THE EFFECTS OF DIGITAL-BASED EXAMINATION ON STANDARD FIVE PRIMARY STUDENTS' ACHIEVEMENT IN MALAY LANGUAGE SUBJECT

Adenan Ayob

Assoc. Prof. Dr., Universiti Pendidikan Sultan Idris, MALAYSIA, adenan@fbk.upsi.edu.my

Abstract

In the era of information and communication, digital technology contributes to the development of examination orientation in the classroom. From that aspiration, researchers were trying to carry out related research. Thus, research was conducted to review student achievement in Malay Language subject before and after student was exposed to digital-based examination. Quasi-experiment was conducted to review the mean difference before and after the students was exposed to digital-based examination. The sample consisted of 30 primary students in the Federal Territory, Kuala Lumpur, Malaysia. The sample is an intact group. The sample was determined by the school. The results showed that there were significant differences between pre-test and post-test. As a conclusion, the Ministry of Education, Malaysia has to create a comprehensive digital-based examination in all states in Malaysia to strengthen the information technology implementation in the classroom. In terms of implication, this study can generate innovation in digital-based examination in the classroom.

Keywords: Digital technology, digital-based examination, achievement, Malay language subject.

1. INTRODUCTION

Malay Language was selected and used as the language of instruction in schools since the independence achieved by Malaysia. According to Adenan Ayob and Khairuddin Abdullah (2012), Malay Language move in line with the requirements stated in the Razak Report (1956) and Rahman Talib Report (1960). They add that the basis of the report is focused on the efforts of the Ministry of Education (MOE) for a drastic change in the examination and evaluation.

In 1961, the evaluation of teaching and learning Malay in primary schools has been carried out intensively to upgrade student achievement (Adenan & Khairuddin Mohamad Ayob, 2012). Malay Language was as core subjects in public examinations, such as the Primary School Assessment Test (UPSR).

In primary school level, the skill of answering question was focused by a teacher. Thus, the skill of answering the question in Malay needed a student to achieve high grade in Malay Language. In the new era, the design

of examination is still given special emphasis by a teacher in primary schools. This is because a large percentage of student achievement depends on the examination that has been practiced for so long (Abdul Rasid Jamian & Zulkafli Abu Zarin, 2008).

2. PROBLEM STATEMENT

The effect of the use of the conventional method in the examination contributed to the limitation of input for the student to generate ideas in answering questions (Nadzeri Isa, 2001). This is because students are not helped by the structured scheme and systematic digital-based technology in the examination system (Hashim Othman, 2003). The other cause is the absence of wider access that refers to a virtual examination (Adenan Ayob & Partners, 2010). The significant impact of the limitations inherent the student's ability to answering questions easily and systematic (Suhaimi Yunus, 2009).

In several studies on the use of multimedia in examination can help student to structuring ideas for concrete answers (Nadzeri Isa, 2001). With the help of the digital-based examination, the students have been exposed to the material through a vast virtual reference when thinking of an answer. Students are also open opportunities to create a schematic of the answers given.

From new oriented innovation in virtual examination, Suhaimi Yunus (2009) also said that students are able to get the right answer and the right reasoning. According to him, student can think of the answers correctly and consistently. Thus, this study attempts to examine the effects of digital-based examination towards the achievement of Malay for standard five students.

3. OBJECTIVE OF THE STUDY

Three objectives were formulated in this study. The general objective of this study was to investigate the effect of digital-based examination of student achievement in Malay. The specific objectives of this study were to:

  i. Identify the mean scores of pre and post-test for the group.

  ii. Identify whether there are significant differences in the pre-test and post-test.

4. RESEARCH QUESTION

The research questions are formulated in accordance with the objectives above. The research questions are as follows:

  i. What are the mean scores of pre and post-test for the group?

  ii. Is there a significant difference between pre-test and post-test based on digital examination?

5. OPERATIONAL DEFINITION

This study focuses on student achievement in digital-based examination in the pre- and post-test scores. The digital examination unites all multimedia elements, that is text, graphics, and audio to measure student achievement in Malay Language.

Therefore, the achievement in this study is operationalized in the form of scores. In this study, the pre-test was conducted based on conventional examinations. The post-test was carried out after the students are exposed to digital-based examination. Comparison between pre and post-test score was identified.

6. LITERATURE RIVIEW

6.1 Testing and Evaluation Curriculum

Curriculum in the 21st century drawn up by the Ministry of Education is important to highlight the country's education landscape of modernity. Students who had entered primary school in 2000 have begun to face the virtual world in 2020.

What is the method of computer-based examinations in information technology to be used and practiced? There is confidence that in 2020, the basis of an assessment in the information technology will become the new norm in the community of teachers and students (Adenan Ayob et. al, 2010). Therefore, student effort to achieve success in their studies by applying a technological-based examination is the best way to support a wide diffusion of knowledge.

As a result of advances in information technology and communication-based on the existence of smart

schools, responsible authorities have to reconsider the appropriateness of an examination methods to be practiced, especially for the Malay Language as a core subject in primary and secondary schools. These developments have also forced the curriculum to examine a method of examination practiced in the classroom.

