

# Opportunities for Adult Learners Through Integrated E-Learning

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## Abstract

*The distance learning environment has a major contribution to make to the educational requirements of the 21st century by encouraging the acceptance of lifelong learning (LLL). Keeping pace with changes in technology and meeting the increasing demands of the knowledge based economy requires a highly skilled and educated workforce. The solution would then have to be to foster educational opportunities which would invariably lead to continuing education through the concept of LLL. Avenues would then point to integrated e-learning with its egalitarian environment of open access and greater opportunities for the learners particularly the adult learners. The integrated e-learning opportunities would be able to satisfy the students' need for convenient offerings and at the same time maximize the use of online teaching technologies, facilities and resources reducing presence in a classroom environment. Arguably traditional classroom methods present an important presence in the teaching-learning process but the use of technology presents the challenges of the future. Technology has now integrated into higher education and this paper attempts to explore the opportunities and challenges that online learning in general and Open University Malaysia in particular face in implementing lifelong learning to cater to the adult learners.*

**Keywords:** *Lifelong Learning, Integrated E-Learning*

## Introduction

The distance learning environment has a major contribution to make to the educational requirements of the 21<sup>st</sup> century by encouraging the acceptance of lifelong learning (LLL). Keeping pace with the demands of LLL requires an effective platform to deliver instruction to the learners. Avenues would then point to online learning with its egalitarian environment of open access and greater opportunities for the learner particularly the adult learner. The solution would then have to be to foster learner-centered

educational opportunities through integrated e-learning. The integrated e-learning opportunities would be able to satisfy the learners' need for convenient offerings and at the same time maximize the use of online teaching technologies, facilities and resources reducing physical presence in a classroom environment. Integrated e-learning implies that there is less dependence on rote learning, repetitive tests and a 'one size fits all' type of instruction and more on experiential discovery, engaged learning, differentiated teaching and the building of character through innovative and effective teaching approaches and strategies. In doing so, the elements of content, interactivity, collaboration and assessment become the pillars to realize the integrated e-learning delivery mechanism. Capitalizing on these elements, Open University Malaysia (OUM) with its 47 learning centres currently caters for about 89,000 learners throughout the country. Besides the national learners, OUM has established partnerships with Yemen, Bahrain, Maldives, Ghana and Sri Lanka to carry out its programmes in those countries. Thus it is only appropriate for the university to consider creating integrated e-learning delivery mechanism using its very own learning management system known as myVLE for the adult learners. The myVLE opportunities would be able to satisfy the learners' need for convenient offerings and at the same time maximize the use of online teaching technologies, facilities and resources reducing physical presence in a classroom environment.

## **Overview of the Open University Malaysia (OUM)**

As epitomized by its name, OUM has embarked in offering life-long opportunities for self-development while focusing on education, training and development activities. OUM has today adopted the role of a catalyst in the provision of pedagogical and andragogical techniques while imparting the relevant fields of studies. The philosophy, vision and mission of OUM have been thus developed in ensuring a better future for Malaysians while at the same time striving to attain global recognition and the competitive edge. OUM started its operations in August 1999 as an institution ready to embark in the business of an education, training and development provider of remarkable standards. OUM then became the first open and distance learning (ODL) institution in Malaysia which targets the working adults who had missed out the opportunities to go to public universities.

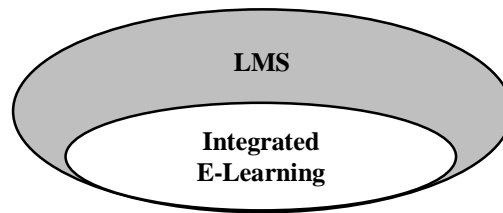
OUM started off with an initial batch of 753 learners in August 2001. To date, OUM's cumulative enrolment has reached 89,000 learners. It is now the largest Open and Distance Learning (ODL) institution in Malaysia. Thirteen thousand learners have graduated from OUM since OUM's first convocation in December 2004. Within this decade, OUM aspires to become a "mega university" when its learners will exceed 100,000.

