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# Using the Pearson eCollege Learning Outcome Manager in assessing learning outcome mastery in an Advanced Writing Skills course: Lessons learnt from the pilot project

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*For many years now, it has always been assumed that institutions of higher education had the best knowledge to educate post secondary students without the need for a system of checks and balances but recently there have been increasing concerns that the measurement of the quality of education is usually inadequate and there have been calls in society for greater attention to be paid to the learning outcomes of education. It is important to know what students are learning in the classrooms, the learning outcomes that are met and the kind of knowledge, skills and attitudes that higher education develops as such information helps institutions and even nations make informed decisions about interventions needed to improve educational quality and help policy makers monitor trends in the nature and quality of student learning over time. In keeping with this at Wawasan Open University we too have endeavoured to develop and deliver outcome based education that starts off with a clear specification of what students are to know, what they are able to do and what is desirable at the end of the programme. Though our assessment components are linked directly to the learning outcomes, up till now it has been assumed that the marks a student obtains are an indication of the student's mastery of the learning outcomes as well. Though there may be a correlation between the two, a suitable software is needed to analyse how far learning outcomes per say have been mastered by each student on a course. In order to do this, a pilot project was carried out in collaboration with Pearson eCollege to measure the effective mastery of course learning outcomes for an Advanced Writing Skills course using the Learning Outcome Manager. The findings showed in detail each of the areas where a student needed improvement, met requirements or exceeded requirements. Hence, the LOM will be very helpful if its used from the beginning of semester and the tutors plot student performance from the very first assignment, feedback can be given with much clarity on student achievement of learning outcomes. This will help students identify their weaknesses, reflect on their performance as well as take steps to overcome them. Remedial work given by the course coordinator and as tutors can also be targeted at these specific areas so that students can make improvements.*

**Keywords:** Learning Outcomes, Outcome based Education, Open Distance learning, Learning Outcome Management, Pearson eCollege and assessment.

## Introduction

In the traditional mode of assessment used still widely in higher education today, tests, assignments and projects are devised to ensure that the programme and syllabus content are adequately covered. A progressive series of grades is evaluated, formatively through the semester and an examination is given at the end of the year as summative assessment and a decision made on the overall student result. Achievement of learning outcomes is implied in this process but is usually not confirmed. There recently have been increasing concerns that the measurement of the quality of education is usually not adequate and calls in society for greater attention to be paid to the outcomes of education. It is important to know what students are learning in the classrooms and the kind of knowledge, skills and attitudes that higher education develops as such information helps institutions and even nations make informed decisions about interventions needed to improve educational quality and help policy makers monitor trends in the nature and quality of student learning over time. This has resulted in outcome based education becoming a key topic in all institutions of higher learning today. The most commonly discussed areas in relation to this are the environment of assessment and accountability in higher education and why learning outcome management is important and necessary so that an institution can benefit from it.

Firstly, what is outcome based education? It is a method of teaching that focuses on what students can actually do after they have been taught. Therefore all curriculum and teaching decisions (including assessment) are made based on how best to facilitate the desired outcome. Towers (1996) explained this in detail by listing four points that will make this system work. Firstly, we need to identify what the student is to learn. Secondly the student's progress is based on demonstrated achievement. Therefore, thirdly the various instructional and assessment strategies must be made available to meet the needs of the student and finally adequate time and assistance need to be given so that each student can master the desired outcome.

To understand this system of education the definition of learning outcomes is also very vital. According to Spady and Marshall (1994),

*Outcomes are clear, observable demonstrations of student learning that occur after a significant set of learning experiences. They are not values, attitudes, feelings, beliefs, activities, assignments, goals, scores, grades or averages, as many people believe. Typically these demonstrations or performances, reflect three things :1) what the student knows;(2) what the student can actually do with what he knows; and (3) the student's confidence and motivation in carrying out the demonstration. A well-defined outcome will have a clearly defined content or concepts and be demonstrated through a well-defined process beginning with a directive or request such as 'explain', 'organise' or 'produce'.*

