ABSTRACT
Student Learning Outcomes (SLOs) Assessment is an integral component of both accreditation and quality audits. This is taken seriously by Higher Education Institutions (HEIs), with their interest to seek accreditation and gain confidence of their program. While there are many HEIs whose assessment processes are not yet mature and whose assessment approach/practice is inconsistent and unsystematic, this study aimed to come up with a set of guidelines on SLO Assessment that can be implemented by HEIs, after an analysis of the published audit reports of 15 HEIs in the Sultanate of Oman as well as a consideration of the case of one university which obtained an international accreditation for one of its program.

Keywords: Accreditation, Assessment, Learning Outcomes, Quality Assurance, Quality Audit

1. Introduction

Student Learning Outcomes (SLOs) assessment is a major indicator of any type of accreditation or audit. It could be traced back in the mid 1980s how institutions have transformed their view of assessment and how assessments affected the institutional practices and program review. It was even argued that the presence of assessments is closely related to accreditation (Lublicsu ET AL, 2001). Results of SLOs assessments can be used in the maintenance of standards, admissions, and to provide feedback for both teachers and students. This was also reiterated in a study on SLOs and institutional effectiveness, where SLOs were described as an element of a teaching-learning cycle; and as student learning is a main component of Higher Education Institutions (HEIs), the assessment of learning relates to the assessment of institutional effectiveness (Middle States Commission on Higher Education, 2005).

The assessment of SLOs has been a topic of international interest and has been considered as a method for quality assessment and ongoing program quality enhancement. International accrediting bodies adopt different ways in collecting evidence of SLOs as they establish policies, standards, and approaches to review. There are main issues while dealing with assessing SLOs, which are – (1) having a clear terminology when considering evidence of SLOs; (2) policy choices about evidence of SLOs; and (3) issues when examining SLOs that need to be identified systematically (Ewell, 2016). It is evident from the UNESCO report (Altbach et al, 2009) that institutions are forced to recognize their quality standards with special emphasis on SLOs and evidence from course assessments prove that students have mastered the expected learning. The two processes which have contributed significantly to the discussions of quality and learning outcomes are the Bologna Tuning Process (Altbach et al, 2009), (Barrie et al, 2011), which adopted by more than 40 countries, and the Dublin Descriptors (Harris, 2009), (Tremblay et al, 2012) which define the learning outcomes across the European higher education sector.

HEIs today give more attention assessing SLOs. The United Kingdom Quality Assurance Agency has engaged in a process to identify more focused disciplinary learning outcomes called Subject Benchmark Statements, which are evaluated by external examiners. The Bologna Tuning Process (1999), Tuning Latin America Projects (2004) and Tuning USA (2009) worked to identify disciplinary learning outcomes (Barrie et al, 2011), (Harris, 2009). In United States, three-quarters of institutions have established learning outcomes for all their students, a necessary first step in the assessment cycle (Kuh & Ewell, 2010). Moreover, the Association of American Colleges and Universities (AACU) (Barrie et al, 2012) adopted a
Valid Assessment of Learning in Undergraduate Education (VALUE), which focused on assessment through generation of rubrics. The Australian government has also taken an active role in the quality assurance since the 1980s and the Australian Learning and Teaching Council facilitated the articulation of SLOs within disciplines through the Learning and Teaching Academic Standards project in 2010 (Chalmers, 2007).

Despite much attention on the development of learning outcomes, the alignment of course outcomes with curriculum and program-level institutional assessment poses a challenge internationally (AACU, 2009), (Barrie et al, 2009). The Organisation for Economic Co-operation and Development (OECD) has initiated an international project to address this difficulty. The Assessment of Higher Education Learning Outcomes (AHELO) project was also aimed to examine student results of standardized tests used to measure learning outcome attainment at the cross- disciplinary and the disciplinary levels, with the intention of producing data that could inform institutional improvement (Harris, 2009), (Tremblay et al, 2012), (Lennon & Jonker, 2014). The Higher Education Quality Council of Ontario (HEQCO) has also experimented on the use of the Collegiate Learning Assessment with civil engineering students. Even though international projects are beginning to explore methods to assess learning outcomes at program or institutional levels, assessment remains a difficult and complex task. The HEQCO (Higher Education Quality Council of Ontario) has developed a new approach for the assessment of program-level learning outcomes. Their approach focuses on the underlying four concepts: quality enhancement, constructive alignment, authentic assessment and the Structure of the SLOs. Part of developing an institutional culture that supports program-level learning outcomes and their use for ongoing enhancement is to use the links between summative and formative assessments more effectively. Traditionally, summative assessments are seen as tasks that measure student learning upon completion of an instructional unit. They are most often administered at the end of a course or program, and evaluation of student learning is usually based on measuring student performance against predetermined standards or benchmarks (Barrie et al, 2009). The ECA (European Consortium for Accreditation in Higher Education) also defined appropriate principles and measures for assessing learning outcomes.

