

An Integrated Academic Accreditation Program (IAAP): A Case Study of Faculty of Engineering and IT at Taiz University

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ABSTRACT

In this paper, an integrated academic accreditation program (named IAAP) is developed. The main focus of this study was engineering education, and a case study of the Faculty of Engineering and Information Technology at Taiz University (TU), Yemen was considered. The IAAP is developed by integrating two academic accreditation programs, the national program (Council of Accreditation and Quality Assurance: CAQA) and the Accreditation Board of Engineering and Technology (ABET). A clause-by-clause comparison of the criteria of the two programs (CAQA and ABET) was applied to construct the IAAP. The developed program is applicable to any other engineering faculty in Yemen. An investigation of the capability of implementing the IAAP was conducted. The investigation process involved the six academic departments of the faculty under study. A weighing and scoring scheme was obtained for each element of the IAAP using the analytical hierarchy process (AHP).

KEYWORDS

ABET, Academic accreditation, AHP, Faculty of Engineering and Information Technology, Integrated Academic Accreditation, Taiz University

INTRODUCTION

The persistent endeavors applied by the Ministry of Higher Education and Scientific Research (MHESR) to set up quality assurance frameworks and accreditation in higher education in Yemeni universities have prompted an expansion in mindfulness among colleges authorities, quality standard and quality assurance. In any case, there is no formal criterion for quality assurance and accreditation that are completely utilized inside higher education foundation in Yemen up until this point. Therefore, investigating and studying quality accreditation in the Yemeni higher education sector is a worthy potential research issue.

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According to the World Bank report (P110733, 2009) in Yemen, students are not taught appropriately, curricula are outdated, and unemployment of graduates is high. Only about 13% of students study science, engineering, and technology, indicating an educational gap. This has put pressure on government institutions to change the quality of their education system. In 2009, the MHESR in Yemen issued the standards of quality assurance as part of the (Law No. 13, 2005) and informed all public and private educational foundations to actualize it. As the consequence of that law, the Council of Academic Accreditation and Quality Assurance (CAQA) was formed and its primary objectives are the foundation and execution of the quality assurance principles in all educational institutions in the Republic of Yemen (Alshohybe, 2016). This step was an important step because the establishment of national academic accreditation is the gate of obtaining global accreditation. At the same time, Taiz University (TU), a public university in Yemen established in 1996, seeks to implement the quality assurance standards established by the MHESR. In 2013, a contract has been signed by the CAQA and the TU to apply the quality assurance standards at three faculties (Medicine and Health Sciences, Engineering and Information Technology, and Applied Sciences) and one graduate center (Center of Graduate Studies). As a result, a Quality Assurance Unit was established in those colleges under the supervision of the University's Academic Development and Quality Assurance Department for self-evaluation of the faculties. In this research, the Faculty of Engineering and Information Technology at TU has been considered as a case study. As there is no academic accreditation in place, and since it is essential to be accredited nationally in order to get the ABET accreditation, an integrated academic accreditation program (IAAP) is proposed. The IAAP combines both the national (CAQA) program and the international (ABET) program in an integrated program. The IAAP will help in decreasing the time and effort results from the implementation of each program separately. Using the proposed IAAP, an assessment process is carried out to find to what extent the Faculty departments are capable of being accredited nationally (using the CAQA, a national academic accreditation issued by MHESR, criteria) and globally (using the specific program criteria of the ABET).

The rest of the paper is organized as follows: Related research is addressed in Section 2. The basic procedure for developing the IAAP is summarized in Section 3. The research methodology and design are presented in Section 4. Then, results and discussion are highlighted in Section 5. Finally, conclusions and highlights for future research are illustrated in Section 6.

RELATED WORK

The accreditation procedure in engineering and technology programs started freely with the assistance of the Accreditation Board for Engineering and Technology (ABET) in the United States and later in a few different countries. Different national and territorial associations at the national scale are too creating and doing the procedure of accreditation in different nations. Several research works have been conducted in quality assurance and accreditation in engineering education at different levels. These levels can be classified as global/regional, country/institutional, and national (in Yemen) levels. In this study, the review is organized into these three levels.

Accreditation in Engineering Education at Global/Regional Level

The major international engineering education accreditation bodies have developed in ensuring quality in engineering education are the following.

The Accreditation Board for Engineering and Technology (ABET)

ABET is a nonprofit and non-governmental accrediting agency that has been established in the US, in the early 1930s. It is associated with bachelor and master's degree levels, including applied and natural science, computing, engineering, and engineering technology. It accredits college and university

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