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## Students' Learning Outcomes in Online Courses: Continual Quality Improvement

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**Abstract:** *Much has been written to enumerate the reasons for the success and failures of online learning, and the common view is that the relative success and failure of a student is caused by a combination of three major factors: the student, the environment, and the curriculum. This exploratory research looks into how adult students who are taking fully online courses in an open and distance learning institution evaluate the extent the online learning dimensions influence their achievement of the expected learning outcomes. An online survey was administered to students taking online courses in the May 2015 semester. The online learning dimensions evaluated include: module (clear statement of learning outcome, workload, learning resources and instructional design), feedback, learning experience, assessment, and student self directedness and motivation with student satisfaction as a dependent variable. The average mean obtained for these dimensions is 3.69 out of 5. Relative comparison between the dimensions highlights four areas of concern: workload, instructional design, feedback and learning experience. The student satisfaction level is indicated by a mean of 3.36 (a satisfaction level at 67.2%). The objective was to use the results of this survey as a guide in developing an integrated and robust system linked to the institution's Learning Management System (based on Moodle) for course evaluation. The results will assist the institution in coming up with effective intervention strategies for improving problematic courses so as to increase students' online learning experience and satisfaction. The instrument can also serve as an internal benchmark on the courses offered. The findings highlight OUMH1103 (Learning Skills for Open and Distance Learners) with rating above 4 for all dimensions and a satisfaction rating at 4.13 (82.5%). In general, the results indicate that student satisfaction with online courses is correlated to all the online learning dimensions. Student satisfaction shows strong positive correlation to learning resources, feedback and student motivation. The course evaluation imposed on the students at regular intervals will enable the institution to delve into quality improvement, management of academic performance, curricular and pedagogic review and easy tracking and monitoring of the quality of the courses and programmes.*

### Introduction

Online learning which has been a feature of most Open and Distance learning (ODL) institution is now gaining popularity among most conventional higher education providers as well. A mix of Online learning and Face-to-face learning known as Blended learning, is a popular mode of learning in today's world. Blended learning was originally became a choice for ODL institutions as a strategy to support its students who are mostly working adults who have left the education system for a significant period of time. As the demography of the students change over time towards students who are much more familiar with information communication technology or ICT, the shift towards a learning environment that is fully supported by an online system is only natural in today's borderless education world. Innovations in ICT as well as in Instructional Design have led to the design of e-learning platforms that are used to present or deliver learning content with new and enhanced opportunities for student engagement, interaction and learning (Ituma, 2011). Paetcher (2010) proposed that such frameworks must have at least five segments for designing an e-learning course including: 1) course design, learning materials and electronic course environment; 2)

interactions between students and teachers: 3) interaction with student peers; 4) individual learning processes; and 5) course outcomes. Studies have shown that students' online experience can be academically challenging (Dobbs, et al., 2009; Wyatt, 2005).

Therefore, programmes offered by any education provider must be evaluated in order to ensure the effectiveness of the programme in achieving its objectives. Among the various aspects of a programme evaluation, the evaluation of each course within the programme is a must. Each course can be evaluated through various mechanisms, from academic performance of the students to how well the learning experience is gauged effective by the students in supporting them to achieve the expected learning outcomes. The later mechanism is the focus of this paper.

Learning outcomes refers to the expected outcomes of a course about what a learner know, understand and be able to demonstrate after completing the course. It is upmost important that the effectiveness of a course offered is measured. There are direct and indirect measurements in evaluating how well a student can demonstrate the knowledge and skills acquired. Indirect method involving the measure how well the learning experience is gauged effective by the students in supporting them to achieve the expected learning outcomes is equally important despite the limitation posed by perception-based studies. The views or perception of learners (who are important stakeholders in the process) is beneficial as a continual quality improvement (CQI) measure in the course delivery. The views of other stakeholders are equally important, but are beyond the scope of this paper. The stakeholders could be the course tutors, course subject matter expert or lecturer as well as external academic and industrial experts. The quantitative of the course evaluation when triangulated with the qualitative evaluation will enable curricular and pedagogic reform that can help institutions to provide effective learning environment for enriching students learning experiences.

This study will form the basis of the quality improvement and assurance mechanism that can help Open University Malaysia (OUM) to provide quality educational experience. This study also allows internal benchmarking of courses. An in depth analysis of the identified benchmark courses can also help to identify factors that contribute to the effectiveness of the course. The objectives of this research are:

- (i) to identify whether or not the learning outcomes of each course been stated clearly in their course modules;
- (ii) to determine whether or not the workload for each course is perceived as appropriate by the students;
- (iii) to determine how well the various aspects of the students learning experience are perceived effective by the students in supporting their efforts in achieving the course learning outcomes; and
- (iv) to determine the students' level of motivation, self-initiatives, engagement and satisfaction associated with course.

