira Gandhi National Open University (IGNOU) approx 1,000,000; Universitas Terbuka (UT) more than 350,000; Sukhotai Thammathirat Open University (STOU) more than 3000,000 and Anadolu University, more than 600,000). Countered also with the fact that there are other more urgent socio-economic issues at hand, technology infrastructure for teaching-learning might not be so urgent in these countries. Thus a focus on specially created print-based self-managed learning materials and face-to-face interactions supported by the web is a more viable option.

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