Spady and Marshall (1994) also proposed two other important considerations and they are 'clarity of focus' so that curriculum planners and teachers are very focused on what they want the students to do successfully. This obligates teachers to also focus all student assessment on clearly defined significant outcomes. The other consideration is the curriculum constructed 'design down' with the exit outcomes stated explicitly and all other instructional plans built upon these outcomes. In other

words, all planning, teaching and assessment decisions should be linked directly to the significant outcomes that students are to ultimately achieve and all building blocks of learning that the student must achieve in order to reach long term outcomes be identified. OBE will not be complete if expanded opportunities are not provided for all learners. This principle is based on the idea that not all learners can learn the same thing in the same way at the same time (Spady, 1994). However most students can achieve standards, if they are given the appropriate opportunities to do so. This is something that we can provide through the open distance learning mode and the way our course materials provide building blocks of learning content that make up the course and ultimately the programme a student undertakes.

## **The Advanced Writing Skills for University Studies course at WOU.**

This course was developed as a core university course that is compulsory for all undergraduate students keeping in mind the types of writing skills that undergraduate students need to acquire and master to be able to write effectively for university studies. It covers content areas such as creating a paragraph to writing the various types of essays. Technical writing is also included in this course. Emphasis is also given to paraphrasing, summary writing and the effective usage of referencing which is vital for academic essays. Underlying all this is the premise that a student's ability to think and communicate is crucial to the study and practice of all disciplines and that purposeful writing is sustained thinking and the fact that student writing activities have a direct and significant impact on student achievement. The course team looked across the curriculum of the various programmes offered by WOU and studied the writing requirements before developing the curriculum framework for this course. There were four questions that were addressed and they are as follows:

- What learning outcomes are students required to demonstrate at the end of the course?
- What integrated set of outcomes will students need to eventually achieve the exit outcomes?
- What could they be asked to do so that they can demonstrate their learning at each level of outcome?
- Why is the achievement of each outcome significant and important?

Then the aims and outcome statements for this course were formulated and the areas of content, 'teaching' strategy statements (how learning activities will be organised and assessment guidelines constructed based on OBE). For the course design both outcome based and activities based programming styles were used with priority being given to the outcomes on what students will learn and do at the completion of the course. This then helped to define the scope and structure of content through which students will develop the knowledge, skills and values defined by the outcomes.

As for the assessment, it was created with close alignment between outcomes that learners are required to achieve and the assessment tasks that test their achievement. These direct links were given so that the results given will be

consistent, valid, reliable and fair. To assess learners' progress formatively, the questions set for assignments (WOU has three assignments for level 1 and 2 courses) also assess student ability to integrate what they have learnt from different sources. The questions covered both higher and lower level order skills and provided the ranges to discriminate between low and higher levels of achievement as well as possible levels of understanding. As part of our Standard Operating procedure for examination as well as assignment vetting, course coordinators are required to fill in a matrix as shown in Appendix A. This is to ensure that all learning outcomes are tested either in formative or summative assessments or both. All questions are also set in accordance to Bloom's taxonomy of learning domains, which includes a continuum of cognitive processes starting with remembering and progressing through understanding, applying, analysing, evaluating and creating.

## **The Pearson Learning Outcome Manager**

In an effort to see whether WOU was really measuring the learning outcomes of a course effectively, a pilot project was carried out together with Pearson eCollege using its Learning Outcome Manager (LOM). This is a central repository for storing; managing and analysing an institution's learning outcomes and helps the relevant institutions track and assess multiple levels of educational performance. Ultimately it provides a holistic picture of learning and progress through a course and demonstrates its effectiveness by seeing whether the learning outcomes are met and to what level they are. Reports for measuring student performance against expected outcomes are also provided. Two of WOU's courses were piloted in this project and one of them was Advanced Writing Skills for University Studies. This study was limited only to the Penang students for this course. Only student IDS were used to preserve anonymity and to ensure that the evaluation was unbiased. Four tutors participated as well in this effort and helped to plot the student performance in each outcome for the three assignments against the assessment rubric of the LOM while the course coordinator did the same for the examination. The staff was asked to indicate on a Likert scale of 3 whether each respective student needed improvement, met the requirements or exceeded the requirements for each outcome. Each category had its own criterion to determine how much of the learning outcome had been mastered. An example of two of the learning outcomes and the criteria is given in Appendix B.

