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Gap in University Students' Performance: a Study in a Malaysian Public University

L'ECART DANS LA PERFORMANCE DES ETUDIANTS: UNE ÉTUDE DANS UNE UNIVERSITÉ PUBLIQUE MALAISIEENNE

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Abstract: A body of literature has shown that testing students before their final examination serves as a motivational technique. These studies found that having test assessment would stimulates students' study effort and eventually improve their final examination score. Therefore, and arguably, students who performed well in their test assessment would reflect similar performance in their final examination. However, research has shown that students' scores in their test assessment may not be reflected in their final examination, creating a gap between the two scores.

This study examines whether there is a gap in university accounting students' performance between their test assessment score and their final examination score. If there is a gap between the two scores, this study further attempts to identify the factors that influence the gap between the two scores the gap. Four factors were chosen, namely, academic aptitude, preparation time, quantum of rewards offered and evaluation environment. Using questionnaire and secondary data of students' actual performance, this study provides evidence that there is a gap between the assessment score and the final examination score. Further findings show that out of the four factors, evaluation environment plays a significant factor in causing the gap between the two scores. The results of this study provide some understanding to academics and universities on the importance of evaluation environment to students' performance.

Key words: Gap; test assessment; final examination; accounting students

Résumé: Beaucoup d'études ont montré que le test avant l'examen final des étudiants sert de motivation technique. Ces études ont révélé que le fait d'avoir le test d'évaluation pourrait stimuler l'effort d'étude des étudiants et, éventuellement, améliorer leur résultat dans l'examen final. Par conséquent, les étudiants qui ont obtenu un bon résultat dans leur test d'évaluation pourraient avoir des performances similaires dans leur examen final. Cependant, la recherche a également montré que le

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résultat des étudiants dans le test d'évaluation pourrait aussi ne pas être reflété dans leur examen final, ce qui crée un écart entre ces deux résultats .

Cette étude examine si il y a ce genre d'écart chez les étudiants en comptabilité entre leur résultat de test d'évaluation et de leur examen final. S'il y a un écart entre les deux évaluations, cette étude tente d'identifier les facteurs qui influent sur l'écart entre ces deux évaluations. Quatre facteurs ont été choisies, à savoir l'aptitude scolaire, le temps de préparation, le quantum de récompenses offertes et l' environnement d'évaluation. En utilisant le questionnaire et les données secondaires de la performance réelle des élèves, cette étude fournit la preuve qu'il existe un écart entre le résultat du test d'évaluation et celui de l'examen final. D'autres résultats plus approfondis montrent que l' environnement d'évaluation joue un rôle important dans la provocation de l'écart entre les deux résultats. Les résultats de cette étude fournissent une certaine compréhension pour les académies et les universités sur l'importance de l' environnement d'évaluation vis à vis de la performance des étudiants.

Mots-Clés: écart; test d'évaluation; examen final; étudiant en comptabilité

1. INTRODUCTION

There are a variety of techniques used to evaluate students. Few universities have implemented evaluation technique where students are evaluated based on the score achieved in the final examination. In this circumstance, students are taught and are expected to do their revision and assess their knowledge and understanding on their own before sitting for the final examination. However, one most common evaluation technique implemented by universities throughout the world is a combination of continuous assessment and final examination. Continuous assessment normally comprises of tests, quizzes, project paper and simulation among other types of assessment. Assessing students on a continuing basis would motivate students to consistently revise their subjects which eventually improve students' performance in final examination.

A body of literature has shown support that testing students before their final examination serves as a motivational technique. These studies show that having test assessment would stimulate students' study effort and eventually improve their final examination score. Therefore, and arguably, students who performed well in their test assessment would reflect similar performance in their final examination. However, research has shown that students' score in their test assessment may not be reflected in their final examination, creating a gap between the two scores. Such conflicting arguments intrigue this study to investigate further whether there is a gap between students' test assessment and if yes, what are the possible factors influencing the gap.

The remainder of this paper is structured as follows. The next section provides a brief literature review on the link between students' evaluation technique and students' performance. Section 3 provides the framework and hypothesis. The fourth section outlines the research model. Section 5 presents the research design and section 6 presents the results of this study. The last section concludes this study.

2. LITERATURE REVIEW

Evaluation is important particularly in the academic world as it determines and reflects students' skills and knowledge of a subject taught. It represents a process of determining as to what extent the educational objectives are met (Tyler, 1986). By having evaluation on students, an instructor would be able to identify students' level of understanding of subject taught (Balla and Boyle, 1994).

