

# THE EFFECT OF ENTRY QUALIFICATION ON THE ACADEMIC PERFORMANCE OF UNIVERSITY DIPLOMA STUDENTS: A COMPARATIVE STUDY BETWEEN SIJIL PELAJARAN MALAYSIA OR MALAYSIAN EXAMINATION CERTIFICATE (GCE O LEVEL EQUIVALENCE) AND CERTIFICATE ENTRY QUALIFICATION.

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## Abstract

A comparative study on the effect of entry qualification toward the achievement of academic performance was done for diploma students at University Kuala Lumpur Malaysian Institute of Industrial Technology. Data on entry qualification and academic performance was obtained from student records for September 2008 until January 2011. The data was analyzed using SPSS for descriptive statistic and t test analysis was also performed to compare performance to entry qualification. There appear to be a significant difference between the two entry qualifications. It is recommended that the university adopt special mentoring or training to students with certificate entry qualification to equip them with necessary skills and knowledge for better academic performance.

**Keywords:** Entry qualification, academic performance, CGPA, SPM, Diploma programs

## 1. INTRODUCTION

The entrance policy for Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKLMITEC, 2015) diploma programs has been rather flexible to provide greater opportunity for students in excessing higher education. There are two pathways that a student can enroll into the diploma programs. First is passing the Sijil Pelajaran Malaysia (SPM) or Malaysian Education Certificate with a minimum of 5 credits. The Malaysian Examination Certificate (SPM) is equivalence to the GCE O level qualification. A student may also enroll into the diploma programs with a CGPA of 2.0 in a Certificate program that is accredited by the Malaysian Qualification Agency (MQA, 2015). The certificate programs are usually a one or two years academic programs offered at higher learning institutions such as community colleges.

UniKL MITEC offers two diploma programs which are Diploma Engineering Technology in Quality Engineering (DQE) and Diploma in Industrial Logistics (DIL). The DQE programs is a technical programs where students are expose to the concept of quality through subjects such as Quality Tools, Metrology, Industrial Engineering, Statistical Process Control and Six Sigma. On the other hand, DIL is a management focus program and students are taught Fundamentals of Logistics, Managing Transport Operation,

Purchasing and Inventory, Warehousing and Customs. The duration for the diploma programs is normally three years programs or six semesters for fulltime students.

Academic performance of students has always been an interest to the academicians and university administrators. This study compares the academic performance of students with SPM and certificate entry qualification for the two diploma programs offered in UniKL MITEC. The academic performance indicator used in this study is the Cumulative Grade Point Average (CGPA) and the completion time measured in number of semester to graduate. Although it is commonly assume that there should be some difference in academic performance between students from the two entry qualifications, no specific comparison study was ever conducted at UniKL MITEC. The findings of this study are relevant to the administrator and academician in understanding the academic performance of the two different entry qualifications. This will lead to better planning in term of course implementation and teaching delivery in producing quality graduates regardless of their different entry qualification pathway.

## 2. OBJECTIVES

From the purpose of the study, the following objectives have been drawn.

- 1) To compare the academic performance in term of CGPA between students who entered with certificate and the students who entered with SPM qualification.
- 2) To compare the time taken to graduate between students who entered with certificate and the students who entered with SPM qualification.

## 3. HYPOTHESIS

The study is based on the two hypotheses A and B as below:

### Hypothesis A

Ho: There is no difference in the CGPA between students who enrolled into the diploma programs with certificate qualification and the students who enrolled with Sijil Pelajaran Malaysia qualification.

### Hypothesis B

Ho: There is no difference in the time taken to graduate between students who enrolled into the diploma programs with certificate qualification and the students who enrolled with Sijil Pelajaran Malaysia qualification.

## 4. SIGNIFICANCE

It is understood that the entry to higher education is make flexible to allow a wider range of candidates to pursue their higher education. The result of this comparative study on the effect of entry qualification toward academic performance will provide significant information to the academic management and academicians on the appropriate measures to improve academic performance of students regardless of their entry point qualification.

## 5. LITERATURE

Excellent academic performance has always been the aim of all university graduates. Many factors are shown to contribute to academic excellence such as cognitive ability, language ability, teaching and learning environment and high school achievement.

