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Six Years of Open and Distance Learning: A Meta-Analysis of Research Findings at Open University Malaysia

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Abstract

Open University Malaysia (OUM) started operations in August 2001 with 753 students and 12 programmes. Today student enrolments are more than 60,000 spread out at 61 learning centres. Research at Open University Malaysia has been conducted in the following areas: e-learning, LMS, quality assurance, student retention, tutor issues, capacity building, programme implementation, open distance learning pedagogy, and support services.

Research at OUM started in an ad-hoc manner in the first 2 years. However, from 2003 onwards, research was more institution and faculty based. Findings from OUM research match those of other Open Universities, but there are some variations because the focus taken by OUM researchers was to unravel the challenges faced by OUM. For example, in e-learning, OUM research will show that the focus is more on the OUM learning management system (MyLMS) and quality of online interactions.

On pedagogy, the focus is on blended pedagogy of the 3 main blends: face-to-face, self-managed and online interactions.

On student retention, student perspectives, resources and management issues, there are some similarities with other open universities and specifics pertaining to OUM will be shared in this paper. Results from research findings at OUM will be impactful as the findings can be matched against the phenomenal increase in student numbers in an open and distance learning environment.

Background

Open University Malaysia (OUM) was officially established on 10 August 2000 and our first programmes were offered in August of 2001 with an initial enrolment of 753 students. OUM started operations with 12 undergraduate and diploma programs offered through the five faculties, that is Faculty of Business & Management, Faculty of Information Technology & Multimedia Communications, Faculty of Education & Humanities, Faculty of Science & Foundation Studies and Faculty of Engineering and Technical Studies. Our mission is to provide flexible, easily accessible and affordable life long learning opportunities to open and distant learners.

As of September 2007, the number of students have increased to 65,384 with the following breakdown: 62,903 under-graduate and 2,481 post-graduate students. There are 50 programmes and 61 Learning Centres. There are a total of 423 personnel (inclusive of 73 academics: professors (16); Assoc Professors (13); Senior lecturers(14); Lecturers (29) and Assistant Lecturers (1) and approximately 2928 part-time tutors. Thus far 8241 students have graduated.

Close to 90% of Open University Malaysia students are working adults. Their average age is about 30 years and about 90 % of OUM students had left school for more than 10 years. Some had kept up with the learning environment in the form of attending workshops and training sessions. But most OUM students have lost touch with schooling and there are instances where the gap between leaving school and becoming a student at OUM is about 15 to 20 years. OUM adopts a blended learning approach which combines Self-Managed Learning (approximately 70% of student time) with face-to-face learning interactions (approximately 15% of

student time) and online interactions (approximately 15% of student time).

OUM students are given the opportunity to attend face-to-face classes at any one of the 61 OUM Learning Centres closest to them. These classes are normally conducted once every fortnight for 5 times a semester during the weekend in a 14 week semester. OUM students are also given further learning support online, using a Learning management System called myLMS. Here, the students get to download all relevant learning resources and participate in online discussions as well as do online quizzes. OUM students are also provided with specially designed learning modules to cater to self-managed learning activities. In a nutshell, the OUM students are taxed minimally by the institution in terms of their available formal learning time, due to their other commitments as a working adult and house-holder. This does not mean the OUM is compromising on student learning time, however OUM believes in the flexibility philosophy: OUM provides the support, students manage their time according to their needs and flexibility.

With the above background information, it is hoped that the research findings presented in the following sections will be better understood and capitalized.

1. Academic Counseling as a Pro-Active Retention Initiative at Open University Malaysia

Open and Distance Learning (ODL) institutions are prone to having a high rate of attrition among its students due to the environment in which ODL operates. In such an environment, the learner has to have a very high passion, dedication and self-discipline to carry on with the intended

studies. This study by Mohammad, Latifah, Ramli, Zainal & Mohd Jamaluddin was conducted in 2004 and 2005 for 3 consecutive semesters involving a total of 327 experimental students and 896 control students. Table-1 shows the number of students in the control and treatment groups according to the 3 semesters.