A body of literature has found that most academic prefer to use one evaluation technique involving students being given tests and quizzes (Paschal et al., 1984; Vruwink and Otto, 1987). These studies found that such evaluation technique helps to motivate students and improve their performance in the final examination (Rutter et al., 1979; Baldwin, 1980; Elikai and Baker; 1988; Ashworth, 1993). For example; Baldwin (1980) found that students who were given test would increase their learning desire and such desire influence the final examination score. This is consistent to Norman's theory (1981) who argued that such evaluation technique has a significant impact on students' performance and skill. However, there are studies that provide conflicting results when they found that giving test does not affect students' performance in their final examination. (Vruwink and Otto, 1987; Ashworth, 1993). Further, although the studies in this body of literature has shown that providing tests and quizzes would consistently influence the students' final examination score, these studies did not examine whether the students' test assessment score is consistent to the final examination score. Such argument is given because if students have consistently learnt and revise for their test, this provides some indication that the score in their test would be consistent to their final examination score (Turner et al., 1997). Therefore, this study aims to examine whether there is a gap in students' performance between test assessment score and final examination score. To the knowledge of the researcher, such study has yet to be conducted in the accounting education perspective.

Another body of literature has focused on examining the factors that may influence the final examination score (Gold, 1971; Hales et al., 1971; Chance, 1992; Turner et al., 1997). Among the factors are prior course work (Cohen and Cohen, 1983), final examination scheduling (McClain, 1983; Williams et al., 1988; Reed and Holley, 1989); performance measures (Eskew and Faley, 1988; Curwin et al., 1988; Chance, 1992; Ravencroft and Buckless, 1992); testing frequency (Dustin, 1971) and academic aptitude (Eskew and Faley, 1988). Other studies examined variables such as self efficacy (Christensen et al., 2002, Tho, 2007); motivation (Yamamura et al., 2000; Chen et al., 2006), study style (Chen et al., 2006) and class length (Ewer et al., 2002). These studies produce mixed results, which motivates this study to re-examine this issue. This study, however, focuses on the factors that may influence the gap of scores between the test examination and final examination. Two factors are chosen in this study, academic aptitude and performance measures as these factors may be closely related to influencing gap (if any) rather than other factors.

In addition, there may also be other factors that could influence gap between test assessment and final examination score which has not yet been examined such as the evaluation environment and the amount of time allocated during the assessment (time preparation). This study includes these factors as it is believed that the ways the two evaluations (test assessment and final evaluation) are conducted may vary. Therefore, this study examines the influence of four factors; namely, academic aptitude, performance measures, evaluation environment and time allocated during assessment on the gap of students' performance between test assessment score and final examination score.

3. FRAMEWORK AND HYPOTHESIS

3.1 Framework

Figure 1 illustrates the framework that underpins this study. The framework shows that there is a gap of students' performance between test assessment and final examination. The framework also shows that four factors may influence the gap performance, namely, performance measure, academic aptitude, evaluation environment and time preparation.

Research has shown that academics believe that performance in test assessment should reflect the same in their final examination. These studies indicate that having tests would stimulate students' effort in studying and therefore, improve final examination performance. However, there are studies that suggested performance obtained in test assessment does not necessarily correspond to their performance in final examination score. Therefore, the gap in students' performance is the dependent variable.

This study further attempt to examine the factors that may influence the gap (if any) between test

assessment and final examine. Four factors were examined, namely, performance measure, academic aptitude, evaluation environment and time preparation are chosen. In this study, academic aptitude refers to the influence of the academic on students' performance. Performance measure refers to the influence of rewards of evaluation on students' performance. Evaluation environment refers to the effect of situation and location of the evaluation being conducted on students' performance. Time preparation refers to effect of time allocation and flexibility on students' performance. These four factors become the independent variables.

