Enhancing Final Year Project Through Exhibition and Competition

Siti Aishah Che Kar, Nordiana Mukahar,
Nur Idawati Md Enzai, Siti Sara Rais and Sabiroh Md Sabri

Faculty of Electrical Engineering, Universiti Teknologi MARA Terengganu,
23000 Dungun, Terengganu, Malaysia

Abstract: The Final Year Project (FYP) is a compulsory course for final year Diploma of Electrical Engineering students in Universiti Teknologi MARA (UiTM). Students enroll in this course for one semester and are able to carry out practical works and seize opportunity to apply theoretical lessons learned during lectures. At the end of the course, students are required to present their final projects. Their work will be assessed by the supervisors and faculty panels. An exhibition cum competition is organized each semester by the faculty to exhibit the students’ projects. Through the exhibition and competition, students will put more effort and work hard in completing their FYP and therefore increase the quality of the project as well as the students’ performance. The aim of this study is to investigate the impact of final year project exhibition and competition on students’ performance. 92 respondents from final semester Diploma of Electrical Engineering students were involved in this survey. Questionnaires were distributed to the students to obtain their feedbacks. The data were subsequently collected and analyzed. Based on this report finding, the quality of project and students’ performance has been affected positively as a result of their involvement in exhibition and competition.

Key words: Final Year Project • Exhibition • Competition

INTRODUCTION

The Final Year Project (FYP) is a part of syllabus requirements in most of engineering courses. During the enrollment of this course, students have a chance to gain practical experience and assimilate all the knowledge and theory that they have learned. Previous research believes that having a graduate education and hands-on experience is very desirable combination when it comes to hiring within the industry [1, 2].

Faculty of Electrical Engineering (FEE), UiTM Terengganu (UiTMT) organizes an engineering exhibition and competition to exhibit all projects done by students in FYP course. FYP course is a compulsory course to all students Diploma of Electrical Engineering during their final year of study. The FYP course is separated into two parts which are Final Year Project 1 (FYP1) course and Final Year Project 2 (FYP2) course. Students are required to register for both courses in two subsequent semesters. The course outcome of FYP1 is that the students should be able to produce electrical engineering project proposal. FYP2 has expectation that the students will be able to implement the proposal into hardware project prototype and to present. The project requires students to be independent in conducting their project with close guidance from the supervisor [3]. The students have to complete the tasks in groups within 14 weeks.

In order to expose the students to real competition outside campus life, an exhibition and competition event is incorporated into final presentation of FYP course. The main objective of embedding this method is to enhance the quality of FYP projects. Furthermore, this will ensure the students are more alert and motivated to complete the project based on the FYP schedule. In order to make sure the exhibition and competition event have given positive benefits to FYP course, a survey has been conducted to obtain the student feedback respond. This paper outcome is to highlight the positive benefits gained from the introduction of exhibition and competition approach in FYP course organized by the faculty for each semester.

Corresponding Author: Siti Aishah Che Kar, Universiti Teknologi MARA Dungun, Terengganu, 23000 Malaysia.
**Final Year Project**

**Final Year Project (FYP):** One of the course outcomes of the course is to look at the ability of the students to assimilate knowledge gained from their six semesters study into electrical engineering project. The FYP2 course is a compulsory subject to be taken by a student to be eligible for UiTM electrical engineering diploma certification. This subject is actually extended from FYP1 course. FYP1 is the prerequisite subject for FYP2. In FYP2 course the students are grouped (maximum three members) to work on one electrical engineering project. Each group is assigned to one supervisor to monitor, guide and assess the project throughout two subsequent semesters.

FYP1 involves project identification and the students must prepare initial proposal for one electronic engineering project. Outcome expectations for this course include the ability of students to plan and design electronic engineering project and conquer soft skills such as communications, teamwork and managing time. The students should also be able to identify the components and methodology that will be used in the chosen project. In this sense, it is important for projects to be of a sufficiently rigorous content, but assuring that the project depth are not too wide or deep for being completed acceptably in the available time [4]. A supervisor is assigned to monitor and guide the students to achieve their target throughout the semester. The assessment for this course is based on progress report, logbook, full proposal presentation and submitted full proposal report.

Then for the subsequent semester, students are required to register for FYP2. The course outcomes for this course include capability to develop, design and conquer technical skills such as circuit fabrication, troubleshooting and designing prototype. The course outcomes also emphasize the need to enhance their soft skills such as presentation skills, teamwork. This course also considers seriously the Computer Aided Design (CAD) skills to utilize tools for circuit simulation and Printed Circuit Board (PCB) design software such as OrCAD, PSpice, Multisim and Circuit Wizard. Furthermore, this course could be a good exposure and stepping stone for students in doing research particularly in engineering field. The students’ performances are assessed through logbook, final report and project prototype by supervisor. Allocation of marks is based on confidential syllabus from FEE, UiTM which are 40% form panel and 60% form supervisor [5]. At the end of the semester, students are required to present the project and conduct demo to be evaluated by the appointed panels from FEE in a specified presentation session. In addition, a larger scale presentation in form of exhibition plus competition is organized by FEE, UiTMT to exhibit all projects done by students in this course.