The university's acronym, "University for All: Opening Minds Transforming Lives", illustrates the university's commitment to reach out to the working adults who want to improve their academic qualifications in order to upgrade their quality of life. In line with its mission and vision to be the leading provider of open and distance learning, OUM also offers educational opportunities to those who live in the remote areas, senior citizens, physically challenged and prison inmates.

## **Integrated E-Learning via Learning Management System (LMS)**

A Learning Management System (or LMS) is a software that enables the management and delivery of learning content and resources to learners. Most LMS systems are web-based to facilitate "anytime, anywhere" access to learning content and administration. OUM uses its own LMS known as "My Virtual

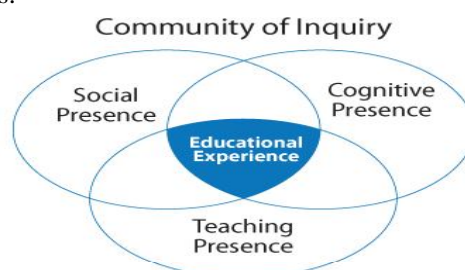
Learning Environment” or myVLE. myVLE which is a network system designed to provide a distributed, near real-time electronic collaborative environment allows participation by a world-wide or nation-wide set of learners physically isolated in different geographical locations. These locations due to cost, accessibility, safety or other concerns often do not permit the learning communities to participate at the same location. The question that we always ask in designing an effective e-learning environment using LMS such as myVLE is not “what to do?” but “how to do?”. This is more so when realizing the concept of integrated E-Learning in LMS.



**Figure 1:** Integrated e-learning in LMS

Many experts do not believe that a unilateral approach of using technology to support learning will be successful. Instead, based on our own 10 years experience conducting online courses for adult learners and work done by Jochems et al. (2003) and Garrison et al. (2001), e-learning will be effective if it is implemented in an integrated manner that incorporates the following SIX critical principles so that it empowers the learners’ learning:

1. Integrated e-learning has to take pedagogical and technical aspects into account
2. E-Learning has to be learner-centered whereby learners would be the primary focus of attention as opposed to the traditional emphasis on the instructors
3. The best approach to teaching and learning is the bi-instructional method where e-learning is utilized for **independent study** to support self-managed learning (SML) and **indirect instruction** to support peer collaboration, interaction and eliminate isolation.
4. Assessment must become an integral part of e-learning so that the learners know their ranking and ways to improve it.
5. A successful online learning must support have instructor presence, social presence and cognitive presence as proposed in the Community of Inquiry (CoI) model (Figure 2).
6. A successful online learning must support tri-interactions: learner-learner, learner-instructor and learner-content interactions.

