

# Outcome Based Education Implementation And Continuous Quality Improvement For Diploma In Management

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## Abstract:

The process of outcome-based education (OBE) is a prominent development in higher education. The shortcomings in the more traditional process-based education (PBE) are rectified by the initiation of OBE system. The key aspect of OBE is to ensure the students achieves the intended traits and outcomes meet the industrial needs and paving the progression in their career. OBE equips students with professional skills and knowledge, aligning their learning session with assessment and the learning outcomes (LO). OBE upholds the idea of a student-centred learning progress (andragogy) as opposed to the traditional teacher centred learning (pedagogy). OBE is adopted by all educational institutions of Malaysia whereas Spectrum International College of Technology (SICT) is considered in this article. SICT adopted the OBE system in all of their programmes. In this article, the traditional and OBE system is discussed through literature review and from the viewpoint of OBE implementation in SICT.

**Keywords:** Outcome based education, continuous quality improvement, traditional education, diploma, and student progress.

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## 1. Introduction

OBE based teaching learning process has been implemented by various countries. OBE is a concept of organizing teaching and learning (T&L) through the arrangement of processes that will benefit the students (Gurukkal, 2020; Lundahl et al., 2017). OBE is a technique that warrants of the attainment of learning outcomes intended for specific programme, determined by the traits of personnel within the professional field. OBE complements the processes in academic by aligning the attainment from each lesson outcome and accumulates it into course learning outcome (CLO), programme learning outcome (PLO) and ultimately programme educational objective (PEO). OBE works on the principle of measuring student's attainment of each learning outcome within a specific course (Rajak et al., 2018). In the implementation, various assessment tasks are deployed to assist the students to achieve the PLO, which leads to the PEO.

There is various implementation that is applicable to enhance the achievement of the learning outcome attainment (Kyi et al., n.d.; Vivek, n.d.).

OBE plan structures the premise of Continuous Quality Improvement (CQI). The modifications arranged in the program are based on the attainment analysis and to fulfil the need of the stakeholders (students, industrial players and alumni). OBE utilises marks assigned by teachers or lecturers to an assessment performed by the student and allocate that mark received to an accumulation that leads to CLO, PLO and on a longer term, PEO (Vivek, n.d.).

Implementation of OBE upholds the Malaysian Qualification Framework (MQF) by aligning PLO with the cluster of learning outcome defined in the MQF document.

The OBE concept and the CQI mainly focuses on the assessment process that closes the loop of outcome attainment. CQI enables the accurate actions in improving the quality of programme, CLO attainment and PLO attainment. The methodology of assessment offers critical data to the educational institution, administrators and lectures on the compatible and sustainable design of the programme, assessment, direction and delivery of the curriculum. The analysis outcome

acquired from this feedback is utilized in improving the quality of the teaching and learning experience for the students(Akhmadeeva et al., 2013).

With these factors that contributes to OBE, this paper focuses on the size impact and display a meta-investigation that relates the results from trial signs and exploration on the course learning outcome (CLO) and program learning outcome (PLO) in Malaysian higher education system. The structure of the paper is as follows: the traditional and OBE system is discussed in section 2, various features of OBE is analysed and detailed in section 3, curriculum improvement via OBE system is illustrated in section 4, and OBE system is concluded in section 5.

**2. Traditional and Outcome based Education System**

The traditional methodology of teaching is generally determined as curriculum centred, teacher centred, formal approach and lectures. The teaching is often elucidated as transferring of knowledge from the teacher to the learners. This method offers the students with significant skills or knowledge, but they are not combined to definite scenario. The conventional system of education is greatly dependent on the aspects of theoretical learning. The traditional teaching-learning approach is focuses mainly on the skills of

memorizing than the progression of the skills. The teacher emphasizes on the accomplishment of the curriculum within the stipulated time than the incorporation of innovation. Students also barely delivered with the chances for student to progress in the new skill that involved in building and enhancing the career opportunities(Mehmood et al., 2017).

OBE is a concept that nurtures student’s cognitive, psychomotor and affective abilities. The main target of OBE is to train the students with the needed knowledge, provide them with appropriate directions and required competence skill, which are needed to fulfil the criteria after leaving the educational institution. The success of an institution relies on the quality of the education delivery and equipping the learners with required skills. The main process of OBE is to transform the academic knowledge to the real-world application, enabling them to face the challenging atmosphere of the industry while being able to carry out their tasks competently.