After all the data was entered, a report was produced to show student achievement of the outcomes. It showed how each individual student fared in their mastery of the five learning outcomes for each assignment as well as the examination. From this data, reports on group as well as class (there were 4 classes involved) were generated.

A summary of the report and its findings for the total group of 136 students is given in Figure 1.

Outcome	Needs improvement (%)	Meets requirements (%)	Exceeds requirements (%)
1. <i>Demonstrate the ability to identify the thesis statement and topic sentences and produce paraphrases of the content in a given passage, of which accuracy and fluency are key features.</i>	50.7	49.2	0
2. <i>Produce an outline of an essay consisting of an introduction, thesis statement, topic sentences, supporting statements and conclusion with relevant references.</i>	42.6	38.9	18.3
3. <i>Produce a range of writing styles and text types.</i>	36	43.3	20.5
4. <i>Use appropriate form, structure and principles in writing various types of technical documents including reports and proposals.</i>	22.0	77.9	0
5. <i>Use appropriate referencing techniques to overcome plagiarism.</i>	50.7	40.4	8.8

Figure 1: Student mastery of the learning outcomes for the Advanced Writing Skills course

The results show that 50.7 % of the students need improvement for learning outcome one. Closer inspection of the results shows that even though most of the students could identify the thesis statements and topic sentences, they could not paraphrase or summarise effectively due to poor language proficiency. As for learning outcome two, students in the 'needs improvement' category could produce an outline but had difficulties writing effective topic sentences and supporting statements. For learning outcome three, the students who needed improvement had the most difficulty writing argumentative essays. They were not able to put forward arguments that had logical supporting statements. Learning outcome four showed the most mastery in the sense that only 22% of the students needed improvement. Students were able to get their formats correct as well as the outlines but had difficulty with expression due to poor language proficiency. As for learning outcome 5, 50.7% of the students were in the 'needs improvement' category'. They were able to write referencing according to the Chicago Style (WOU's house style) but were not able to use effective 'lead ins' to introduce other authors' thoughts and ideas as well by citing and quoting in appropriate places. Generally, about half of the total group of students were able to meet the requirements of the course and about 8-20% exceeded requirements in some of the outcomes.

## **Lessons learnt from the project.**

There are a number of lessons that can be learnt from this project. Firstly, the course coordinator went through the original learning outcomes of the course and had to refine them a little. For example, learning outcome five was originally a part of learning outcome three but for clearer evidence of mastery, they were separated.

Secondly, when the three point Likert scale had to be created, it led the course coordinator to examine in detail the criteria for each category to a great extent as shown in Appendix two and to be able to show clear lines of delineation among the categories. This involves the ability to write good rubrics and for course coordinators who come from industrial backgrounds, workshops need to be organised in this area otherwise the LOM efforts will be hampered. Thirdly, as the student performance for each learning outcome was plotted, it became obvious that some basic writing skills that were expected of students at undergraduate level were not present among our students even though a large number of our students had full fledged diplomas in their content areas. It is also a known fact that for all our students, English is either the second or a foreign language. About 75% of the students in this group that was tested are from Chinese medium schools and hardly use English at home or when they were in school and that explains the low proficiency levels. Fourthly, students from this background learnt via rote learning methods while in school and that could account for their poor performance in essays requiring them to give sound opinions. Fifthly, the results of this project portrayed the various areas the course coordinator needs to re-look in the next revision of the course even though earlier some revisions had been made based on item analysis in the examination and assignment questions.

## **Conclusion**

Based on the findings, we can conclude that even though assignment and examination performance is usually accepted as mastery of learning outcomes, fulfilment of learning outcomes can be seen more clearly when the Learning Outcome Manager is used. The WOU project used the LOM as a post-mortem exercise after the course was over but if the LOM is used from the beginning of semester and the tutors plot student performance from the very first assignment, feedback can be given with much clarity on student achievement of learning outcomes. This will help students identify their weaknesses, reflect on their performance as well as take steps to overcome them. Remedial work given by the course coordinator and as tutors can also be targeted at these specific areas so that students can make improvements. In this way, the mastery of learning outcomes can lead towards the key competencies that are expected of a student when he or she graduates from the university.