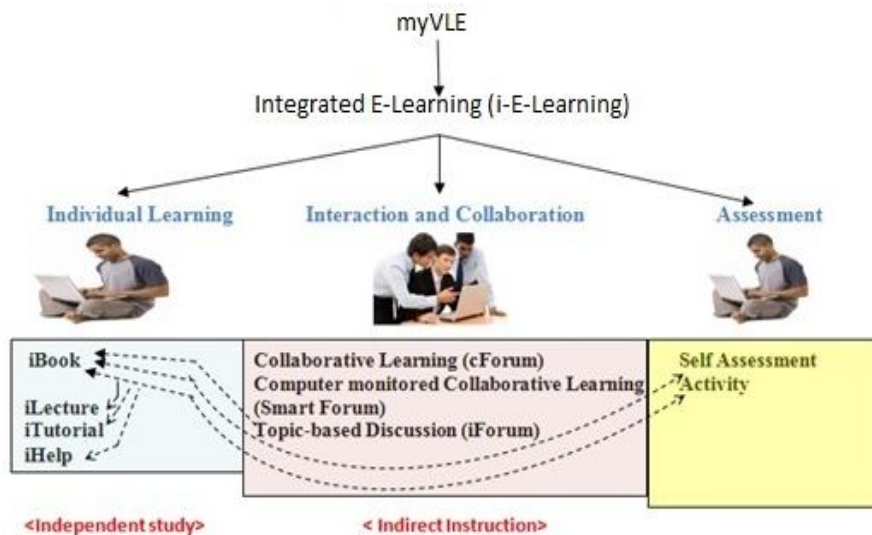


**Figure 2:** Community of inquiry for successful online learning

The experience of some institutions have indicated that overwhelming emphasis on pedagogy such as constructivism, problem-based learning and others without adequate technological support will not achieved the desired result. On the other hand, heavy reliance on technology without well-defined pedagogy will result in an ineffective learning process (Anuwar Ali & Ramli Bahroom, 2008). The six principles given above are essential that all the aspects of e-learning be incorporated so that the goals of an education system are achieved. In addition, for e-learning to be effective, it must be combined with various forms of learning. In the next section, the conceptual framework of integrated e-learning is described by capitalizing on these six principles.

## Conceptual Framework and Implementation of INTEGRATED E-LEARNING via myVLE at OUM

Having explained about the concept of INTEGRATED E-LEARNING, it is worthy to note that OUM has implemented this concept for one of its courses in its teaching and learning process taken by adults learners as part of their LLL process. Figure 3 below shows the conceptual framework to realize the integrated e-learning concept.



\* The dashed arrows show the tagging of the content

**Figure 3:** Integrated e-learning conceptual framework

**Independent study** is supported by individual learning. In individual study, the contents in the form of iBook, iLecture, iTutorial and iHelp facilities play an important role. On the other hand, the **indirect instruction** is supported through collaborative learning in cForum, iForum and in Smart Forum. Assessment is an integral part of learning. A good learning environment should allow the learners to test their knowledge after performing certain learning activities or at certain intervals. In myVLE, assessment is supported through self-assessment and Multimedia-based activities.

Through this framework, maximum learning opportunities are provided via integration of recorded iTutorials and iLectures for problem-based learning and knowledge learning respectively, discussion forum for opportunity to formulate and articulate higher order questions, enriched online modules for knowledge learning, self assessment for multiple timely feedback as well as other supplementary

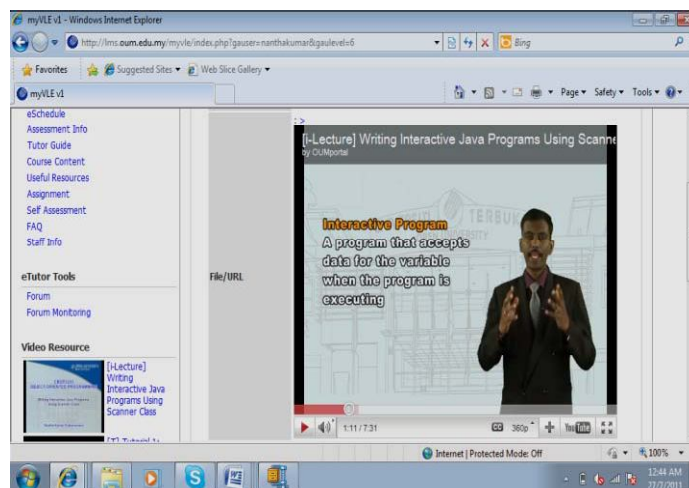
resources. By using this approach, learners can access the content anytime and anywhere enabling them to enjoy a multimedia experience. All the components used to realize the integrated e-learning concept in myVLE are discussed below.

### *iBook*

One critical factor contributing to an e-learning success is content. First there must be a sufficient content, and the contents should be in various formats to cater to a diverse learner population. It goes without saying that the contents should be interesting and engaging to learners to sustain their learning interest. The iBook is the online module which is more engaging and interactive as compared to the static PDF-print modules. This change is anticipated to bring about a huge difference to the use of e-learning and will inevitably create a far more enriching learning experience for learners. iBook in myVLE has lesson tracking to enable the learners to keep track their learning in the iBook and in control of their lessons.

### *iLecture*

iLecture (Figure 4) will enable the learners to learn from subjects matter experts but at their own leisure. iLecture will focusing on the difficult and important topics in the subject and supports both audio and video components. It also has screen captures and injection of good instructional design strategies.



