EFFECTIVENESS OF PROGRAM ASSESSMENT BASED ON COURSE LEARNING OUTCOMES

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Abstract – Continuous improvement of academic programs requires their periodic assessment, evaluation, and utilization of analysis results along with feedback from various sources. In this regard, selection of an appropriate assessment methodology plays an important role in not only determining the level of attainment of program or student outcomes but also in highlighting the strengths and weaknesses of a program. While rubrics-based assessment provides a uniform and direct approach for assessment of program outcomes, it does not provide much feedback on the deficiencies at individual course levels. On the other hand, assessment based on course learning outcomes is an indirect approach that requires a mapping process to determine the attainment of program outcomes by assessing course learning outcomes. However, it has an added advantage of providing valuable feedback on the strengths and weaknesses at the course level. This paper describes the effectiveness of assessment carried out for Electrical Engineering program at Ajman University on the basis of course learning outcomes and compares it with rubrics-based assessment for the same program.

Keywords: Assessment; Course Learning Outcomes; Program Outcomes; Accreditation; Outcomes-based Assessment.
QUANTITATIVE AND QUALITATIVE PROGRAM EVALUATION INSTRUMENTS

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Abstract - Measuring the quality of the student learning outcomes and the program educational objectives are a must in today’s learning environment. Many traditional tools such as exams, homework, and projects are used to measure the level of achievement of the Student Outcomes (SOs) and Program Educational Outcomes (PEOs). However, it is possible to improve the result by integrating the quantitative and the qualitative instruments. Integrating qualitative and quantitative approaches in program evaluation help yield insights that neither approach would produce on its own. The strengths of quantitative methods are that they produce factual, reliable outcome data that are usually generalizable to some larger population. The strengths of qualitative methods are that they generate rich, detailed, and valid process data.

Keywords: Student Outcomes; Program Educational Objectives, Quantitative Instruments; Qualitative Instruments; Program Evaluation.
USING DESIGN OF EXPERIMENT TO INVESTIGATE FACTORS INFLUENCING STUDENTS' ACADEMIC PERFORMANCE IN POSTSECONDARY INSTITUTIONS: CASE STUDY - UNIVERSITY OF SHARJAH

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Abstract - In this paper we present the results of our latest research aimed at identifying factors influencing students' performance in the University of Sharjah (UOS) using advanced Design of Experiment (DOE) approach. The academic performance of the students was assessed based on Cumulative Grade Point Average (CGPA) as a measure of academic success with several factors contributing to its level. These include, but not exclusively, high school curriculum, high school grade, academic program, etc. Students investigated in this study were divided into two groups: Group 1 (G1), which include students enrolled in the Colleges of Engineering, Communication, Heath Sciences, and Sciences; Group 2 (G2) include Colleges of Arts and humanities & Social Sciences, and the College of Sharia'a & Islamic Studies. The main objectives of the study include determining the level of impact of each factor on the academic performance of the students. In addition, an inter-factor comparison was conducted by investigating the interaction among the five factors. The results of the study showed that the most significant factors affecting the students’ academic performance are: high school curriculum and high school GPA. In addition, gender gaps were found to have little impact on overall students’ performance. Further investigations of the impact of other factors of the sample revealed very interesting results that can be utilized not by the institution for recruiting purposes as well as to take proactive approaches to design programs geared towards improving students’ performance and the quality of education.

Keywords: Student Academic Achievement; University of Sharjah; Design of Experiment (DOE).
APPRAISAL OF THE WATER RESOURCES MASTER PROGRAM AT UNITED ARAB EMIRATES UNIVERSITY

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Abstract - This paper summarizes the proceedings of water resources master’s program (WRMP) in the United Arab Emirates University (UAEU) and benchmarking with other similar program in well-known universities. It is a multidisciplinary graduate program, offered by three colleges; Engineering, Science, and Food and Agriculture and managed by the College of Engineering. The UAEU-WRMP involving courses, core courses, and elective courses. The mission, goals, learning outcomes, requirements and courses of the WRMP offered by UAEU are briefly described. The UAEU-WRMP is benchmarking with other similar program in topmost universities in USA and Australia to assess their performance and improve practice in a cyclical process involving both quality assurance and quality enhancement. In comparison, five of the nine university programs studied have ten courses in common with the UAEU curriculum. The universities that best match the UAEU program curriculum are Oregon State University, University of Minnesota and University of New Mexico as they have twelve or more common courses with UAEU, where they have comprehensive water resource programs, including Water resources Engineering and Water Resource Science and Management. This study endorsing that the UAEU-WRMP is of good global standing which provides multidisciplinary and high-quality higher education in the field of water resources engineering.

