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# Assessment of Traditional and System-based Management Examination in Computer in AMA School, Olongapo City, Philippines

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## Abstract

The study aimed to determine the effectiveness of Traditional and System-based Management examination in computer in AMA School, Olongapo City Philippines. The researcher employed the use of descriptive-analysis method of research with the use of questionnaire and documentary analysis. The study covered the one-hundred twenty (120) BSCS and BSIT student respondents from AMA Computer College-Olongapo City Philippines. Most of the student-respondent perceived to be Moderately Effective (ME) in the traditional examination approach and perceived to be Effective (E) in system-based management approach of examination. Overall findings support the superiority of System-based Management Examination of Computer Subjects. Recommendations are also provided.

**Keywords:** Traditional examination; System-based examination; Education; Assessment; Academic performance

## Introduction

As information technology keeps improving, numerous of educational assessments have been transformed from traditional paper-and-pencil to computerized and system-based format in recent years. Assessment of Students Academic Performance is a significant task an Educator must provide in the context of Education. The methods of assessment of student's academic abilities however have evolved, to come up with an organized set of questions in a bunch of papers that is known as examinations or exams. Ratings in form of numbers however show the level of ability of a student, and to figure or assess their effectiveness which is benefitting knowledge for students, parents, and instructors, etc. During the examination session, a number of aspects need to be simultaneously handled. These include scheduling, where examination schedules and venues are decided upon; grading, where test papers are checked and marked; quality question, creation of test papers etc., where all contributes in a better learning outcome and assessment.

Based from the scenarios in an Educational Institution, quite a number of students were complaining right after they have taken a traditional examination approach whereby they can't automatically know the result of their scores and couldn't be able to evaluate themselves if they have really learned the desired lesson right after the examination session. Further, it took a number of weeks in order for them to know the result of their examination. Also, some students felt bored in taking an examination through the traditional approach. In some cases, others are intimidated with their Proctor who is observing them while taking the traditional exams. All of the mentioned scenarios resulted in a low scores in examinations [1-3].

These scenarios, therefore; lead the researcher to think of an alternative for the students to better assess their learning outcomes more precisely and accurately, to motivate them to make an examination more interesting in their part, and to use other approach of examination wherein they can concentrate on each question carefully in order for them to perform better in examinations which better affect their learning outcomes. With these in mind, the researcher wanted to have an in-depth investigation if there are differences in students' performance through a Web-based section of an examination and examining in a bricks and mortar or the traditional section of the same course at AMA Computer College - Olongapo where is known as a Computer School [4]. The researcher also wanted to investigate further the student satisfaction between a Web-based approach of an examination and a traditional approach of the same course [5,6].

Every Educator wants to become effective in their area of responsibility. Likewise, instructors/teachers need to find ways on how to motivate and help the students in gaining high scores and grades which reflects to their effectiveness as an Educator. Therefore, instructors/teachers should be equipped in the task of finding alternatives and approaches in learning and examinations that will suit to the student's motivation and atmosphere in order to achieve quality performance of their learning outcomes; this is the rationale of this study.

## Relationship of Reviewed Literature and Previous Studies to the Present Study

There were number of previous studies deemed relevant and crucially related to the present investigation. Ideas and concepts taken from the reviewed studies provide rich and sufficient background on the conduct of the present inquiry and so were helpful in the overall conceptualization of the present study.

It was noted that the previous studies conducted by JeffMcGough et al. [2] in their investigation of Web-based MBA (Master of Business Administration) programs; **Hiltz and Beta-Jones** are related to the present study [4]. The related studies reviewed and the present studies are quite similar for they both made an assessment regarding the use of the system-based management examinations and traditional examinations. The studies had different settings and different respondents but all of them arrived at almost the same findings.

In relation, the former predicted the students' satisfaction and performance to be satisfied with the system-based management examinations whereas the latter considered the Gross Percentage Average and Perception of the student-respondents at AMA Computer College Olongapo which appears favorable in system-based management examination rather than in traditional.