OBE focusses on the achievement of the learning outcome by the students through a series of assessments rather than focusing on the teaching itself, as how it was in the traditional process-based education(Bhat et al., 2020). The comparison of traditional and OBE system is given in Table 1.

**Table 1: Traditional Education System and Outcome Based Education System**

Approach	Traditional System	OBE System
Assessment Technique	Exam-driven	Basis of ongoing methodology
Learners	Passive	Active
Methods of learning	Rote-learning	Actions, reasoning, critical thinking and reflection
Syllabus	Segregated into parts and content based	It is relevant to the situations of real-life and integrates the learning with outcome
Resource	Worksheet and textbook bounded source.	Applies and facilitates group-based work that consolidates effective new approach
Learning process	Teacher centred	Student centred
Syllabus	Non-negotiable and rigid	Creative and innovative
Responsibility of learning	The teachers are responsible for the process of learning whereas motivation and teaching rely on the personality of the trainer	The learners are responsible whereas they prompt themselves by the affirmation and feedback of their value

**3. Comprehensive analysis on the features of OBE**

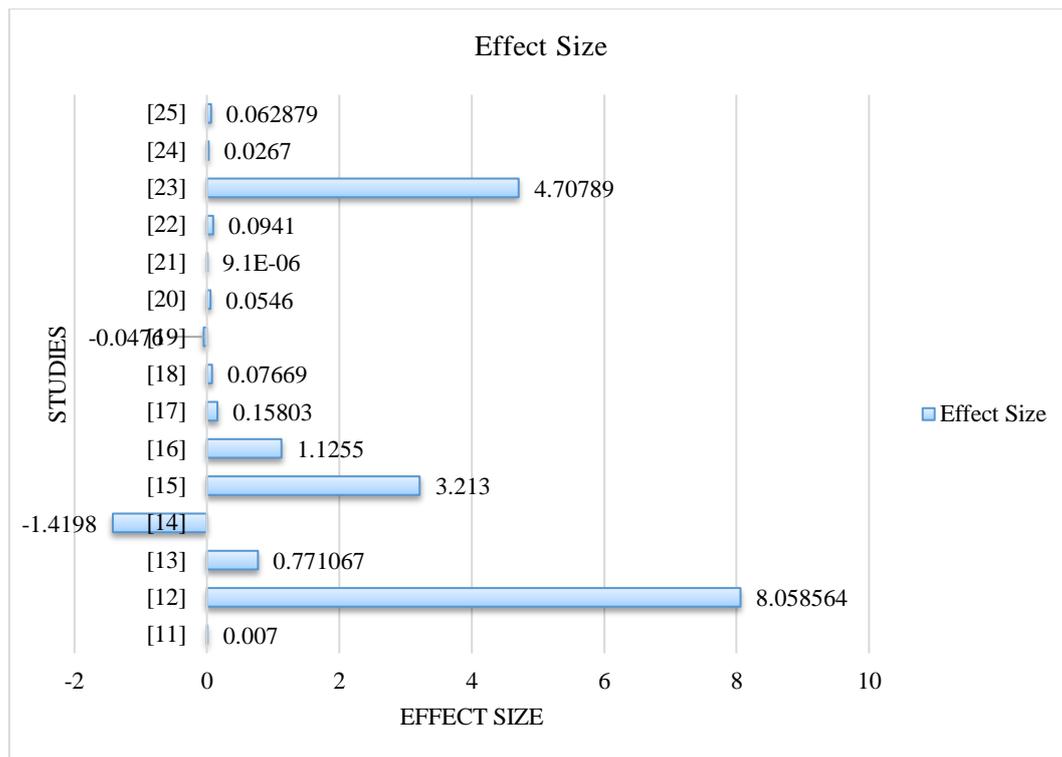
In this section, the comprehensive analysis of OBE is discussed, and the features are provided.

The meta-analysis outcome is with an active size of fifteen studies are discussed in Table 2 whereas the positive impact of OBE and negative impact in the higher education system is figured in Figure 1. The studies are discussed in the Table 2.