Keywords: Water resources master’s program; higher education; benchmarking; United Arab Emirates University; North America and Australia
BRIDGING THE GAP BETWEEN SCIENTIFIC JOURNALS AND SOCIETY

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Abstract - Public awareness of the latest development in science and technology is one of the requirements for a society to advance in science and technology. This is why national institutions and agencies such as NASA, NSF, JST, Max Planck and KACST have public scientific outreach programs. These programs include public scientific magazines, videos, multimedia and others. Two of the well-known scientific magazines are Science published by AAAS and Nature published by NPG. These two magazines are published in English and there are many similar magazines in other languages. They present the results of the latest published papers in a simple language that the public would understand and relate these results to their daily life.

Saudi Arabia is leading the Arab World in publishing scientific papers with about 10,000 papers in Web of Knowledge (previously known as ISI) in 2013 in addition to many other unlisted papers. These papers are usually present results of experiments done in Saudi labs and research centers. However, there is no Arabic magazine that follows these papers and represents them to the public in a way similar to the English magazines; Science and Nature.

KACST publishes or support four Arabic magazines; Nature Arabic Edition, Science and Technology for Teens, Science and Technology Magazine, and Alfaisal Scientific Magazine. The first two are a translation from other languages and the latters are based on authorship. But none is about the latest published papers by Saudi Arabia. KAUST has jointly worked to publish KAUST Discovery in collaboration with NPG. KAUST Discovery will be in Arabic and focuses on the research done at KAUST. However, an Arabic magazine for public that would focus on published papers by Saudi Arabia is more needed than ever nowadays to support the Saudi National Plan for Knowledge Based Society.
CHALLENGES FACING FRESH ENGINEERING STUDENTS IN THE U.A.E. — ADDING A LEARNERS PERSPECTIVE

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Abstract - The U.A.E is seeking the transition to a knowledge economy from a predominantly oil-based economy. In the quest, it has invited world-renowned universities to train its students in the basic and emerging technological advancements. However, the students are facing challenges in adapting to the learning methodologies required in Higher Education. Specifically, the data accessed for 59 male and 104 female students in electrical and bio-medical programs over the four years of the completion of their studies reveal that the GPA scores in the initial three semesters are lower than in later (after the third semester – till the completion) part of the program. Studies have observed that the attrition rate in the U.A.E. is high in the initial semesters in Higher Education. The underlying reasons for transitional difficulties students face arise from learning-teaching methodologies in the secondary schooling, sociological challenges (from a predominantly Arabic culture in secondary stage to a Western influence in the universities), and lack of adequate guidance and support from the faculties. Some of the interventions applied for mitigation address the issues from a management and teaching perspective (Foundation courses, Learning Management Systems (LMS), Blended learning (access to online content), school based learning (SBL) and work based learning (WBL). However, the latest data presented in this paper suggests that more work has to be done to alleviate the transitional challenges students face in engineering courses in the U.A.E. This paper seeks to review the issue from the learners’ perspective and the methodological theory that explains the learning cycle. Kolb’s ELT-Experiential Learning Theory traces the full cycle of learning process, to help teachers and the management assess the strengths and weaknesses of their students and help them make the best use of available content and concepts to apply in practical situations.
Keywords: U.A.E. Higher Education; U.A.E. engineering education; secondary-post secondary challenges; Higher Education transition; Interventions in higher education; Learning process.
EFFORTS TO MAXIMIZE THE SUCCESS OF STUDENTS ON PROBATION

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Abstract - Poor academic performance and failure to meet the requirements of the attending course may make it necessary to place students on academic probation. The Department of Civil and Environmental Engineering at our University has taken some measures to encourage such students to perform better with the support of the faculty members. The students on probation were required to complete a form with details regarding their academic performance, reasons for poor performance, and ways to overcome their difficulties. They were also required to present an essay explaining why they are on probation and what measures they should take to improve. In addition, the students were required to attend a seminar held for their benefit. All these requirements were to be met before they could register for the next semester. Further, the faculty members were informed accordingly and required to personally meet assigned students, identify the pressing problems of the students and their possible solutions, and refer them to the proper resources. The results of the survey were used to identify trends among the students. The results showed that female students (8%) were fewer among those under academic probation. The main concerns identified by the students were poor time management (50%), family issues (28%), and poor study habits (24%). Further, most of the students had received only one or two warnings and they had grade point averages close to 2, which is the target to achieved to be taken off probation. These findings suggest that the majority of the students will be able to be off probation and have the potential to perform better if proper guidance is provided by the appropriate resource. The Department hopes that these measures will help the students improve their academic performance so that they can successfully complete their course.

Keywords: Probation; Success; Civil Engineering, Academic Performance