2nd International Conference on Higher Education Advances, HEAd´16, 21-23 June 2016, València, Spain

Evaluation Process Dimensions To The Diploma In Mechatronics Engineering

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Abstract

This study was conducted to determine the evaluation of the assessment process dimensions for the Diploma in Mechatronic Engineering. Focus of the study was the program elements (E-DEM program) dimension of the dominant processes. A total of 238 respondents have been participated, who was from Diploma in Mechatronic Engineering student at the Polytechnic Ibrahim Sultan (PIS), Ungku Omar Polytechnic (PUO), Merlimau Polytechnic and Polytechnic Sultan Mizan Zainal Abidin. The data was analysed by using descriptive method of Rasch model in Winsteps V36.5 software. The findings show that all elements of the program (E-DEM) in specified process dimensions has been agreed by the respondents that polytechnic students are in top level on the implementation of Mechatronic Engineering Diploma Program. The assessment process elements (E-MED program) is the dominant method of evaluation to measure the mean value and mean score of -0.88 / 4.28. Overall, according from researcher's opinion, most of polytechnic students agreed that the level of implementation of program elements (E-DEM) in the evaluation process are high and satisfactory. This result referred from dominant elements which is the method of assessment, teaching and learning process. However, elements of the use of facilities and equipment for teaching and learning at an unsatisfactory level. The institutions need to improvise and enhance the quality of facilities and infrastructure for students. The goal is to achieve more conducive of teaching and learning quality and improve students' creativity.

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1. Introduction

Evaluation is defined as a process of determining the extent of the objectives of the program that can be achieved (Tyler, 1950). For Alkin (1969), Cronbach (1963) and Stufflebeam et al. (1971), the assessment is the process of collecting and using information to make decisions. While Suchman (1967) stated that the assessment is an attempt to identify whether a program achieved its goals and objectives. The role of assessment refers to an action for responses that have been received through the collected data, including assisting in the progress of a program or to make a classification based on the overall quality of the program (Butterfield, 1995); (Yahaya, 1999). Evaluation process dimension refers to the performance of an activity (teaching). In this study, the lecturers evaluated to determine the extent to which they have been conducting their lessons, using facilities and equipment, and carry out the assessment in teaching and learning.

2. Problem statement

Accreditation Committee have made the monitoring program of Deemed Accredited to some polytechnics offering diploma program in Mechatronic Engineering. The findings of the evaluation report on the program for the monitoring audit at a polytechnic has identified the unequal distribution ratio of courses in the disciplines of mechanical, electrical, computer and control. Duplication of certain topics different courses and the ability to combine courses have taken place and reducing the number of courses offered. The number of contact hours (face to face) is not commensurate with the amount of credit as stated. Even the estimate to see the extent of learning outcomes and learning outcomes for each semester also criticized in the report .The researchers argue that a study should be conducted to assess the implementation of the program Diploma in Mechatronics Engineering. In this study, researchers used the model Stufflebeam valuation. Stufflebeam valuation model is a comprehensive model framework that can serve as a guide for evaluating a program (Stufflebeam, 1971.2003). The impact of this study, the researchers were able to identify the elements which need to be streamlined and focused in the dimensions of the process.

3. Research objective

This study aims to evaluate the implementation of the program in Mechatronics and identify elements that could form a model for the assessment of the implementation of the program in Mechatronics. The results of this study will be used as a validate data sources for assessing the implementation of the program Diploma in Mechatronics Engineering where research results are pattern-performance implementation of the Program. The objectives of the study are listed below:

- Assess the implementation level of program elements (E-DEM) in the evaluation process that has been set.

4. Research methodology

This study is a survey that assesses Diploma in Mechatronics Engineering Stufflebeam dimensional process model. In this study, the population of this study is 480 students pursuing Diploma in Mechatronics Engineering (DEM) is offered at the Polytechnic Ibrahim Sultan (PIS), Ungku Omar Polytechnic (PUO), Merlimau Polytechnic and Polytechnic Sultan Mizan Zainal Abidin. Based on the table for determination of sample size (Krejcie & Morgan, 1970), for a population of 480 students, the required sample size is about 238 student. The sampling method for the sampling is conducted the using study group (cluster sampling).

In this study, quantitative data were obtained using a questionnaire. This questionnaire uses Likert scale with five possible answers options. The selection level Likert scale is an adaptation of the Bahari(2008) study. This selection uses five stages because it can represent accurate answer compare to respondents with only four stages. To answer the research question, to what extent the implementation level of program elements (E-DEM) in the evaluation process that has been established? Data were analyzed using Rash model analysis and mean measure, mean score