The use of student's learning outcome as one of the strategy for continual quality improvement is not uncommon (Dormire, Green and Salivar, 2013). The Course Delivery CQI being designed at OUM is a larger study using multidimensional approaches. This study narrows to a single approach in the evaluation process that could also serve evidences in programme audit conducted by the Malaysian Qualification Agency (MQA) as well as in the nationwide ranking system such as SETARA. The survey instrument used is adapted from the instrument by Tucker, Halloran and Price (2013). The instrument is adapted to suit the institution's course delivery environment, which is often different from one institution to another. Additional items were also introduced in the adapted survey questionnaire. The questionnaire analysed has 10 items that captures quantitative data about the students' learning experience in achieving their learning outcomes.

## **The Study**

All students from the pool of 45 Fully Online Courses offered in May 2015 were selected as the population for this study. The survey was administered online using SurveyMonkey whereby the link was posted on the students learning platform referred to as myVLE. The responses from 235 respondents was analysed using SPSS Statistics 22 after the data cleaning process. Original data comprises of 397 responses from 734 students. The qualitative data analysis is excluded from this paper.

## **Findings**

The demographic profile of students who were respondents in this study is presented in Table 1. The data shows that the gender profile shows a slightly higher female to male ratio (the female to male ratio of OUM student population is 70:30). The age group distribution represents the current OUM student population where the largest group (almost

50%) belong to the 25 to 34 age group. Around 40% of the students belong to 18 to 24 and 35 to 44 age groups with almost equal proportion. The remaining 10% of the students who have responded belongs to older age groups (45 to 54 and 55 to 64). Among these respondents 65% have taken online courses during their previous semesters. The respondents also range from students who are in their 3<sup>rd</sup> semester to students who are in their 11<sup>th</sup> semester. Thus, indicating that the students are to a certain degree familiar with OUM Fully Online Courses. The respondents are also found to coping reasonably well in terms of their academic performance (about 80% with CGPA above 2.01).

Table 1: Demographic Profile

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	166	70.6	70.6	70.6
	Male	69	29.4	29.4	100.0
	Total	235	100.0	100.0	
Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 to 24	44	18.7	18.7	18.7
	25 to 34	110	46.8	46.8	65.5
	35 to 44	57	24.3	24.3	89.8
	45 to 54	19	8.1	8.1	97.9
	55 to 64	5	2.1	2.1	100.0
	Total	235	100.0	100.0	
Had taken Online Course previous Semester					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	152	64.7	64.7	64.7
	No	83	35.3	35.3	100.0
	Total	235	100.0	100.0	
Register with OUM					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	January 2012	55	23.4	23.4	23.4
	January 2014	36	15.3	15.3	38.7
	January 2015	19	8.1	8.1	46.8
	May 2012	29	12.3	12.3	59.1
	May 2014	20	8.5	8.5	67.7
	May 2015	19	8.1	8.1	75.7
	September 2012	29	12.3	12.3	88.1
	September 2014	26	11.1	11.1	99.1
	September 2015	2	.9	.9	100.0
	Total	235	100.0	100.0	

CGPA					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0.00-1.00	9	3.8	3.8	3.8
	1.01-2.00	33	14.0	14.0	17.9
	2.01-3.00	103	43.8	43.8	61.7
	3.01-4.00	90	38.3	38.3	100.0
	Total	235	100.0	100.0	

It was also found in this study that despite the relatively young age group, the students do not spend sufficient time engaged online. The data obtained in this study shows that 64% of the students spend less than one minute in an online learning session. Only a mere 4% spend more than 4 hours per session being engaged online.

The descriptive data in Table 2 shows that the students rate their cognitive involvement and motivation high (3.83 and 3.76). Their overall satisfaction in fully online course is relatively low (3.36) and the second lowest rating (3.58) was given the e-tutor's responses to their learning concern which marks clearly an area to obtain further data concerning the quality of facilitation provided by the e-tutors.

Table 2: Descriptive Statistics

Descriptive Statistics						
		N	Minimum	Maximum	Mean	Std. Deviation
1.	The e-tutor was responsive to my concerns in learning.	229	1	5	3.58	.973
2.	The learning outcomes in this module are clearly identified. (Learning outcomes are what you are expected to know, understand or be able to do in order to be successful in the course).	235	1	5	3.75	.836
3.	Assessment tasks for this module evaluate my achievements of the learning outcomes.	235	1	5	3.70	.804
4.	The course material / learning resources help me to achieve the learning outcomes.	234	1	5	3.71	.820
5.	The workload for this course is appropriate for the achievement of the learning outcomes. (workload includes reading, research, group activities and assessment tasks).	231	1	5	3.62	.820
6.	The quality of teaching of this module helps me achieve the learning outcomes.	231	1	5	3.60	.854
7.	I make the best use of the learning experience (self test, forum, digital library, readings and video lectures) in this module.	234	1	5	3.68	.847
8.	I think about how I can learn more effectively in this module.	233	1	5	3.83	.763
9.	I am motivated to achieve the learning outcomes in this module.	234	1	5	3.76	.835
10.	Overall, I am satisfied with this fully online course	221	1	5	3.36	1.037
	Valid N (listwise)	207				

In addition to the above analysis, Pearson's correlation values of the analysed aspects to the satisfaction of the students with the fully online course (item 10) showed significance correlation with r between 0.563 and 0.727, N around 220 and p at 0.000. The multiple regression analysis shows significant contribution from the following three

aspects (from higher to lower B value in descending order: Course Material (Item 4), Motivation (Item 9), e-Tutor's Responsiveness (Item 1). The findings help us identify important areas where improvement efforts should be focused.