In the Middle East, there are Universities which have taken seriously assessment of outcomes for quality audits and program/ institutional reviews. Qatar University for instance implemented a pilot study on SLOs assessment, where committees and reviewers are involved in the process and annual assessment reports were prepared. Their pilot study was driven with the desire to improve the quality of their graduates and address accreditation requirements (Al-Thani, 2015). Another University in Bahrain also had reforms in their academic processes and introduced SLOs assessment and was able to complete 2 cycles of assessments, where program delivery improvement took place as a result of assessment. This enabled the University to obtain Abet accreditation for its Bachelor of Science in Computer Science Program (El Kadhi & Bunagan, 2015).

In the Sultanate of Oman, Higher Education Institutions undergo a set of review cycles by the Oman Academic Accreditation Authority (OAAA), an entity which is mandated to regulate quality in higher education institutions. Various indicators are used as basis for the review, including Graduate Attributes and Student Learning Objectives. There are some HEIs who obtained affirmation, and majority of the HEIs were given recommendations, particularly on the area of teaching, learning and assessment. It was noted though in a study that there are mechanisms which can be implemented by the HEIs to be able to succeed the audit review process and proceed to accreditation (El Kadhi & Bunagan, 2015).

Obviously, the role SLOs in accreditations and quality reviews has changed the views and academic practices of HEIs. In fact, it was even considered that SLOs is the central process of institutional effectiveness. This was argued considering that the quality of the institution is determined by the manner it fulfills its mission, and in the context of accreditation, student learning reflects the effectiveness of the institution which is denoted by the SLOs assessment (Beno, 2004). The notion of institutional effectiveness then required that institutional assessments and improvement strategies resulted in improved learning.

Considering the importance of adhering to accreditation standards and quality audit requirements, this study aimed to come up with a strategy that includes a set of guidelines in carrying out systematic assessment of SLOs. Such guidelines may be used by HEIs to ensure consistency and appropriateness of assessment approach.
2. Research Problem and Methodology

HEIs seeking program accreditations and institutional reviews adhere to a certain set of criteria/requirements to be able to gain accreditation award and increase commendations/affirmations and lessen recommendations (in the case of audits). One of these criteria covers the SLOs Assessment, which puts a challenge to the HEI in showing how consistent and effective their assessment methodologies are. HEIs have their own processes and procedures in implementing SLOs. However, some HEIs do not yet have a mature process considering the newness and the complication the assessment process may bring when integrated to the entire academic system. HEIs, particularly in Oman undergo a cycle of review, including quality audit and standards assessment and sooner or later, the same institutions may aspire for program/institutional accreditation by international bodies. As SLOs Assessment is a main component in both quality audits and accreditations, it is important to have a careful analysis of the current practices of various HEIs and identify best practices that may be applied by the institutions to ensure a systematic approach to SLOs assessment.

This study focused on the analysis of the SLOs Assessment as a scope of Audit. Fifteen audit reports, which were published by OAAA from 2012 to 2014, were considered. In addition, the case of one University which obtained Abet accreditation for its program was also further analysed to be able to determine appropriate approach to assessment. These approaches led to the identification of guidelines in SLOs Assessment which can be adopted by any HEI aspiring for program accreditation or quality audit.

3 Discussions

3.1 SLOs Assessment by the HEIs in the Sultanate of Oman

The scope for a Quality Audit covers all the responsibilities of the HEI which are based on the standards of good practice in the Requirements for Oman System of Quality Assurance (ROSQA) (ROSQA, 2014). Each HEI analyzes its performance for each topic considering the directions as embodied in its Strategic Plan and other related documents as well as the Approach, Deployment, Results and Improvement (ADRI) Model of analysis.

Part of the scope of the Quality Audit by OAAA is the sub-indicator Graduate Attributes and Learning Objectives, which falls under the scope –Student Learning by Coursework Programs (QAM, 2008). Under this sub-indicator, HEIs provide a description and evaluation of the effectiveness of its overall commitment to the graduate attribute. Graduate attributes, which are also expressed as SLOs are generic qualities that the graduates ought to have, which are aligned to the HEI’s mission, and program curricula. Primarily, the graduate attributes are assessed.