Table 1:
Number of students in control and treatment group on research related to student retention

	Treatment	Control
May 2004	62	71
September 2004	138	426
January 2005	127	399
Total	327	896

Who is involved and what is done for retention efforts at OUM? Students having a CGPA of less than 2.0 are identified as "at-risk" students who will contribute to the attrition rate, as such OUM retention initiatives are targeted primarily at these students. What is being done? A well informed decision was made that "at-risk" students lack the learning-to learn skills, and as such, a learning skills workshop was organized for these students comprising the following learning topics:

1. Self-motivation
2. Strategies to obtain good grades
3. Strategies to prepare a good assignment
4. Managing time
5. Making effective Notes

In this study, the treatment group was given a 5-hour workshop as the intervention. At the end of the workshop, students were given a set of evaluation forms to record their reactions on each

of the topics discussed. Further, the effectiveness of the workshop was measured according to the performance of students for their course grades. In this section, the effects of the learning skills workshop on performance is presented.

Table 2:
Percentage of students with improvement in CGPA for treatment and control group

Course Grade	Treatment Group	Control Group
	% of students with improvement in CGPA	
May 04	80.6	69.0
September 04	74.6	55.4
Jan 05	77.2	54.6

Table-2 shows the percentage of students in the treatment group doing better than the control group for all 3 semesters. In another research conducted by *Latifah, Ramli & Mohd Jamaluddin (2006)*, a similar study was conducted for May 2005 and September 2005 semesters with quite similar results. Further, this study also recorded the percentage of students who re-registered the January 2006 Semester which is presented in Table-3.

Table 3:
Percentage of students who re-registered for May and September 2005

	May 2005		September 2005	
	Treatment	Control	Treatment	Control
% of students who re-registered	73.2	40.7	71.5	42.2

From the above, it can be concluded that the research group had taken appropriate steps to address the issue of student retention at OUM and have helped increase the number of students who re-registered.

2. Service Quality in the Open and Distance Learning – The Perspective of Learners in Malaysia

A research study (*Md Zabid Abdul Rashid & Hairudin Harun, 2005*) was carried out to assess the quality of services at Open University Malaysia. Structured questionnaires were developed after focus group discussions were carried out with 8 key academics and 44 learners. Eight dimensions emerged from the focus group discussions, namely: Mode of Learning, Tutors and Pedagogy, Modules, Learner Services, Academic Programmes, Cost/Fees, Physical and Others. A total of 51 questions were generated and administered. A 5-point Likert Scale was used to measure perceptions ranging from strongly disagree (1) to strongly agree (5). A total of 168 responses were received when the questionnaires were administered. Participants were asked the following questions:

In terms of quality of services, how would you rank the 8 dimensions? The answers were as follows:

Dimensions	Ranking
Tutors and Pedagogy	1
Mode of Learning	2
Programme Issues	3
Cost/Fees	4
Learning Modules	5
Others	6
Learner Services	7
Physical Infrastructure	8

The following are descriptors for the eight dimensions:

Tutors and Pedagogy

This dimension enquired from participants if they perceived the tutors to have adequate knowledge, skills and attitudes. Participants were also asked to rate tutors on their communication skills, their ability to encourage learners to learn, positive relationships with learners and helpfulness.

Mode of Learning

Participants were asked to rate the flexibility and convenience of blended pedagogy as practiced at OUM. They were also asked on the convenience and flexibility of personalized learning using specialized print and multimedia learning materials and digital resources from the OUM Digital Library.

Programme Issues

Participants were asked to rate if academic programmes offer a wide range of specialization, the structure is flexible and the content relevant. They were also asked about the rigor in the assessment and assessment the methods (short tests, assignments and final examination) were fair. Further they were asked if program registration was carried out systematically, with the availability of online registration and on-campus registration and if minimal and flexible entry requirements were attractive to them.