**Figure 4:** Sample of iLecture for one of the topics *iTutorial*

iTutorial will enable the learners to have a feel of a actual classroom without actually having to attend one. It has both audio and video components. iTutorial will focus on task-based learning so that the learners can acquire the problem-solving skills. iTutorial is the recording of the actual classroom from the previous semester focusing on problem-based learning using a task.

### *iForum*

Many higher education institutions are looking to asynchronous discussion forums, as a versatile medium for the delivery of educational programs. In addition, it also provides an avenue for e-learners to engage in learning as the forum allows them to have a high degree of interaction among the peers and between learners and instructor as it considers the learners co-creators of knowledge. As a result discussion also have included in myVLE and known as iForum. iForum in myVLE is the asynchronous based discussion forum of the topics included for the subject. Each topic will have different folder so that the discussion

will be more focused on the appropriate topics. Here, the instructor will act as formal authority for this subject by answering the learners' questions in the in text-based forum. To support the social presence, a "General" folder has been included so that the learners can have non-academic discussion. This will increase their self-belonging and visibility in the group.

#### *cForum*

Collaborative learning is an established technique for teaching and learning (Preston, 2005) in which the learners in a group have their own learning responsibilities for each other and for themselves. According to Preston (2005), this is a social process in which the learners learnt from peers by participating interactively with learning material, observing the solution approach adopted by every peers, ensure each peer is focused towards the task and motivated in highlighting issues and decisions. In implementing the collaborative learning in myVLE, learners are required to practice collaborative learning using the threaded forum (cForum) in myVLE to solve a problem given to them. The task is developed in a such a way that it demands critical knowledge, problem solving skills and self-managed learning strategies from the learners. Thus, the problem in the task act as a stimuli for the learning to take place and represent a platform for the learners to develop collaborative critical skills. Here, the instructor will play the role of moderator. The following guidelines on preparing a good task has been applied in order to ensure an effective collaborative learning among the learners (Johnson & Johnson, 2001):

- The task is conceptual
- The task requires problem solving approach
- The task requires higher-level reasoning and critical thinking
- The task emphasizes mastery
- The quality of performance is needed

The collaborative discussion in cForum is conducted in the premise of that the learners learning is not so much a matter of building up correct responses or eliminating incorrect responses. The most important thing is for learners to have the opportunity in a group to test the adequacy of their ideas.

#### *Smart Forum*

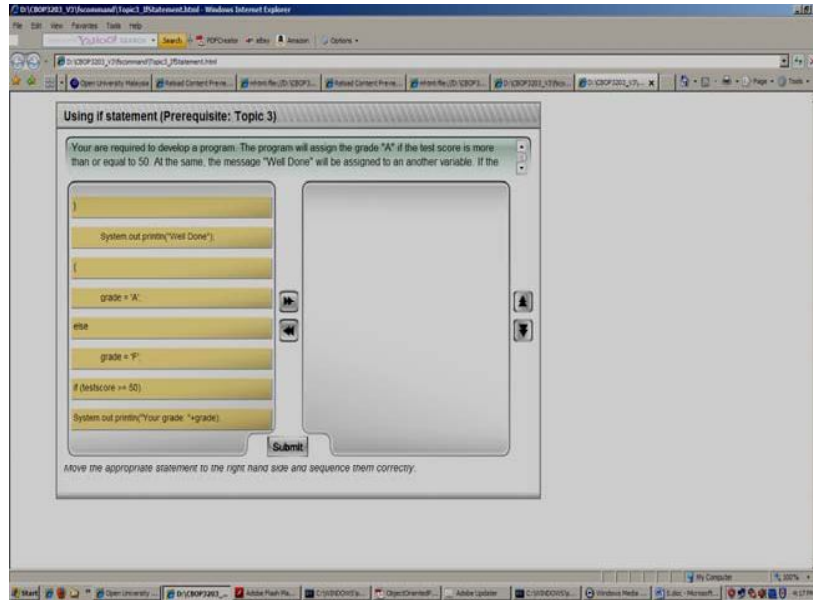
Smart Forum used the same modus operandi as in cForum but by capitalizing on smart agents coupled with problem-based learning, collaborative learning pedagogy, community of inquiry, scaffolding (in the form of sentence openers) and critical thinking. These agent shall be interacting among themselves to form a "multi-agent" collaboration. In discussions using forums, the task that can be done by the agents are sending messages to the learners, classify the messages posted by the learners and models the conversation among the learners in the discussion group. The ultimate target of agents are to support, facilitate and monitor in regards to groups' and learners' critical thinking development. Here, the instructor will play the role of moderator. Critical thinking is emphasized as it is one of the important skills that should be acquired by the learners. The detail elaboration regarding Smart Forum can be referred in Subramaniam, N.K. et al. (2010).