Of the 15 HEIs which underwent an institutional visit, few HEIs were given commendation for a robust approach and effective assessments of student outcomes/graduate attributes. Still few HEIS obtained an affirmation for the assessment of the graduate attributes/ SLOs, and how the SLOs are integrated in the curriculum. Majority of the HEIs received a recommendation pertaining to the assessment of the graduate attributes/ SLOs (OAR, 2014).

HEIs generally adopt a 4-step process along graduate attributes/SLOs, namely: (1) development of graduate attributes/ SLOs; (2) mapping of the graduate attributes/ SLOs; (3) communication of the graduate attributes/ SLOs; and (4) assessment of the graduate attributes/ SLOs, which are similar to some of the assessment processes adopted by Qatar University (Al-Thani, 2015) and the teaching-learning assessment cycle applied by the Middle States Commission on Higher Education (Middle States Commission on Higher Education, 2005). These are discussed in the paragraphs that follow.

- Development of graduate attributes/ SLOs: All HEIs which underwent an Audit Review within the period of 2012-2014 have a set of graduate attributes reflecting the characteristics, abilities and skills their graduates ought to have. The graduate attributes are derived from the mission, vision and values of the institution/college. HEIs also have formulated course outcomes which indicate the skills and abilities graduates ought to have upon completion of the course. Some HEIs applied benchmarking
exercise for the comparability of their graduate attributes/ SLOs with other institutions and professional bodies. Other HEIs also used a consultative approach, where institutional committees, at a variety of levels were involved in the development of the graduate attributes and SLOs.

- Mapping of graduate attributes/ SLOs: HEIs mapped their graduate attributes to their mission and curricula. The course outcomes were also mapped to the graduate attributes and mission of the institution. Based on the Audit Reports, inconsistencies on the mapping were observed in the submitted documents.

- Communication of the graduate attributes/ SLOs: HEIs have their own approach in communicating the graduate attributes and SLOs to their stakeholders, particularly the students. However, interview results show the lack of awareness of the students and faculty on the institution’s/ college’s graduate attributes/ SLOs. This shows that HEIs have shortcomings in that regard.

- Assessment of the graduate attributes/ SLOs: HEIs assess their graduate attributes/ SLOs through the evaluation of course outcomes. Some HEIs were commended having an effective assessment. However, majority of the HEIs were given recommendations along this. The published reports show that assessment of the graduate attributes/ SLOs are not yet mature. Some HEIs in fact have just started and confirmed that they need to do a complete assessment. Some HEIs also determine the attainment of the graduate attributes/ SLOs from their stakeholders; however they do not have a mechanism to capture the feedback of the stakeholders along SLOs.

The practices of HEIs along graduate attributes/ SLOs assessment led to a set of recommendations that includes: (1) adaptation of a formal process of development, approval and effective use of graduate attributes; (2) increasing the awareness and understanding and application of graduate attributes; (3) having an external benchmarking into the assessment system; (4) ensuring consistency of assessment practices; (5) having a regular review system for evaluating assessment methods and ensure the effectiveness of the methods. These recommendations pose a challenge to the HEIs, as they need to address the set of recommendations within a period of time. The need for a systematic and efficient SLOs assessment approach is not easy, as assessments should meet a certain set of criteria, such as usefulness, cost-effectiveness, accuracy, systematic and sustained (Middle States Commission on Higher Education, 2005).

3.2 SLOs Assessment for Program Accreditation

As earlier mentioned, SLOs assessment are closely related to accreditation. International accreditation bodies, specifically Abet focuses on the attainment of SLOs and its link to the continuous improvement. There are mainly 3 Abet criteria covering the SLOs Assessment, namely: Program Educational Objectives (PEOs), Student Outcomes (SOs) and Continuous Assessment. The criteria require that the program must have published program educational objectives that are consistent with the mission of the institution, and the needs of the program’s various constituencies. Moreover, the program must have documented student outcomes that prepare graduates to attain the program educational objectives. Both criteria require that the process must be documented, systematically utilized, and effective. In addition, they require that program constituencies are involved in the periodic review to ensure that they remain consistent with the institutional mission, and the program’s constituents’ needs. The criterion – Continuous Assessment requires that the program must regularly use appropriate, documented processes for assessing and evaluating the extent to which the student outcomes are being attained. The results of these evaluations must be systematically utilized as input for the continuous improvement of the program.