Cost/Fees

Here, participants were asked if tuition fees were reasonable and the mode of payment convenient as online payments could be made and if the finance department was efficient in terms of services provided.

Learning Modules

Learning modules provided to students consist mainly of print materials with isolated cases of multimedia support. The criteria used to receive student perception of quality of learning modules were: modules are well written, content is clear, quality is high and modules are delivered on time.

Others

This category included the following: staffs are courteous and helpful and easily contacted. Learners know whom to contact to resolve problems, complaints are effectively handled and the latest information on OUM is easily available online.

Learner Services

Learner services cover all communication and learner support aspects and include: Learner Service Centre, Student Affairs Department, Learning Centres, OUM as a whole, ICT Services, Digital Library Services, Examination Unit, Registry and Faculty.

Physical Infrastructure

This included classroom and computer facilities at learning centres, facilities for student activities, library facilities and surrounding environment.

In sum, for the year 2004/2005, the top three ranked items in terms of quality services were tutors, mode of learning and nature of programme.

3. Tutors as Agents of Change

This is case study by *Kiong & Vaz (2006)* whereby an action research was conducted on a course : *School Based Research*

offered by OUM to practicing teachers who are completing their Bachelor's in Education programme. The study was carried out based on a concern that students were intimidated at the idea of doing school-based research using action research methods. The researcher modeled the process of action research and wrote a report which was then used as an example of the processes involved as well as the final product. The other underlying reason this action research was conducted was to model ways of infusing technology into pedagogy. In this case study, the researcher used a DVD titled: *Coach Carter* to develop reflection on professionalism among students. Apart from using a DVD in the F2F class meets, other forms of technology were also capitalized on and these included the use of emails and discussion forums.

Data collection included the use of different formats of reflection sheets and data analysis using a "three-step writing method" which includes the following steps:

1) Protocol Writing
   - Journal writing
   - Reflection sheets
   - Emails

2) Hermeneutic Writing (Interpretation of Protocol Writing)
   - Identification of emerging themes
   - Identification of prevailing understanding

3) Phenomenology
   - Revisit the phenomenon
   - Listen to the phenomenon

In sum, this case study produced a report on the infusion of technology in pedagogy, which was then used as a basis to coach students doing the *School Based Research* course. In the process, some technological innovations such as DVD, discussion forums and emails were used.

4. Supporting Autonomous Learning: How Effective Are Online Tutors?

This study carried out in *2004 (Abtar, Mansor and Ansary)* is about the effectiveness of OUM tutors in supporting learners to become autonomous learners. To determine this, a total of 2851 online postings from 37 tutors interacting with 255 students were analyzed using the following rubrics: *motivation, communication, engaging the learner, knowledge building, encouraging higher-order thinking, collaborative online learning* and *technology support*. On the whole, the study concluded that tutors did not support autonomous learning very well as can be seen from the following data:

a. Engaging Learners. Close to 77% of tutors did not have interactions that satisfied the following criteria: appropriate questions or issues were posted to engage learners, learners were referred to other resources or materials (especially websites) and learners were asked to do an activity or exercise that required mental effort. Further about 18% of tutors who did, needed to put in more effort, 3% of tutors reached the satisfactory level, 1.7% good and 0.3% excellent.

b. Knowledge Building. About 25% of tutors did not have any interactions that satisfied the following criteria: new

knowledge was created and gathering information. Further, 59% of tutors needed to be further supported on how to encourage learners to build knowledge, 14.4% were at the satisfactory level, 1.5% considered good and only 0.1% performed excellently.

c. ***Encouraging Higher Order Thinking***. The criteria used to determine the extent tutor encouraged higher-order thinking skills were: encouraged learners to analyze, synthesize and evaluate (judge) information. It was found that only about 11,2% of tutors' postings had content which encouraged higher order thinking. On the other hand, a total of 88.4% of tutors' responses had no bearings to thinking processes.

d. ***Collaborative Learning***: The criteria used to determine the extent of collaborative learning included: tutor promoted interactive learning, tutor supported learners by using various techniques such as probing, asking groups to reflect and challenge each other's ideas and allowing groups to self supervise and self-organize their activities. Data shows that only 2.4% of tutors' postings encouraged collaborative learning with another 97.6% requiring more effort.