**FYP Exhibition and Competition Event:** The main reason for holding exhibition is to appreciate the students’ hard work and effort throughout two semesters. Instead of holding closed session presentations witnessed by a number of panels within short period, the students get the opportunity to show their works to much bigger audience.

On the exhibition day, each group has to present their project which includes the project prototype, technical paper and one poster. A1 size poster is chosen as standard format to briefly express the project implementation. The technical paper format is based on IEEE transaction and journals. These three components are assessed by the internal panels that contribute to 40 percent of total final marks. External panels from other engineering faculties and other higher education institutions are invited to evaluate selected projects and to choose the ten best projects in the competition. The panel of jury are selected from members from different departments to contemplate the kind of audience in order to enhance the self confidence among the student [4]. Furthermore, this step is to make sure the competition result is free from any influences or bias to certain group. The assessment for competition is based on criteria such as new innovation, creativity, prototype implementation, as well as presentation and communications skills.

The exhibition was setup in open area in UiTMT campus to cater large group of audiences. The main target visitors are from UiTM members such as students, lecturers and staffs. However, the faculty also invites local secondary schools students and the public to visit the exhibition. The exhibition is opened to public to encourage the students to complete their project with passion and enthusiasm [6]. Exhibition could also be a milestone for them to venture into other engineering exhibition or competition in the future. Before the incorporation of exhibition into FYP, none of the students’ projects were submitted for any engineering exhibition such as Invention, Innovation and design (IID) [7]. This exhibition does not only give positive experience to the participants but also give benefits to the visitors. The visitors can exchange their ideas, knowledge and provide feedback inputs to participants in enhancing the project. At the end of the semester, students are asked to answer a questionnaire related on their feedback towards exhibition and competition FYP event.
RESULTS AND DISCUSSION

This study involved 92 Electrical Engineering diploma students from UiTM Terengganu campus who registered for Final year Project (EEE368) subject in semester November 2011-Mac 2012. 65 students are majoring in Electronics (EE111) and the rest are from instruments major (EE113). 78.3 percent of the students are males and another 21.7 percentage or 20 female students are involved in this study. A survey on the students’ feedback was distributed to the respondents. Data for the study was collected and analyzed using SPSS software. Then the analysis on the survey’s response is presented.

**Motivation to FYP Students:** The graph in Figure 1 shows about 85.8 percent of total respondents agree that FYP exhibition and competition motivates them to complete the project as scheduled. People with specific quantitative goals such as given deadline for completion of task will perform better than people without set goal [8]. This finding is parallel with results for subject EEE368 for semester November 2011-Mac 2012 which achieved 100 percent passing rate. The students have to present their project progress work twice before demo and present their project on final exhibition day. The aim of progress presentation is to monitor the student’s progress to make sure that they are on the right track and in line with the project schedule. McDemott, Nafalsk and Gol [9] stressed out the possible benefits of enhanced learning and to cater for inclusion of generic skills development in FYP course without causing unrealistic stress if the project work is introduced from the beginning of the course.

**Quality Enhancement of FYP Projects:** Based on Figure 2, about 88 percent of respondents agreed the FYP exhibition and competition enhanced the quality of final year project. This finding is parallel with result for semester November 2011-Mac 2012 where most of the students scored A in this course as shown in Figure 3. This is because the students were guided in more structured management of FYP2 course that has been implemented starting from 2010 in UiTMT. A structured management was introduced in FEE, UiTMT to maintain a smooth process of FYP2 implementation and to produce higher quality students’ project which are eligible for exhibition and participation in prestigious exhibition or competition as well as adhering to Outcome Based Education (OBE) requirements [7].
First Experience in Exhibition and Competition Event:
This study also found about 90.2 percent of respondents agreed that the exhibition have given them a good exposure to engineering exhibition or competition as shown in Figure 4. The finding reported in this study shown significant relationship with faculty achievement the past semesters. One silver medal had been won in IID Kedah competition in 2010 and another two bronze medals and two silver medals in Asean International IID competition in UiTM Kedah 2011 and one gold medal and two bronze medals in 3rd International Engineering Invention and Innovation Exhibition 2012 (i-ENVEX), UNIMAP, Perlis. Plus more students will participate in next IID and any engineering exhibition. This trend show more students are confident to join high level competition such as national level and even in international level after the first exposure in this exhibition. This exhibition provide first step journey especially to final year students and give confident to studentsbefore competing in other engineering exhibition in the future.

CONCLUSIONS
The aim of this study is to get feedback from FYP students regarding their exposure in exhibition and competition toward project progression. The finding reported in this study shown that majority of respondents agreed that the exhibition and competition has given positive impact on final year project. Furthermore, the response from the respondents show the exhibition can give them good exposure and first step experience to join other competition particularly in the engineering field. This exhibition also motivates the students in completing their project on time. Based on the survey result, the exposure of exhibition and competition can be considered positively accepted and enjoyed by the students. Graduates who joined this exhibition and competition FYP event have gained significant benefits as they further study in degree level or progress through their career in the engineering field.

REFERENCES