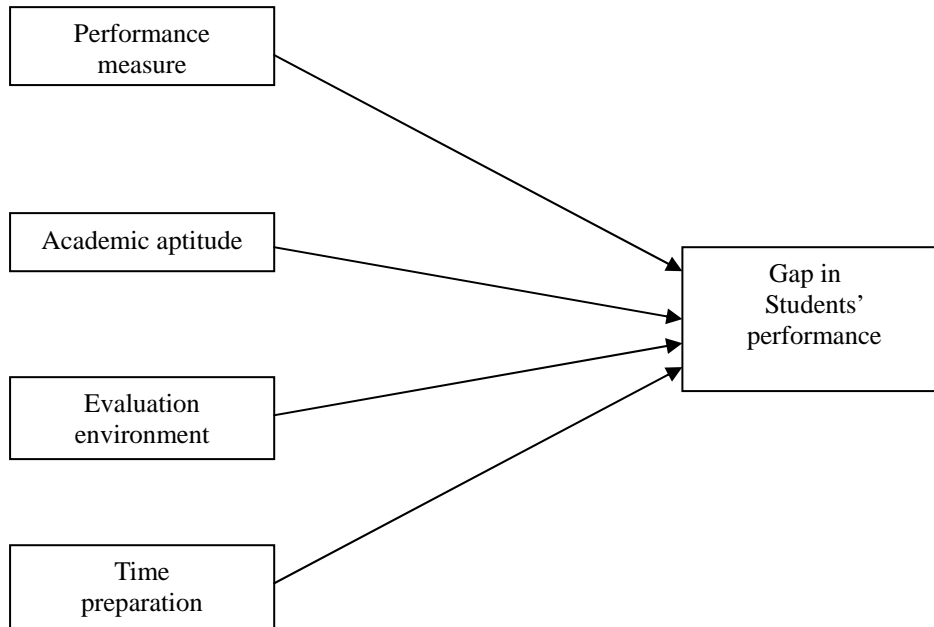


Figure 1. Framework of this study

3.2 Hypothesis

Studies have provided support on the effectiveness of having test assessment before final examination in order to improve students' performance in final examination (Rutter et al., 1979; Baldwin, 1980; Elikai and Baker; 1988; Ashworth, 1993). They argued by giving test assessment to students would lead them to consistently learn and revise for their test, and the results in test would be reflected in their final examination performance (Turner et al, 1997). However, there is a dearth of studies that examine whether there is a gap in students' performance between test assessment score and final examination score. This study aims to investigate this issue. Therefore, the following hypothesis is developed.

H1: There is no significant difference between the test assessment score and the final examination performance among the students.

4. THE MODEL

A number of studies have examined the factors that may influence the final examination score (such as Turner et al., 1997). Few studies have shown that prior course work (such as Cohen and Cohen, 1983), final examination scheduling (such as Reed and Holley, 1989); performance measures (such as Eskew and Faley, 1988) and academic aptitude (such as Eskew and Faley, 1988) influence final examination performance. However, these studies did not examine whether such factors may also cause the gap in students' performance between test assessment and final examination.

This study uses regression analysis to develop the model in this study. This study tests whether the

four factor variables chosen could cause the gap in students' performance between test assessment and final examination. The four factors are as follows:

EE = Evaluation environment

AA = Academic aptitude

TP = Time preparation

PM = Performance measure

Upon identifying the factor variables, the dependent variable is determined as follows:

Y = Student's gap performance

The difference between test assessment scores and final examination scores are used as indicator of students' gap performance.

$$Y = a + b_1EE + b_2AA + b_3TP + b_4PM + U$$

5. RESEARCH DESIGN

This study focuses on the gap in students' performance between test assessment and final examination scores in Introductory Accounting. Specifically, this study looks into whether:

1st. There is a gap in students' performance between test assessment and final examination scores in Introductory Accounting.

2nd. Factors such as academic aptitude, performance measures, evaluation environment and time allocated during assessment influence the gap between the test assessment and final examination scores.

This study examines these issues by way of questionnaire and secondary data.

5.1 Sample

One hundred and eighteen students who were enrolled in the Introductory Accounting course in a semester of a public university in Malaysia are chosen in this study. These students are chosen as they enrolled for this course at the same time, having the same instructor and studied the same contact course and hours. Choosing subjects from a single section would alleviate compounding factors such as differential selection of subjects, differences in instructors and instructional patterns.

Of the 118 students, 117 completed the Introductory Accounting course. Nine students were later left out as these students have repeated the Introductory Accounting course which may provide biases to the results in this study. The final sample is 108 subjects. Out of the 108 subjects, 69 students responded to the questionnaire whereas 39 did not respond to the questionnaire².

5.2 Questionnaire design

This study uses questionnaire survey to examine the factors deemed to be causing the gap in students' performance between test assessment and final examination. The questionnaire consists of two parts. Part A requests the students to answer questions related to their demographic profile such as gender, the semester the students are in and their students' identification number. Students' identification number is necessary to allow the researcher to match the students' performance with their respond to the questionnaire.

² A test was conducted at the later stage to determine whether there is any significant difference in the performance gap between students who responded to the questionnaire and those who did not respond to the questionnaire. The results show no significant difference between the two groups ($p=0.199$). This indicates that the study could conclude the findings to represent the whole group selected in this study.