The use of the evaluation system to form an internal benchmark and as a mechanism to identify courses that could be improved to offer a better learning experience to students is indicated in Table 3. The table shows clearly that the fully online course offered for the Learning Skills for Open and Distance Learners (OUMH1103) with ratings above 4 in all measured aspects can serve as an internal benchmark. In comparison, courses such as Human Resource Management (BBPB2103) and Entrepreneurship (OUMM2103) were rated relatively low. The Course Evaluation depicted in Table 3 shows courses that could be improved so as to increase the student's satisfaction and in supporting them to achieve their learning outcome. The system also helps to narrow down or points out the aspect(s) of a course that requires immediate action towards quality improvement.

Table 3: Course Evaluation

Online Course Code	N	1	2	3	4	5	6	7	8	9	10
BBPB2103 HUMAN RESOURCE MANAGEMENT	23	3.55 (70.91)	3.61 (72.17)	3.65 (73.04)	3.48 (69.57)	3.65 (73.04)	3.48 (69.57)	3.61 (72.17)	3.83 (76.52)	3.7 (73.91)	3.26 (65.22)
BBPM2103 MARKETING MANAGEMENT I	20	3.6 (72.0)	3.75 (75.0)	3.75 (75.0)	3.75 (75.0)	3.63 (72.63)	3.5 (70.0)	3.68 (73.68)	3.85 (77.0)	3.85 (77.0)	3.35 (67.06)
CBMS4303 MANAGEMENT INFORMATION SYSTEM	14	3.93 (78.57)	4.07 (81.43)	3.93 (78.57)	3.93 (78.57)	3.86 (77.14)	3.93 (78.57)	3.79 (75.71)	4.07 (81.43)	4 (80.0)	3.15 (63.08)
OUMM2103 ENTREPRENEURSHIP	13	3.38 (67.69)	3.77 (75.38)	3.62 (72.31)	3.62 (72.31)	3.54 (70.77)	3.31 (66.15)	3.54 (70.77)	3.62 (72.31)	3.77 (75.38)	3.46 (69.23)
OUMH1103 LEARNING SKILLS FOR OPEN DISTANCE LEARNERS	10	4 (80.0)	4.2 (84.0)	4.2 (84.0)	4.1 (82.0)	4.1 (82.0)	4.1 (82.0)	4 (80.0)	4.1 (82.0)	4.2 (84.0)	4.13 (82.5)
BBEK4203 PRINCIPLES OF MACROECONOMICS	10	4.1 (82.0)	4 (80.0)	4.1 (82.0)	4 (80.0)	3.7 (74.0)	3.9 (78.0)	3.6 (72.0)	4.1 (82.0)	4.1 (82.0)	3.78 (75.56)
OUMM3203 PROFESSIONAL ETHICS	9	3.5 (70.0)	3.78 (75.56)	3.89 (77.78)	3.89 (77.78)	3.63 (72.5)	3.67 (73.33)	3.44 (68.89)	3.67 (73.33)	3.56 (71.11)	3.5 (70.0)
BBPS4103 STRATEGIC MANAGEMENT	8	3.88 (77.5)	3.75 (75.0)	3.75 (75.0)	3.75 (75.0)	3.63 (72.5)	3.75 (75.0)	3.63 (72.5)	3.63 (72.5)	3.75 (75.0)	3.5 (70.0)
Total Sample / Total Mean (%)	107	3.74 (74.83)	3.87 (77.32)	3.86 (77.21)	3.82 (76.28)	3.72 (74.32)	3.71 (74.08)	3.66 (73.22)	3.86 (77.14)	3.87 (77.30)	3.52 (70.33)

## Conclusions

The results from the above preliminary data that the instrument used to measure how well the learning experience is gauged effective by the students in supporting them to achieve the expected learning outcomes can provide a convenient method to identify areas of improvement in providing the fully online courses. This evaluation system can be linked to the learning platform, thus enabling a continuous quality improvement system that could highlight: (i) teaching and learning aspects that the students find least effective in supporting their learning; (ii) factors that influences the satisfaction of the students concerning their online courses; and (iii) courses (aspect of the courses) that require proactive measure in CQI.

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