But then, the studies were herein reviewed were deemed related to the present study in the sense that both studies revealed that system-based management examinations provided similar or even higher results than traditional examinations. In terms of satisfaction, systembased management examinations appeared to perform well, but still those students who often perform academically do the same in the two approaches of examinations. It appeared that the students' knowledge and skills are still the best foundation for passing an examination, however; factors like using some strategy through building up a system-based management examination will in somehow helps to motivate the examinee to perform better [7,8].

In general, little differences were noted in the investigations conducted particularly on the type of the respondents, the size and profile of the respondents, venues, scope, time frame, research design, methodology, statistical tools, findings and recommendations. Most of the previous researches utilized the combination of descriptive and analytical methods. The present study used of descriptive-analysis method with documentary analysis as the main source of gathering data because the present researcher wanted to find out the difference of the student respondents' Gross Percentage Average (GPA) on the use of the traditional and system-based management examinations [9-12].

## Research Design

The study made use of descriptive-analysis method of research. This method involves the description, recording, analysis and interpretation of condition that exists in the assessment of traditional and system-based management examinations in AMA School [13-15].

The respondents of this study are the one hundred and twenty (120) students from the Bachelor of Science in Computer Science (BSCS) and Bachelor of Science in Information Technology (BSIT) students of AMA Computer College-Olongapo Campus during the First Semester of Academic year 2011-2012. They were selected using Slovene's Formula and stratified random sampling. **Table 1** presents the distribution of the respondents.

**Table 1:** Stratified random of the student-respondents

Section	Population	Sample	Course
FF	40	28	BSIT
GG	40	28	BSIT
HH	34	24	BSIT
II	28	20	BSCS
JJ	28	20	BSCS
Total	170	120	BSIT=80 BSCS=40

**Table 1** shows the stratified random of the student-respondents that was made used by the researcher to arrive at a total number of 120 respondents for this study [16-18].

The data were gathered by the researcher through a series of examination from Prelim, Midterm, Semi-Finals and Finals. The examination is composed of two quizzes and one major exam. The content of the examination for both approaches are the same. Each student respondents will take both the Traditional and System-based management examinations. The researcher administered the examinations for both approaches to his class in COMPO and CSCI subjects; however, examination through the use of the system-based was given an assistance by a CS/IT Faculty through helping him to install the Wondershare Quiz Creator System as software to be used in a 40 unit computers of the Computer Laboratory Room-1 at AMA Computer College-Olongapo [19,20]. The result of each examination is recorded by the researcher for the data treatment and analysis of this study.

## Results and Discussion

**Table 2:** Summary table on the perceptions towards traditional examination approach

Traditional Examination	Overall Mean	Weighted	Qualitative Interpretation
Prelim	75.15		Poor (P)
Midterm	80.23		Good (G)
Semi-Final	78.36		Average (A)
Final	78.19		Average (A)

**Table 2** shows the summative table on the perceptions towards traditional examination approach. In the Prelim Examination, it obtained an overall weighted mean of 75.15 interpreted as Poor (P). In the Midterm Examination, it obtained an overall weighted mean of 80.23 interpreted as Good (G). In

the Semi-Final Examination, it obtained an overall weighted mean of 78.36 interpreted as Average (A). In the Final Examination; it obtained an overall weighted mean of 78.19 interpreted as Average (A).

**Table 3:** Summary Table on the Perceptions towards System-based Management Examination Approach

System Management Examination	-based	Overall Weighted Mean	Qualitative Interpretation
Prelim		82.69	Very Good (VG)
Midterm		85.55	Very Good (VG)
Semi-Final		89.11	Outstanding (O)
Final		85.33	Very Good (VG)

**Table 3** shows the summative table on the perceptions towards system-based examination approach. In the Prelim Examination, it obtained an overall weighted mean of 82.69 interpreted as Very Good (VG). In the Midterm Examination, it obtained an overall weighted mean of 85.55 interpreted as Very Good (VG). In the Semi-Final Examination, it obtained an overall weighted mean of 89.11 interpreted as Outstanding (O). In the Final Examination, it obtained an overall weighted mean of 85.33 interpreted as Very Good (VG).