Part B consists of questions related to the four factors that may influence gap performance. The first factor is evaluation environment. This factor is further divided into four variables, namely, location, formality of conducting evaluation, disruption and time schedule. The second variable is academic aptitude. Under this factor, four variables are determined, namely, to increase students' confidence, sympathetic, syllabus coverage and marks allocation. The third variable is students' time allocation. Under this factor, the four variables are ability to complete, more time to study, time allocated to each question in the test or final examination and the question level of difficulty. The last factor is performance measurement (rewards). This factor is further divided into four variables, namely, degree of rewards for final examination, easier to obtain rewards in final examination compared to test assessment, degree of rewards in test assessment and work harder when knowing that rewards obtained in test assessment forms part of total grade. The respondents are asked to respond to the four factors using a 5-point scale from 1 (highly disagree) to 5 (highly agree)

5.3 Secondary Data

This study also uses data related to students' scores for their test assessment and their final examination. For the test assessment, syllabus coverage is normally limited depending on where the academic has covered the syllabus during the semester. The length of assessment for test is normally ranging from 1 1/2 to 2 hours. The score obtained in the test assessment would form part of the total grade of a particular course. In contrary, students would sit for the final examination at the end of the semester in which all the syllabus for the particular course would be included. The length of assessment for final examination is 3 hours. The score obtained in final examination also form part of the total score, although the maximum score for final examination would generally contribute more compared to maximum score of test assessment on the overall total score.

5.4 Dependent Measures

Gap in students' performance is determined by comparing the score of test assessment and the score of the final examination. As the maximum score in the test assessment is generally less than the maximum score in the final examination, for this study, the two score is inflated to 100 percent. This is done to ensure comparison between the two scores.

6. RESEARCH RESULTS

6.1 Gap Performance

Table 1 presents the findings of the null hypothesis in this study. The hypothesis states that there is no significant difference between the test assessment score and the final examination performance among the students. Paired T-Test was used to examine hypothesis 1.

Panel A of table 1 provides the descriptive statistics of test assessment and final examination scores. In general, students have a mean score of 72.45 for their test assessment whereas their mean score for their final examination is 63.29. The difference in their scores provides indication that the students' performance for their test assessment is higher compared to their performance in the final examination.

The gap performance between the test assessment score and their final examination score resulted in a mean score difference of 13.95. Panel B of table 1 presents the statistical results on the performance gap between test assessment and final examination. The results show a significant difference between the test assessment score and final examination score ($p=0.001$). Hypothesis in this study is therefore, rejected.

Table 1. Test assessment and final examination scores

Panel A: Descriptive statistics of test assessment and final examination scores

	N	Mean	Standard Deviation
Test assessment (TA)	69	72.45	12.96
Final examination (FE)	69	63.29	14.79
Gap (TA – FE)	69	13.95	10.99

Panel B: Paired T-Test on the performance gap between test assessment and final examination

	Paired Difference		t	Sig.
	Mean	Std. Deviation		
Gap performance	-9.1556	15.2719	-4.980	0.001

6.2 Descriptive statistics of factors influencing students' performance gap

This section presents the results of the model developed in this study. Four factors were chosen to determine their significance in causing the gap between continuous assessment and final examination. The four factors are performance measure, academic aptitude, evaluation environment and time allocation.

Table 2. Descriptive statistics of four factors (in percentage)

	Factors	Highly disagree	Disagree	Neither	Agree	Highly agree
	Performance measure					
1	Degree of rewards in final exam influence performance	0	0	14.5	63.8	20.3
2	Easier to obtain rewards in final exam compared to test	4.3	21.7	46.4	18.8	8.7
3	Degree of rewards in test influence final exam performance.	1.4	8.7	13	56.5	18.8
4	Work harder if know that rewards in test influence final exam performance	1.4	0	14.5	49.3	33.3
	Academic aptitude					
5	Academic presence increase confidence	1.4	4.3	26.1	52.2	15.9
6	Academic being sympathetic	1.4	17.4	31.9	40.6	8.7
7	Syllabus coverage	4.3	24.6	18.8	46.4	5.8
8	Marks allocation	1.4	17.4	31.9	44.9	2.9
	Evaluation environment					
9	Location	4.3	10.1	18.8	53.6	11.6
10	Formality of conducting evaluation	4.3	13.0	21.7	47.8	10.1
11	Disruption during evaluation	4.3	21.7	18.8	43.5	8.7
12	Time schedule	2.9	13.0	21.7	53.6	7.2
	Time preparation					
13	Ability to complete on time	0	10.1	26.1	44.9	18.8
14	Time allocated for each question in the evaluation	1.4	8.7	26.1	56.5	7.2
15	More time to study	0	2.9	10.1	44.9	40.6
16	Test question is more difficult compared to final exam question	1.4	15.9	42.0	33.3	7.2