#### *iHelp*

iHelp will provide possible answers for the learners queries on the subject matter in the form of FAQs in a new pop-up window. This will facilitate the information searching by the learners. The previous discussion in the forum have been mined in order to compile the questions an answers in iHelp.

### *Self Assessment & Activity*

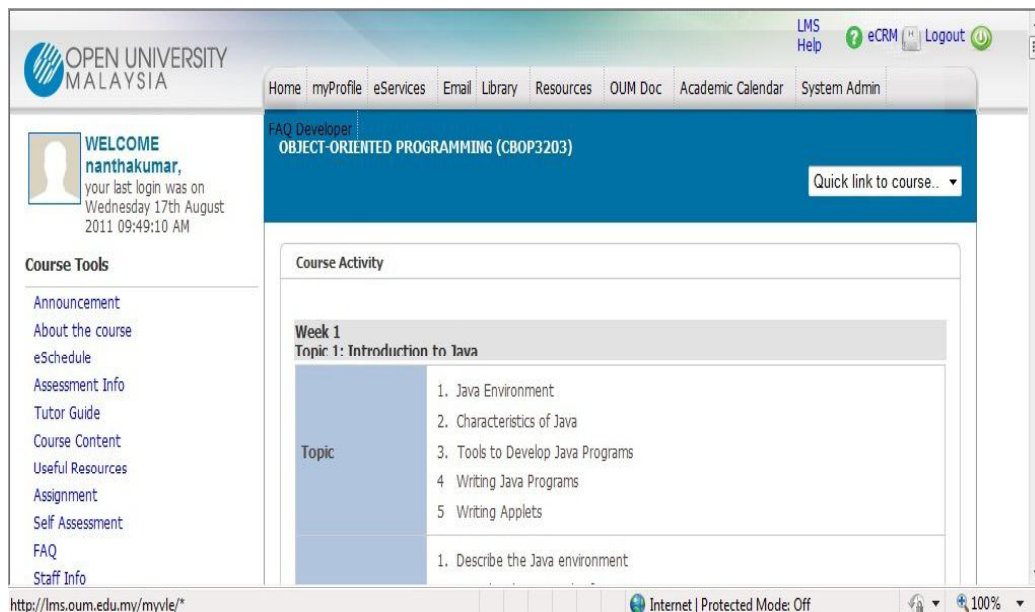
Self assessment is provided in the form of Multiple Choice Questions. The system will give feedback if a learner choose the wrong answer. Activity (Figure 5) is a Flash-based hands-on assessment which requires the learners to do some activities to test their understanding of a topic.