**Table 4:** Analysis of variation to test significant difference towards traditional examination approach when grouped according to profile variables

Source Variation	of	SS	df	MS	Fcv	Ftv	Decision
Age	Between Groups	2.94	3	0.98	0.09	3.94	Accept Ho
	Within Groups	126.33	116	1.089			
	Total	102.325	119				
Sex	Between Groups	3.7509	1	1.25	1.854	6.84	Accept Ho
	Within Groups	78.241	118	0.674			
	Total	81.992	119				
Course	Between Groups	0.7632	1	0.763	0.886	6.84	Accept Ho
	Within Groups	101.56	118	0.861			
	Total	102.325	119				

**Table 4** shows the Analysis of Variance (ANOVA) to test the significant difference towards traditional examination approach when grouped according to age profile variables. On age profile variable, obtained Fcv=0.0899 which is less than (<) Ftv=3.99, therefore Null Hypothesis is Accepted, hence there is no significant difference when grouped according to age. The no significant difference could be accounted on the likeness of

experiences of the studentrespondents during examination. The young and old alike encountered the agony, stress and pressures in taking examination especially when they are not ready of taking the examination because they fail and lack to conduct review of their lesson. On sex profile variable, obtained Fcv=1.8539 which is less than (<) Ftv=6.84, therefore Null Hypothesis is Accepted, hence there is no significant difference when grouped according to sex. The no significant difference could be accounted on the similarity of experiences of the student-respondents during examination. Both male and female encountered the same difficulty or easiness in taking examination depends on the kind of subject. Both genders equally perceived that taking the traditional examination sometimes causes anxiety, and stress. On course profile variable, obtained Fcv=0.8864 which is less than (<) Ftv=6.84, therefore Null Hypothesis is Accepted, hence there is no significant difference when grouped according to course. The no significant difference could be accounted on the resemblance and parallelism of experiences regardless of course that everybody undergone taking the examination using pen and test papers. Regardless of courses, everybody had to prove meeting the minimum standard requirement set in the curriculum to pass the subject by passing the prelim, midterm, semi-final and final examination.

**Table 5:** Analysis of Variation to test Significant Difference towards System-based Management Examination Approach when grouped according to profile variables

Source Variation	Of	SS	df	MS	Fcv	Ftv	Decision
Age	Between Groups	0.4352	3	0.4352	0.7516	3.94	Accept Ho
	Within Groups	68.364	116	0.579			
	Total	68.8	119				
Sex	Between Groups	0.7347	1	0.7347	0.8533	6.84	Accept Ho
	Within Groups	101.59	118	0.861			
	Total	102.325	119				
Course	Between Groups	1.3096	1	1.3096	2.289	6.84	Accept Ho
	Within Groups	67.4904	118	0.572			
	Total	68.8	119				

**Table 5** shows the Analysis of Variance (ANOVA) to test the significant difference towards system based approach when grouped according to profile variables. On age profile variable, obtained Fcv=0.7516 which is less than (<) Ftv=3.94, therefore Null Hypothesis is Accepted, hence there is no significant difference when grouped according to age. The no significant difference could be accounted on the parallelism and relationship of experiences of the student-respondents regardless of age during examination using computer system

based approach. Based on age of the respondents, those who belong to [18-20] were considered as the adult and [14-16] as the youngest group somehow given an equal chance and opportunity to explore the use of computer. On sex profile variable, obtained  $F_{cv}=0.8533$  which is less than ( $<$ )  $F_{tv}=6.84$ , therefore Null Hypothesis is Accepted, hence there is no significant difference when grouped according to sex. The no significant difference could be accounted on the parallelism and similitude of experiences of the student-respondents during examination. The difficulty of taking examination. On course profile variable, obtained  $F_{cv}=2.289$  which is less than ( $<$ )  $F_{tv}=6.84$ , therefore Null Hypothesis is Accepted, hence there is no significant difference when grouped according to course. The no significant difference could be accounted on the congruence and resemblance.