**Table 2: Comprehensive analysis on the OBE features**

Mean/ Standard Deviation/Percentage or P-value	Grade	Achievement	Effect Size	N	Source
Mean = 53.14333 SD =4.205 $X^2 = 0.0297$ $r =0.00350$	University	POs average score	0.007	72	(Rahim et al., n.d.)
SD=0.08037 $\mu$ OBE = 3.0386 P-value = 0.000 SD= 0.07479 $\mu$ non-OBE =2.4359 P-value = 0.592	University	POs average score	8.058564	44	(Akir et al., 2012)
2007/2008 BEEE Sem 1 SD=6.747791 Mean = 81.277 BEEE Sem 2 SD=5.473969 Mean =86.48	University	Achievement in POs score	0.771067	3390	(Yusoff et al., n.d.-a)
SD (S) =0.211292 Mean (S) =2.772222 SD (E) = 0.325107 Mean (E) =2.472222	University	Score estimated by employers and students	-1.4198	N(S) = 192 N(E) = 20	(Volungis, n.d.)
Intervention of Pre-test SD = 4.6 Mean = 22.2	University	Mean score for the attainment of learning	3.213	58	(Esmaily et al., 2009)
Entrance; SD = 0.54587 Mean =2.4856 Exit: SD = 0.31636 Mean =3.1020	University	Average score of studentcentered learning on OBE grade	1.1255	45	(Eng et al., 2012)
t: 0.66 Mean: 76.2 df:68 n1 =37	College	Percentage of learning result through web-based training when compared to the	0.15803	70	(Horiuchi et al., 2009)

n2=33 p-value: 0.51		conventional approach			
Mean =72.91667 SD =1.568991 X <sup>2</sup> = 0.226687 r =0.038317	University	POs average score	0.07669	35	(Hashim & Hashim, n.d.)
2008 December SD = 16.61 Mean =69.66 2009 July SD =11.86 Mean =68.87	University	POs average percentage score	-0.0476	-	(Yusoff et al., n.d.-a)
Mean =47.335 SD =17.303 X <sup>2</sup> =0.2317 r =0.0273	University	POs average score	0.0546	90	(Lee et al., 2009)
Mean =46.4 Chi-square =8.67x10 <sup>-5</sup> SD =1.589 r =4.55x10 <sup>-6</sup>	University	POs average score	0.00000 91	363	(Yusoff et al., n.d.-b)
Mean = 60.668 SD =2.330326 X <sup>2</sup> = 0.776553 r =0.046999	University	Percentage of POs	0.09410 2	273	(Mansor et al., 2008)
<b>Year 3 (before evolution of IT)</b> SD = 0.067971 Mean = 3.718 <b>Year 4 (after evolution of IT)</b> SD = 0.104976 Mean =4.038	University	Percentage of POs	4.70789	46	(Nani Fadzlina Naim et al., 2010)
Mean =57 SD =5.395 X <sup>2</sup> =0.7896 r =0.0134	-	Overall PO attainment	0.0267	3493	(Karman et al., 2011)
Mean =74.01333 SD =4.260876 X <sup>2</sup> = 0.1133 r = 0.031424	University	Percentage of POs on the investigation of performance	0.06287 9	13	(Zainol Abidin et al., 2009)



**Figure 1: Impact of effective size on the OBE based system**

In Figure 1, the OBE implemented institutions are taken into account in this study and the effective size is given. Amongst the 15 institutions, two of them attained negative outcome and thirteen attained positive outcomes.

**4. The progress of curriculum using OBE in SICT**

OBE embraces the idea of taking a member of the society to equip them with knowledge, cognitive ability and skills and return them back to the society as a competent workforce. This is achievable through the constructive alignment exercise, a practise that connects the output requirement from the external stakeholders with the input content to be delivered to the students. In the design of a programme curriculum in SICT, the input from the external stakeholders is aligned with the college’s mission and vision, a process that requires the analysis of alumni and graduated students’ performance in the industry. The analysis taps on the alumni survey data distributed to graduated students beyond 3 years from their initial graduation date. Graduates position, salary range, job scope, responsibility and professional and academic advancement are investigated, and their answer will be the contributor to the performance index for the measurement of the PEO.