Various studies have been done on predicting academic performance base on entry qualification. Although predicting future performance from previous achievement is not an easy task, many researchers have concluded that entry qualification do predict university success. Ogbonnaya, N.P. et al. (2014) in the study involving 390 students from two basic nursing schools in Nigeria concluded that entry qualification do have a positive correlation to academic performance. Similarly, Adebayo, A. S. et all (2014), looked at entry criteria as predictor to academic success of students from the faculty of Business at Solusi University. He found that CGPA at the end of pre-university examination predict the academic success of the pre-university entrants with a positive beta value of 0.677. Results from Alias, M. et all (2006) study on the undergraduate entry qualification and graduate CPA were also consistent with above findings with higher undergraduate performance predicting better graduate CPA.

Past academic performance can also predict Graduation. In a study that analyzed the factors which predict academic achievement at University of Jyvaskyla and Helsinki University of Technology, Finland.

Hakkinen (2004) concluded that initial entry points based on previous performance in school are good predictors of graduation from university in the field of education.

Many researches were also done on the relationship between academic performances from a variant of entry qualification. Adeyemi (2013), compared the performance of final year Bachelor of Education Degrees students who entered the university from three different examination bodies in Nigeria which were West Africa Examination Council (WAEC), the National Examinations Council (NECO) and the National Business and Technical Examinations Board (NABTEB). The result indicated that WAEC entry qualification was the best predictor of success in the final Bachelor of Education degree.

Findings from a study by Abidin, B. et al (2014), involving medical students with low, intermediate and high achievers for selected subjects and CGPA foundation performance indicated good correlation and association to preclinical performance for high achievers. Zezekwa et al (2011) in his study looks at performance in a science course for students with different entry qualification. A significant difference in performance was observed where students with O level and A level science background having better marks in their final examination.

While previous study looked at similar level of entry qualification but vary in terms of awarding bodies, level of achievement and subject, this study will investigate the effect of different level of entry qualification which are certificate and SPM towards academic performance.

## 6. METHODOLOGY

The research is an ex-post facto type since all independent variables have already occurred and were not manipulated. All 264 graduated students' data was used in this study. Sources of data were student records for the cohort of September 2008 semester until January 2011. The records furnished data for entry qualification, completion time (total semester to graduate) and academic performance (CGPA). The students' records were from Diploma of Engineering Technology in Quality Engineering (DQE) and Diploma in Industrial Logistics (DIL) academic programs.

The data was analyzed using SPSS Version 20 for the statistical analysis. Descriptive statistics were used to analyze data on demography and t-test analysis was used to determine the effect of the two factors of interest which are entry qualification and academic performance. Academic performance is measure using two variables which are CGPA and completion time.

## 7. DATA ANALYSIS AND DISCUSSION

The two diploma programs used in this study are Diploma of Engineering Technology in Quality Engineering (DQE) and Diploma in Industrial Logistics (DIL). The overall distribution of students according to entry qualification shows a larger portion for SPM at 59.5% compare to Certificate at 40.5% as indicated in Table 1. However for DQE program, the enrolment from certificate qualification is slightly higher at 54.4%.

Table 1: Distribution of students according to entry qualification.

Program	SPM*	Certificate	Total
	Graduated	Graduated	
DQE	55	66	121
DIL	102	41	143
Total	157 (59.5%)	107 (40.5%)	264

\*Sijil Pelajaran Malaysia or Malaysian Examination Certificate: GCE O level equivalence

One criterion to measure academic performance is the Cumulative Grade Point Average (CGPA). The CGPA is the sum of all semester grade points divided by the total credits hours for all semesters. The average CGPA is calculated from a maximum of 4.00 points. A student with a CGPA less than 1.67 will fail the program. Data of CGPA for both DQE and DIL shows that students with SPM entry qualification graduated with higher CGPA. Refer table 2.

Table 2: The CGPA according to entry qualification for DQE and DIL.