The overall conclusions made were that though OUM tutors did not encourage autonomous learning, the main reason was due to the fact that, about 95% of these tutors are full-time lecturers in the traditional universities and are part-time at OUM giving tutorial support (hence we call them tutors). Most of them are still new to online tutoring and though they are given training, it has not been internalized. The findings are important to OUM as these are shared in future

training to show the severity of the issues at hand, and examples are extracted to showcase to new tutors so that they can prevent themselves from doing similar mistakes.

5. Issues in Physics Practicals in ODL Environment

The paper by *Kumar, Subramanian and Mukherjee, (2005)* from the Faculty of Science published in the Asian Journal of Distance Education reviews the objectives of Physics practicals in relation to ODL philosophy. A major concern among Physics professors in an ODL environment is how Physics practicals can be effectively carried out in an ODL environment considering the limited face-to-face contact hours (students are given 12 contact hours for practicals, and 10 hours for normal face-to-face interaction). At OUM, physics is a discipline taken by in-service teachers preparing for their Bachelors in Education (Science). According to *Kumar et al, (2005)*, the present method of teaching physics at OUM is very conventional as it relies heavily on physical laboratories. As a result, the Faculty of Science has encountered the following constraints:

a. Difficulty in renting science laboratories at learning centres as student population grows;
b. Unavoidable last minute changes in dates and venue for practicals;
c. Remuneration package for lab coordinators (most of them are lecturers in traditional universities); and
d. Distance issue in rural areas (sometimes it is difficult to get a lab close by and there have been cases where students travel anywhere between 60-600 km to the nearest lab).

Thus far, interviews with students and lab coordinators show that despite the constraints, they are happy. However, the Faculty

of Science foresees increase in student numbers and is suggesting ways to counter the over-dependence on physical labs. Thus a new model for implementation of physics practicals is suggested whereby it should be implemented following the 5 stages suggested:

a. Use of Interactive CDs. The purpose is to feature video-clips, animated scenes, and interactive questions on physics experiments.
b. Online Discussion using OUM's LMS. The purpose is to hone critical thing through active discussion.
c. Virtual Laboratories. The purpose is to counter some of the constraints raised in this paper: date constraints, remuneration, lack of labs, time taken by student to travel, etc.
d. Home Experiments/Self-built Experimental Projects. The purpose is to provide the 'real' experience at the student's convenience.
e. Laboratory Session. The purpose is to provide a lab environment but at a much reduced contact time. Here, students will attend only one lab session.

6. Improving Learning of Programming through E-Learning by Using Asynchronous Virtual Pair Programming (VPP)

This study by *Zin, Idris and Subramaniam, (2006)* researched into the effectives of asynchronous VPP in studying programming languages at the Faculty of IT and Communications at OUM. Research shows that pair-programming is a very suitable approach for learning of programming in an ODL environment. The tool to conduct the Asynchronous VPP is the discussion forum in OUM's learning management system i.e. MyLMS. The case study features

student perceptions for the area: Java Programming. In this research, students are required to use VPP in solving a programming project. The project/task requires the learner to demonstrate critical knowledge about Java programming, problem-solving proficiencies, higher-order thinking, creativity and self-directed learning strategies. To make it easier for pairs of students to discuss the task given, pair-folders are created in the MyLMS (see example of screen shot). A total of 147 students out of 165 returned survey questionnaires on their perceptions for this method of learning programming using a Likert scale of 1 to 4 (1=Strongly Agree, 2=Agree, 3=Do Not Agree, 4=Strongly Do Not Agree).