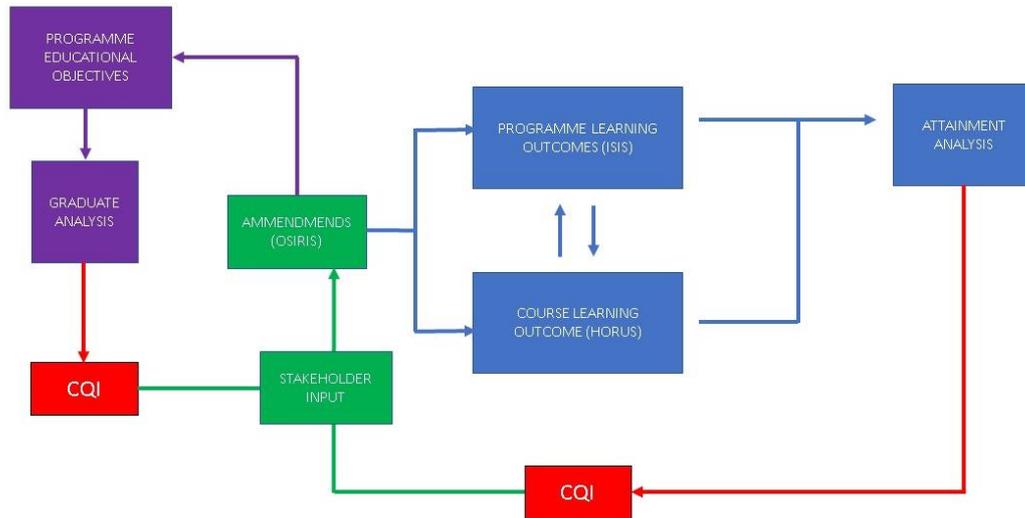
For more direct and immediate analysis of the student’s achievement of the outcomes, SICT employs analysis on the student’s attainment of CLO and PLO. For each course students completed, their marks received from assessment they undertake will be translated into their CLO attainment. This can only be achieved through a proper design of assessments that adheres to the constructive alignment process. To guarantee this, a test specification table (TST) is used. TST is a form of analysis that enables lecturers and academic coordinators to have an overview of the accuracy, reliability and variety of the assessments implemented in a particular course. By employing TST in assessment design, an academician is capable to have a good overview of their assessment task design and related chapters, subtopic and lesson learning outcome (LLO) while assisting students to understand the aim of each lesson. Each CLO is mapped to a designated PLO. The mapped PLO indicates the trait that is appropriate with the skills obtained by the students. It is crucial for the design of the constructive alignment to be accurate, as the marks received to each CLO will be reflected in their PLO attainment. The accumulation of PLO attainment leads to the understanding of student’s overall development of becoming the professional within the particular field. For every semester, PLO is analysed to ensure all students are capable

to achieving the traits, based on the average of the cohort. SICT employs the concept of “50 over 50”, a benchmark that indicates the successfulness of

learning outcome attainment by achieving at least 50% of the CLO attainment by at least 50% of the students

in the cohort. This triggers the CQI and the cycle is indicated in Figure 2.

Figure 2: CQI cycle



To help with the attainment calculation, SICT employs automated data sheet named HORUS, ISIS and OSIRIS to measure CLO, PLO and changes in programme respectively. These are proprietary tools to automatically track student’s learning outcome based on marks obtained by students in each course (not discussed in this paper).

#### 4.1 Need Analysis

To understand the feasibility, requirement and specific details of upcoming programmes to be

designed, all programmes should perform need analysis. A need analysis would highlight to higher education provider (HEP) the specified areas of study within the field to ensure the graduates to be produced from the programme will be marketable, desirable and competent. Need analysis can be conducted through surveys and the outcome can be analysed to understand how the industry and other external stakeholders reacted towards the construction of the programme to be proposed. The screenshots in figure 3 and figure 4 shows a sample of need analysis that is being conducted.

Questions Responses 15

Time constraint

Financial constraint

Feeling there is no requirement of the qualification in current position

Other.....