Table 2 presents the descriptive statistics of the four factors. The results show that most respondents agree that rewards (performance measure) play an important role in determining their performance. Specifically, 84.1% of the respondents agree to the statement that states degree of rewards offered in final examination influence their performance. Most of the respondents also agree that they would work harder if they know that the rewards in a test or quiz would form part of the total grade (82.6%). Only 27.5% of the respondents agree that it is easier to obtain rewards (higher score) in final examination compared to test assessment.

Table 2 also show that for academic aptitude, respondents would be at ease and have more confidence if their teaching academic is present during the assessment or final examination (68.1%), hence increasing their performance. More than half of the respondents do not agree that academic being sympathetic, the coverage of syllabus and marks allocation influence their performance.

The results show that more than half of the respondents agree that there is a difference in terms of evaluation environment. Specifically, the respondents agree a difference in terms of formality in conducting evaluation (65.2%) and time scheduling (60.8%).

Finally, the results in table 2 shows that time preparation could also influence students' performance. Specifically, 85.5% of the respondents agree that the amount of time allocated for them to study would influence their performance. Sixty four percent of the respondents and 63.7% of the respondents agree that the ability to complete on time and the time allocated for each question in the assessment respectively influence their performance.

6.3 Regression analyses of factors influencing students' performance gap

This section presents the regression analysis to test the model developed in this study. Panel A, Table 3 presents the results of the regression analysis which shows R square of 10.1%. The results indicate that only 1 out of the 4 factor variables can explains 10% of the students' performance, the rest 90% is explained by other factors not mentioned in the regression model developed in this study.

Table 3. Factors influencing performance gap

Panel A: Summary output of regression analysis					
Regression statistics					
R	0.318				
MR Square	0.101				
Panel B: Regression analysis					
Model	Unstandardised coefficients Beta	Std. error	Standardised coefficients beta	T	Sig.
Gap	-4.656	19.388		-0.240	0.811
EE	-5.685	2.476	-0.305	-2.296	0.025
AA	-1.257	3.370	-0.052	-0.373	0.711
TP	1.369	3.922	0.047	0.349	0.728
PM	3.715	4.209	0.117	0.883	0.381

Panel B, Table 3 shows the regression analysis on the four factors that may influence the gap in students' performance between test assessment and final examination. The results show that out of the four factors, only evaluation environment plays a significant role in causing the gap between test assessment and final examination ($r=0.025$). The relationship between evaluation environment and

performance gap is accepted with the coefficient value of -5.685 and a negative, significant t-value of -2.296. The results indicate that the students performed much better in their test assessment and less better in the final examination due to the difference in the evaluation environment of the two assessments. The results, however, indicate that academic aptitude, time preparation and performance measure does not affect gap in students' performance between test assessment and final examination.

7. SUMMARY AND CONCLUSION

This study examines whether students' performance gap exists between test assessment and final examination and if yes, what are the possible factors influencing the gap. Using questionnaire and secondary data, the results show that there is a gap in students' performance between test assessment and final examination. The results indicate that students who performed well in test assessment may not necessarily perform well in their final examination and vice versa. The results also show that the way an evaluation being conducted play an important role in influencing students' performance.

The finding in this study deems important as it represents a new variable that needs to be taken into consideration when evaluating students' performance in higher education. It is also important for researchers in this area to further examine this factor in future research. This finding leads to the conclusion that academics and universities need to take into consideration on the consistency of the evaluation environment in order to produce a consistency in students' performance between test assessment and final examination.

This study has two main limitations. First, this study was carried out in an institution where the researcher has experienced students' performance in test assessment varies than their performance in their final examination. Such circumstances may not exist in other institutions. Further research could be conducted to examine this issue in a wider setting.

This study only includes four possible factors that may cause the students' performance gap between the test assessment and final examination. Out of these four factors, only evaluation environment seems significant in influencing the gap. Perhaps future research could include other factors which are not included in this study.

Finally, the results of this study provide some understanding on the factors that may influence students' performance during their evaluation. Such understanding would assist academics and universities to improve their operations to ensure the consistency of students' performance.

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