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## Appendix 1

Appendix 1: Proposed Form for Vetting Question Papers and Assignments for WUC 202/05 Advanced Writing Skills - Final																			
Questions	Learning Outcome Matches					Coverage (Units)					Level/Difficulty			Bloom's Taxonomy (Cognitive Domain)					
	1	2	3	4	5	1	2	3	4	5	Low	Med	High	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Part A : Structured Questions	√	√	√	√	√	√	√	√		√	√	√		√	√	√			
Part B: Essay	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	
TMA 1	√	√	√	√	√	√	√				√	√		√	√	√	√		
TMA 2	√	√	√	√	√		√	√				√		√	√	√	√	√	
TMA 3	√	√	√	√	√			√	√	√		√	√	√	√	√	√	√	√

List of Learning Outcomes of the Course	
1	<i>Demonstrate the ability to identify the thesis statement and topic sentences and produce paraphrases of the content in a given passage, of which accuracy and fluency are key features.</i>
2	<i>Produce an outline of an essay consisting of an introduction, thesis statement, topic sentences, supporting statements and conclusion with relevant references.</i>
3	<i>Produce a range of writing styles and text types</i>
4	<i>Use appropriate form, structure and principles in writing various types of technical documents including reports and proposals.</i>
5	<i>Use appropriate referencing techniques to overcome plagiarism.</i>

## Appendix 2

### Learning outcomes and rubrics for WUC 202/05 Advanced Writing Skills for University Studies

1. *Demonstrate the ability to identify the thesis statement and topic sentences and produce paraphrases of the content in a given passage, of which accuracy and fluency are key features.*

CRITERIA	Exceeds Requirements	Meets Requirements	Needs Improvement
<b>CLO1.1 Thesis statement and topic sentences</b>	Able to identify the thesis statement and all the topic sentences.	Able to identify the thesis statement and at least two topic sentences.	Able to only identify at least one of the topic sentences/ and the thesis statement.
<b>CLO1.2 Paraphrasing.</b>	Shows use of effective paraphrasing strategies and produces paraphrases which flow well.	Shows some good use of effective paraphrasing strategies and produces paraphrases that are fair.	Shows little evidence of use of paraphrasing strategies OR poor paraphrasing attempt.
<b>CLO1.3 Spelling, grammar and punctuation</b>	No errors in spelling, grammar and punctuation.	Less than 3 errors in spelling, grammar and punctuation.	4 or more errors in spelling, grammar and punctuation.

2. *Produce an outline of an essay consisting of an introduction, thesis statement, topic sentences, supporting statements and conclusion with relevant references.*

CRITERIA	Exceeds Requirements	Meets Requirements	Needs Improvement
<b>CLO2.1 Introduction</b>	Thesis statement is accurate and is appropriate for the audience and purpose.	Thesis statement is accurate but not appropriate for the audience and/or purpose.	Thesis statement is neither accurate nor appropriate for the audience and/or purpose.
<b>CLO2.2 Body</b>	Accurate topic sentence and 4 or more supporting statements or paragraphs. Supporting statements or paragraphs substantiate the topic sentence/ paragraph.	Appropriate topic sentence and 2-3 or more supporting statements or paragraphs. Supporting statements or paragraphs substantiate the topic sentence/ paragraph.	Fair topic sentence and 1 supporting statement or paragraph. Supporting statements or paragraphs do not substantiate the topic sentence/paragraph.
<b>CLO2.3 Body</b>	The conclusion is strong and leaves the reader solidly understanding the writer's position. Effective restatement of the thesis statement.	The conclusion is recognizable. The thesis statement is adequately restated.	There is no conclusion - the paper just ends.
<b>CLO2.4 References</b>	Three references from various reliable sources listed in suggested format.	Two references to external sources but correctly formatted	No references to external sources of data or ideas.