DQE		DIL	
SPM*	Certificate	SPM*	Certificate
3.03- 0.38	2.55 + 0.36	3.03 -0.34	2.75 -0.35

\*Sijil Pelajaran Malaysia or Malaysian Examination Certificate: GCE O level equivalence

The study completion time measured in total number of semester to graduate is another criteria used to indicate academic performance. The normal duration to complete a diploma program is six semesters for a fulltime student. However, students are allowed a maximum of 12 semesters to complete the diploma program. The data in table 3 indicated that students enrolled via the SPM qualification manage to complete their study faster than those with certificate entry qualification. A larger gap is seen for the DQE program with SPM ( $6.11 \pm 0.37$  semesters) and certificate ( $6.48 \pm 0.98$  semesters). This can be explained by the more technical nature of the DQE involving subjects that requires mathematical skills such as statistics. Data from table 2 and table 3 shows that students with certificate entry qualification perform better in the non-technical DIL program with CGPA of  $2.75 \pm 0.35$  and completion time of  $6.27 \pm 0.63$  semesters.

Table 3: The total number of semester to graduate according to entry qualification for DQE and DIL.

DQE		DIL	
SPM*	Certificate	SPM*	Certificate
6.11- 0.37	6.48– 0.98	6.07 -0.25	6.27 - 0.63

\*Sijil Pelajaran Malaysia or Malaysian Examination Certificate: GCE O level equivalence

Table 4 Difference in mean performance of CGPA for SPM\* and Certificate entry qualification.

Entry Qualification	CGPA					
	n	Mean	SD	Calculated t	Critical t	p
Certificate	107	2.62	0.37	-9.050	-1.96	0.000
SPM*	157	3.01	0.35			

\*Sijil Pelajaran Malaysia or Malaysian Examination Certificate: GCE O level equivalence

An independent-sample t-test was conducted to compare the CGPA scores for SPM\* and Certificate entry qualification. There is a significant difference in scores for SPM ( $M=3.01$ ,  $SD=0.35$ ) and Certificate ( $M=2.62$ ,  $SD=0.37$ ;  $t(262)=-9.05$ ,  $p=0.000$ ) entry qualification. The magnitude of the differences in the means was large ( $\eta^2 = 0.24$ ). This indicates a better academic performance in term of CGPA for the SPM entry qualification and thus null hypothesis is rejected for hypothesis A.

Table 5: Difference in mean performance of Completion Time for SPM\* and Certificate entry qualification.

Completion Time	Number of Semester to Graduate					
	n	Mean	SD	Calculated t	Critical t	p
Certificate	107	6.40	0.87	3.661	-1.96	0.000
SPM*	157	6.09	0.30			

\*Sijil Pelajaran Malaysia or Malaysian Examination Certificate: GCE O level equivalence

Another independent sample t-test was also conducted to compare completion time for SPM and Certificate entry qualification. Again, a significant difference is observed in completion time for SPM (M=6.08, SD=0.30) and Certificate entry qualification (M=6.40, SD=0.90;  $t(123)= 3.661$ ,  $p=0.000$ ). The magnitude of the differences in mean was moderate ( $\eta^2 = 0.05$ ). Students with certificate entry qualification take longer time to complete their study and thus the null hypothesis is also rejected for hypothesis B.

## 8. CONCLUSION AND RECOMMENDATION

From the results it can be concluded that students who enrolled into the diploma programs with SPM entry qualification showed better performance in both CGPA and total semester to graduate. This indicates that entry qualification does affect academic performance at the diploma level of study.

It is a noble policy of the university to give opportunity for students from various academic backgrounds to access its diploma programs. However, the findings from this study suggest that students from certificate entry qualification need monitoring and mentoring to ensure better academic performance. A special bridging program can be conducted for all new students to help them adapt to the university learning environment. This program can include study skills workshops, independent learning, understanding the semester system, English and Mathematics workshops.

Academicians teaching the diploma program courses need to be made aware that the students enrolling into the programs are from different entry qualifications. They should also be given proper training in planning and teaching a course with variation of student backgrounds. The use of technology such as e-learning by incorporating interactive videos can also benefit students with different entry qualifications since students can independently review the lesson at their convenience.

The results of this study only showed comparison of the overall academic performance. Further study to compare performance for different categories of subjects such as major subjects and university subjects can be done. The findings of a more in-depth analysis between subjects performance can identify the critical subjects that contribute to a lower performance among the students with certificate entry qualification. This will lead to better implementation of the diploma programs in terms of curriculum development and teaching methodology.

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