Considering these criteria, HEIs implement their own mechanism to ensure that they comply with the requirements. The Assessment of the PEOs and SOs (both referring to the SLOs), require a five-step process that includes (1) Development of the SLOs; (2) Mapping of the SLOs; (3) Communication of the SLOs; (4) Assessment and Evaluation of the SLOs; and (5) Communication Utilization of the SLOs. Such is the assessment process implemented by one of the Universities in Bahrain which obtained Abet accreditation for its Bachelor of Science in Computer Science Program (El Kadhi & Bunagan, 2015). The following paragraphs describe how the College of Computer Studies carried out its assessment processes for its Bachelor of Science in Computer Science.
The SLOs (PEOs and SOs) for the accredited program of the College was developed in consultation with various constituencies. The constituencies, which include employers, alumni, and an individual holding an executive position in a related-professional organization, take part in approving and reviewing the SLOs.

The PEOs are mapped to the HEI’s mission as well as to the SOs. The SOs are also mapped to the courses. The courses have specific SOs that support the attainment of the SOs to ensure that graduates later on will be able to demonstrate the attainment of the PEOs.

The approved SLOs are communicated to various stakeholders through the website, posting in strategic areas in the University and publication in Student Handbooks and Program Specifications. The program for accreditation utilized a method of assessment and evaluation based on the policies and procedures of the HEI. The assessment of SLOs uses both direct and indirect assessments. Mainly the PEOs were assessed through the use of survey questionnaires and the SOs were assessed using survey questionnaires and direct assessment of the course outcomes.

The College adopted a method of evaluation of the SLOs, where committees are tasked to do PEOs evaluation as well as SOs evaluation. The committees set the level of satisfaction for the SLOs. They obtain the SO Assessment results and make an analysis of the results every semester. The SLO Evaluation Reports are submitted for approval. Based on the findings and recommendations, an improvement plan is prepared, and any deficiency or weakness, addressed by the college.

The SLO Evaluation results are disseminated to the stakeholders in different ways, such as through consultative meeting/general assembly with the constituencies or sent through mail and published in the University Websites. As a result of the cycles of evaluation, significant changes in the program, took place. The various factors that contributed to the success of the assessment process led to the improvement of program.

3.3 Guidelines in SLOs Assessment

Considering the requirements of quality audits and accreditations, it is necessary that basic systematic procedures are employed in the SLOs Assessment which include the following:

- Involvement of the Stakeholders/ Constituencies: The development of the SLOs reflecting the mission of the institution/college/ program must be a concerted effort of various stakeholders/ constituencies. There are associated involvements of stakeholders/ constituencies from the beginning until the completion of the assessment process. Faculty members are mainly involved in designing the assessment plan and in collecting assessment data and in analyzing assessment results. Faculty, students, alumni, employers, and practicum supervisors are involved, either as respondents, as source of direct data or in-charge of gathering the assessment information. The same stakeholders are involved in the improvement and sustenance phase.

- Appropriateness and Coherence of Mapping: The various mapping of SLOs (courses - SOs, SOs – program PEOs, PEOs – graduate attributes, PEOs and graduate attributes – mission) must be coherent and consistent.

- Assessment Methodologies: Suitable assessment processes must be adopted by the HEIs. The process should involve both direct and indirect assessment method to ensure balance. All assessment instruments must include clear rubrics and be verified to ensure validity.

- Utilization of Assessment Information: All Assessment results must be communicated to the stakeholders and should be utilized to improve program delivery. Improvements as a result of assessment information must be documented and sustained. A periodic cycle of assessment and review should also be maintained.

The cited guidelines also affirm the characteristics of assessment processes that meet Middle States expectations, particularly an assessment process that is planned, organized, systematized and sustained, whereby it was clearly mentioned that assessment processes are purposely related to the institutional-, program- and course-level goals (Middle States Commission on Higher Education, 2005).
4. Conclusions and Recommendations

Majority of the HEIs in the Sultanate of Oman have a varying approach to SLOs Assessment. A number of HEIs have long started and hence have an established process; however, many of the HEIs do not yet have an established mechanism or a mature process along SLOs assessment. It is then recommended that HEIs, in order to respond and adhere to accreditation and quality audit should be able to implement a systematic approach to SLOs assessment. The set of guidelines provided in this study may be adopted by HEIs as a guide in having an improved approach to SLOs Assessment.

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Authors’ Backgrounds

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