**Figure 5:** Flash-based hands-on activity for self-assessment

## **The Implementation of Integrated E-Learning**

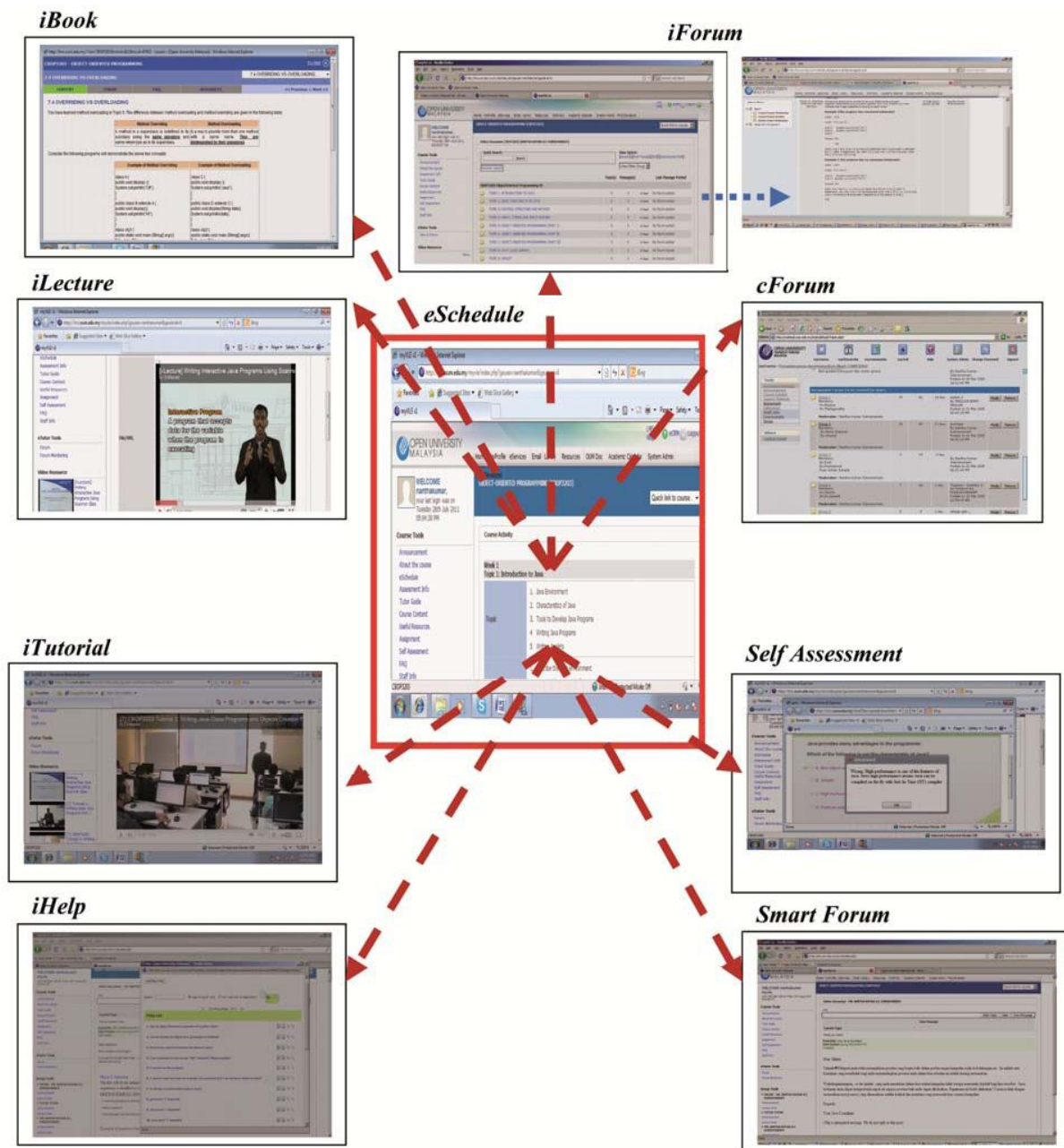
This section discusses the implementation of integrated e-learning via myVLE based on the conceptual framework presented earlier. integrated e-learning had been implemented for CBOP3203- Object Oriented Programming (CS1 subject) in the May 2011 semester. It is an IT-based subject. A total of 156 learners had taken this subject in that semester. All learners were given access to the myVLE for their online learning and limited number of face to face (F2F) tutorials (8 hours). Self-managed learning (SML) constitutes the larger portion of study time followed by online learning and F2F tutorials. Online learning is an important component to support learners' SML. When these learners access the myVLE for the subject, the main page that contains the eSchedule will appear. It will guide the learners on the activities that they should complete in the ten weeks period (Figure 6). By doing so, the learners will know when is the best time to access the contents available in myVLE.