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**SECTION B**  
Survey of Programme

For the current administrative support employed by your organisation, what is the common lack of knowledge you discovered? (You may tick more than one answer) \*

Weak documentation record keeping skills

Unable to produce professional writing

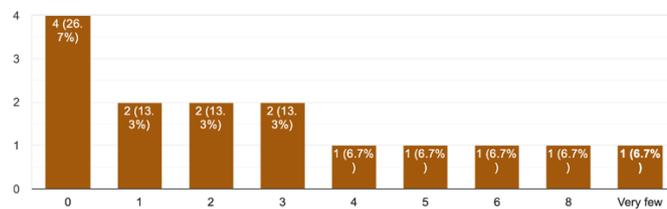
Unable to communicate effectively

Computer illiteracy (Including knowledge on softwares, cloud computing, Teams, Zoom etc)

Figure 3: Survey questions through google form

Amongst the administrative supports, how many currently possess a diploma in related areas (management, business studies, economics).

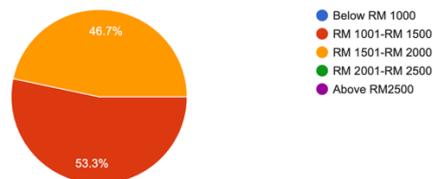
15 responses



These administrative staffs work on an average salary between RM1000-RM2000 per month.

For administrative supports that possess at least a Diploma in any field or experience of 2 years (without diploma), what is their basic salary range per month?

15 responses



66.7% of these staffs who are yet to possess any academic certification cited time constraints as the main restrictor for them to continue their studies to at least on diploma level.

Figure 4: Sample of need analysis that is conducted

#### 4.1. System of Feedback and Input

Feedback is essential to ensure the programme constantly updated to the industrial evolution as well as the quality standard set by the Malaysian Qualification Agency (MQA). Feedback and input from stakeholders and regulatory bodies are incorporated in the updates and changes applied within the programme. These are obtained through various means such as student's feedback survey, industrial advisory panel advice, accreditation visit comment and employer's review of alumni.

#### 4.2. Programme Advisory Committee

A committee to advise the programme in the perspective of quality and industrial feasibility is essential to any programme. This committee consist of academic experts, major industrial players, business owners and related community members convenes to discuss the appropriate content that will be suitable to produce the most desired graduates. The meeting takes place at least once per year to keep the programme in check.

#### 4.3. Curriculum Development and Review Committee

Curriculum development and review committee (CDRC) is a cumulative of staffs within the institution to provide inputs on the design, structure and content of the programme according to industrial and academic standard requirement. CDRC consist of academic and management members such as lecturers, academic coordinator, academic director, quality manager and stakeholders. CDRC integrates input from programme advisory committee into decisions and changes made to the programme as part of the review.

#### 4.4. Vision and Mission and relation to PEO

The institutional mission and vision are the direction to be taken in the perspective of higher education provider. SICT adopts the ideology of lifelong learning in the mission of producing industry ready graduates while committed in providing students with conducive learning environment. Both mission and vision are linked to PEO. PEO are the type of professionals are to be produced by the programme. It upholds the ideology of the institution whilst fulfilling the industrial requirement of a competent workforce. SICT employs performance indicator to

qualitatively measure graduate's achievement through surveys and connects the analysis with the performance of their PLO.

#### 4.5. Programme Learning Outcomes (PLO)

PLO is a combination of traits depicted as essential to become a competent workforce within the industry. SICT adapts PLO stated in respective programme standard released by MQA and match it with the culture of the institution. All PLOs in SICT are directly mapped to MQF cluster of learning outcome to ensure all of the programmes are aligned with the national aspirations of producing holistic graduates. To enhance the design of PLO, globalisation is infused in the statements through academic literatures and benchmarked with renowned institutions. This enables SICT to provide variety and embraces students of different background and culture.

#### 5. Conclusion

OBE complements the traditional grading system by further deepens the analysis of the student's learning outcome attainment to find out about their level of grasps towards a certain concept or knowledge. SICT as a higher education provider enables the capture of learning outcome attainment and provides detailed analysis to quantitatively and qualitatively discovering the student's performance gradually and triggers the CQI. This process safeguards improvement to be implemented constantly, maintaining the relevancy of the graduates to be produced as well as the sustainability of the programme.

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