There were 11 questions that required learners to make a choice covering the following areas:

a. Collaboration results in confidence to solve and write java programs;
b. Importance of tutor's role in the collaborative process;
c. The learning process, learning experience and knowledge gained;
d. Efficiency and effectiveness of this method of learning;
e. Role played by peer;
f. Expanding this method to other subjects.

Three open ended questions asked were:

a. Will collaboration be more effective with more than 2 members?
b. Asynchronous VPP could replace F2F meetings;
c. Online discussion forum is sufficient for learning to effectively take place (no other intervention is required).

Overall the mean score for Questions 1-11 is less than 2. This indicates that the respondents agree to this method of learning for achievement of the above constructs.

7. Collaborative Online Learning: Issues in Online Facilitation

This paper by Harvinder and Kuldip (2006) explores issues related to effective online facilitation at Open University Malaysia. Collaborative online discourses among peers and tutor for the course: *Learning Skills for Open and Distance Learners* were evaluated for the absence or presence of tutor and peer intervention on an online task given.

The authors have recommended three broad issues related to effective online facilitation that needs to be addressed:

a. A lack of tutor intervention at critical moments;
b. An absence of peer facilitation; and
c. Variations in interpretation and assessment of a task

a. A Lack of Tutor Intervention at Critical Moments

Three categories related to this were identified:

- Not encouraging deep learning and exploratory thinking
- Not providing space for learner participation
- Not providing a sense of tutor presence

b. An Absence of Peer Facilitation

Five categories related to this aspect were identified:

- Lack of learner participation
- Ambiguity related to task
- Directing all postings to tutor
- Contributing to fulfill assessment requirements
- Lack of communicative competence

c. ***Variations in Task Interpretation and Assessment***

Two categories were identified:

- Variation in interpretation of task
- Variation in assessment

Conclusion

Research at OUM has addressed issues that are pertinent to the progress of learning in an ODL environment. The research done thus far is very practical and is meant to solve problems and provide alternative suggestions. This paper covered a small percentage of research done at OUM and is meant at giving a snap-shot of the type of research conducted and for future collaborations with other Open Universities.

References

Abtar Kaur, Mansor Fadzil and Ansary Ahmed (2005). Supporting autonomous learning: how effective are online tutors? *Paper published in Proceedings of Educational Multimedia, Hypermedia & Telecommunications Conference (EDMEDIA)* Montreal. June 27 to July 2, 2005. Pp2856-2863

Kiong, F and Vaz, M.A. (2006). The tutor as an agent of change. *Paper published in Proceedings of SEEAIR, 5-6 September, Pulau Langkawi, Malaysia.*

Harvinder Kaur and Kuldip Kaur (2005). Collaborative online learning: issues in online facilitation. *Paper presented at the International Conference for Distance Education (ICDE),* New Delhi, November 18-23, 2005.

Kumar, P.R., Subramaniam, T., and Mukherjee, T.K. (2005). Issues in physics practicals in an Open and Distance Learning environment. *Asian Journal of Distance Education*: http://www.AsianJDE.org

Latifah Abdol Latif, Ramli Bahroom, and Mohd Jamaludin Muhammad (2006). Academic Counseling as a Pro-Active Retention Initiative at Open University Malaysia. *Paper published in Proceedings of SEEAIR,* 5-6 September, Pulau Langkawi, Malaysia.

Md Zabid Abdul Rashid and Hairudin Harun (2005). Service quality in open and distance learning: the perspective of learners in Malaysia. *A research report submitted to OUM.*

Mohammad Noor Salleh, Latifah Abdol Latif, Ramli Bahroom, Zianal Abidin Ahmad, Mohd Jamaludin Muhammad (2005). Counseling: A retention initiative in Open University Malaysia. *Paper published in Proceedings of SEEAIR* , 14-16 September, 2005, Bali, Indonesia.

Zin, Abdullah Mohd; Idris, Sufian; Subramaniam, Nantha Kumar (2006). Improving learning of programming through e-learning by using asynchronous virtual pair programming. *Turkish Online Journal of Distance Education*, July 2006, Vol : 7, No 3