**Figure 6:** Main page of the myVLE for the subject

At the same time, in order to give flexibility, the learners also have the choice to access the contents on their own by skipping the schedule provided in the eSchedule. Various learning materials are supported in myVLE to achieve the integrated e-learning concept as shown in Figure 7. A total of 10 iLectures with total time of six hours had been developed to cater for the difficult topics in that subject. A total of 5 iTutorials with total time of 10 hours had been developed and 14 Flash-based activities had been developed to support the self-assessment of the learners.





**Figure 7:** Integrated e-learning in OUM's myVLE

All the learning materials are tagged (in order to provide the integration) to iBook so that the learners can jump to correct location in the iBook (or vice versa) whenever they face difficulty when going through other learning materials available in myVLE (Figure 8). This makes the learning materials are well integrated and does not exist as individual components.

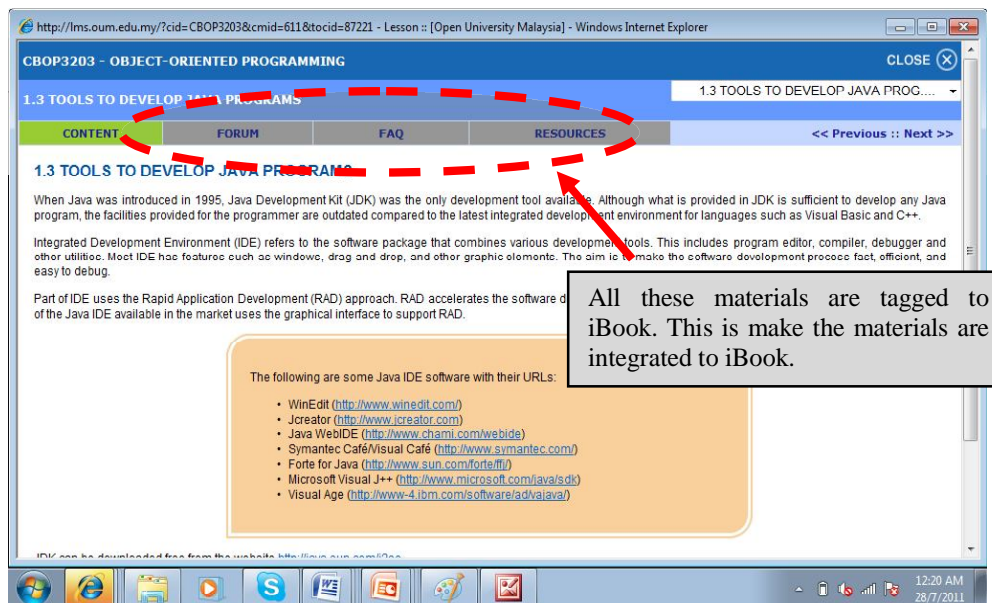


Figure 8: Some of the learning materials are “tagged” with iBook

## Learners Evaluation

At the end of the semester, a questionnaire has been distributed to the 40 learners who are taking this subject in Klang Valley (Central Region). 23 learners have responded to the survey. The survey has five items on content, four items on interactivity and three items on preference. All items are measured in the Lickert scale of 1 (strong disagree) to 5 (strongly agree). The mean score for all the items are shown below.

Table 1: Mean Score of the Items

	ITEMS	MEAN SCORE
<b>CONTENT</b>		
1	I experience higher level of learning / understanding of the lesson through myVLE for this subject.	3.52
2	I am able to achieve the learning outcomes at the end of using the myVLE for this subject.	3.48
3	I experience learning the subject in a new way through myVLE for this subject.	3.57
4	My knowledge on the subject matter increases after going through the myVLE.	3.61
5	myVLE for CBOP3203 helps me a lot for my self-managed learning.	3.52
<b>INTERACTIVITY</b>		
6	I find the instructions easy to understand.	3.43
7	I find the interactive activities (MCQs, drag and drop, simulations & etc.) make learning more engaging.	3.22