**Table 6:** T-test table to test significant difference on the traditional and system-based management examination approach

		Variable 1 Traditional	Variable 2 System-based
Mean		4.8229	3.3229
Observations		4	4
Pearson-Correlations		0.7515	0.733
Hypothesized Difference	Mean	0	0
df		3	3
T Stat		12.47025	
Ttv (.05) Sig. Level		2.353	
Ttv (.01) Sig. Level		4.541	
Decision		Reject Null Hypothesis	

**Table 6** shows the T-test computation value to test the significant difference on traditional and system based examination approach. The computed t-test value is 12.4705 which is greater than ( $>$ ) the t-test tabular value at 0.01 (4.541) and at 0.05 (2.353), therefore the Null Hypothesis is Rejected, hence, there is significant difference on the traditional and system based examination approach. The significant difference lies on the peculiarity of each approach. Each has a separate mechanism, but with the same purpose of assessing the learning process of the learner. The system-based management examination approach provides a clear unbiased test administration and scoring in which the other tends to have biased being subjective when correcting manually. The traditional approach could have the high possibility of committing errors in scoring while the system-based approach provides high scoring, efficiency, and fast delivery of examination results.

**Table 7:** Pearson-r correlation table between traditional and system-based management examination approach (\*\*Correlation is significant at .05 Alpha Level of Significance)

		Traditional	System-based
Traditional	Pearson – r Correlation	1	.788**
	Sig (2-Tailed) N		0
		120	120
System-based	Pearson – r Correlation	.788**	1
	Sig (2-Tailed) N	0	
		120	120

**Table 7** shows the Pearson-r Correlation values between traditional and system- based approach in the Examination. The computed Pearson-r value is  $\pm .788^{**}$  which denotes high correlation. This implies that when the respondent performs good in the traditional examination approach, he/she will also perform good in the system-based management examination approach.

## Summary of Findings

The student-respondent perform Poor (P) in the Prelim, Good (G) in Midterm and in Semi-final and Final examination obtained Average (A), respectively in the traditional examination. Student-respondents performance appeared poorly equivalent in their Gross Percentage Average or their learning outcomes. The same findings on the evaluation made of Beta, Jones and Avery which traditional courses earned lower than the system-based offers. In this reason, the goal for a quality education will not meet. The student-respondent perform Very Good (VG) in Prelim, Very Good (VG) in midterm, Outstanding (O) in Semi-final and Very Good (VG) in the final examination in the system-based management examination. The student-respondent perceived to be Moderately Effective (ME) in the traditional examination. The student-respondent perceived to be Effective (E) in system-based approach of examination. This clearly signifies that there may be additional factors and motivation that are influencing the student-respondents in taking an examination which are present in the system based management examination approach. The effectiveness could be accounted on the capability of the system to ensure consistency and reliability. Timing is rigidly controlled so that every candidate has exactly the same amount of time available. There is no significant difference on the perception towards traditional examination approach when grouped according to age, sex, and course. On age profile variable, the no significant difference could be accounted on the likeness of experiences of the student-respondents during examination. There is no significant difference towards system-based management approach of examination when grouped according to age, sex and course. On age profile variable, the no significant difference could be accounted on the parallelism and relationship of experiences of the student-respondents regardless of age during examination using the system-based management examination approach. There is significant difference on the effectiveness between the traditional and system-based management examination. The significant difference lies on the peculiarity of each approach. There is high relationship between traditional and system based approach of examination. This implies that when the student-



respondent performs good in the traditional examination approach, he/she will also perform good in the system-based management examination approach.

## Recommendations

The researcher has formulated the following recommendations: selective implementation of the system-based management examination approach in higher years and other courses in AMA Computer College; set the time and speed based on the capability and abilities of the students; to develop a system applicable to other academic skills or subjects; provide training to all teachers who will be using the system in order to improve their competencies in preparing the examination in their own respective field, area or specialization; to conduct a related study with the use of experimental research design; and to conduct a follow-up in depth study with wider scope.

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