8	I find the additional web-resources add value to this course.	3.22
9	I find the multimedia components (e.g. video, audio, animations, simulations) motivating me to learn the subject.	3.26
<b>PREFERENCE</b>		
10	I prefer CBOP3203's myVLE over face-to-face tutorial as the primary learning material.	3.0
11	Overall, I find that the myVLE is very useful in learning the subject – CBOP3203.	3.0
12	There is no need for Face-to-Face tutorials for this subject as a result of having this myVLE for CBOP3203	2.0

The result shows that the learners gave favourable response for the content and interactivity. Integrated e-learning concept in myVLE has achieved its objective. This is more so when the learners have indicated positively that the myVLE over face-to-face tutorial as the primary learning material (Item 10). This is the main achievement of integrated e-learning as most of time the educators have stressed that online learning is purely for supplementary learning and classroom learning as the primary learning method. Here, the result was opposite. However, the feedback was not encouraging for item 12. Even though the learners gained through integrated e-learning via myVLE in terms of the knowledge improvement, understanding of the subject and self-managed learning and prefer it to be the primary learning material, they still wanted the F2F interactions. This could be in line with Asian culture in which classroom learning is considered a must in the learning process.

### **Integrated E-Learning: The Way Forward**

Adult learners' evaluation have indicated that integrated e-learning via myVLE has increased their knowledge on the subject matter and prefer it to be the primary learning material. On the other hand, the learners still wanted F2F element in the learning process and it seems that F2F interaction still have the strong influence on their learning. This would mean that the challenges faced by integrated e-learning model (via myVLE) to eliminate the F2F interactions in order to create a fully online course. If this can be achieved, the next ultimate challenge of integrated e-learning would be to achieve online adult learners' performance which is better than traditional learners (Figure 10) or at least on par with the traditional learners (Figure 9). In order to address this, integrated e-learning need to be further elevated by incorporating more learners-centered online supports that could support learners' LLL process. A more thorough research need to be done in order to address this issue. A collaborative work among the subject matter experts, educational experts, cognitivists and instructional designers would certainly be beneficial in order to create a fully online course for LLL.

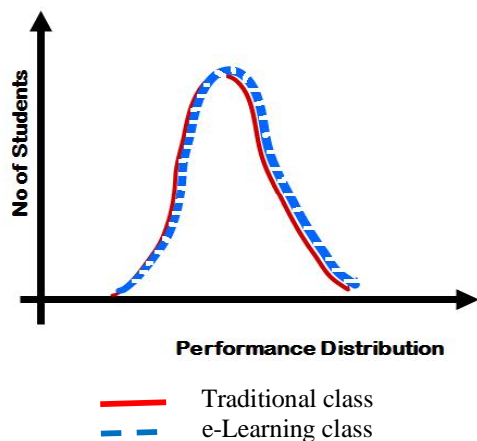


Figure 9: Ideal situation of e-learning (Tan, 2010)

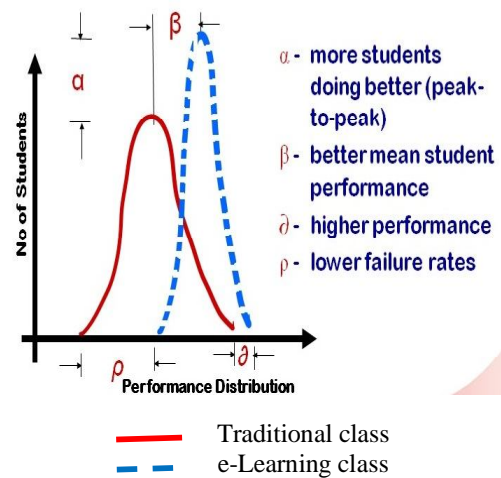


Figure 10: Optimal situation of e-learning (Tan, 2010)

## Summary

Is it possible to use integrated e-learning for LLL? This would be possible as indicated by the learners' evaluation. Integrated e-learning to support LLL looks more promising as the learners can self-manage their own learning without the trouble to resign their job or other constraints. However, the model needs to be further refined and defined so that e-learning becomes the primary source for learning and subsequently classroom learning can be eliminated.

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