Malay Language is a subject that is considered difficult by most students. They consider that to obtain the best scores requires knowledge and skills in answering questions. This is because in the examination, there are some specification guidelines that practiced by ateacher (Adenan Ayob & Khairuddin Mohamad, 2012).

6.2. Previous Studies

Computers are one of the leading technology-based tools. The ability to use computer-based tests or examinations in information technology in teaching is associated with digital and virtual functions (Noor Azliza & Lilia, 2002). Suitability of use of a computer-based tests or examinations in information technology also can encourage student's thinking in answering any questions.

Computers help teachers to improve student achievement, either in terms of a test or examination. Another goal is to reduce the burden of teachers in evaluation practiced, and enabling assessment systematically to take place in line with the aspirations of the curriculum (Adenan Ayob & Khairuddin Mohamad, 2012).

Nadzeri Isa (2001) conducted a study on the impact of digital graphics-based tests of student achievement in writing. Nadzeri Isa explains that the digital test-based on graphic design suited to help student's revision on any question. This method is considered to emphasize the focussing towards the questions.

Yarbrough (2001) showed the student achievement in digital vocabulary-based virtual testing. In his study, a group of students who were exposed that test can manage to think brilliantly in answering the questions, compared to the group of students doing conventional test.

Mayer (2003) found during the assessment process in conducting students' examination scripts, there's new experience for teachers to become a critical appraisal in detecting the strengths and weaknesses of students. Parveen and Rajesh (2011) also conducted a study on language tests based on multimedia for standard two students. The results of their study showed that the students were able to intensify answered questions freely. Student who has paid attention can focus on answering the questions. It also shows that the academic changes have occurred within a short period.

7. METHODOLOGY

Quasi-experimental method was used in this study. This method is based on the quantitative design. Quasi-experimental method was used in this study because the group of students was determined by the school or group intact.

The samples were selected based on four criteria. The first criterion of selection based on the same stream, national schools. The next criterion of selection is in the average age.

7.1. Research Instrument

7.1.1. Pre-Test and Post-Test

Pre and post-test is the instrument used in this study to review student achievement respectively, before and after exposure to digital-based exam. A Malay teacher was appointed by the researchers as a panel for marking papers. Panel also determines the design of the item, quantity, theme, marks and levels for every test. For this study, the formulation of the question items referred to the syllabus.

7.2. Data Analysis

The analysis of quantitative data in this study is guided from the research questions. Analysis was performed on descriptive and inferential data by SPSS Version 20. Inferential data was analysed based Paired Sample T Test.

8. FINDING

8.1. Respondent Demographics

The total respondents are 60 students. The number of students is 30; 20 female students and 10 male students.

8.2. What are the mean scores of pre and post-test for the group of students?

Mean scores of pre and post-test were identified. The mean score and standard deviation are shown in Table 1.

Table 1. Mean score and standard deviation (SD) of pre and post-test.

	(n=30)	
Test		
	Mean	**SD**
Pre	51.80	8.03
Post	78.07	5.51

In Table 1, the pre-test score of group was 51.80 (SD = 8:03). The post-test scores were 78.07 (SD = 5.51).

8.3. Is there are significant difference in pre-test and post-test for the group?

The researchers attempted to explore whether there are significant differences between pre and post-test. Independent Samples T Test was used for data inferential analysis. Table 2 shows the difference.

Table 2. Differences between mean scores of pre and post-test for the group.

	(n=30)			
Test	**Min**	**SD**	**t**	**Sig.**
Pre	51.80	8.03	-1.13	0.00**
Post	78.07	5.51		

**p < .05

Table 2 above shows the pre-test mean score of 51.80 (SD = 8.03). For the post-test were 78.07 (SD = 5.51). The results found that there are significant differences between pre and post-test. The tests showed that the t (29) = -1.13, p <0.05.

9. DISCUSSION

9.1. Difference in Score Mean

The results showed that there were significant differences in the mean scores of post-test. Results based on the analysis of data through Paired Sample T Test shows significant differences in pre and post-test.

The digital-based examination system proved to help students to improve achievement in Malay. This finding can be attributed to the advantages of digital-based examination system. Among them, the digital-based examination has advantages in multimedia display online accessibility and dissemination of information globally. In another example, with the ease of online access, students are able to gain access to build mind structure (Parveen & Rajesh, 2011).

The findings also are consistent with Piaget's theory. Student achievement increases when the examination is systematic in nature. Achievement increases when students have the opportunity to gain access through the stimulation of the interactive-based examination (Adenan Ayob et. al, 2010).

Results of this study also support Noor Azliza and Lilia opinion (2002) that revealed computer-based examinations and information technology has the capability of providing virtual environments, interactive, and has the potential to stimulate creative and critical thinking for students, thus earning achievements.

According to Mayer (2003), there are two factors that the use of computer-based testing in information technology is considered as a means of encouraging student's ability to answering questions. The first factor is the existence of competitiveness in thinking. The second factor is to encourage students to interact and communicate with the outside world. This is because the use of a computer-based testing in information technology can help students to apply the structure of answering that based on digital resources and virtual. In reality, students are able to exploit the resources to suit the requirements of the syllabus (Parveen & Rajesh, 2011).

Student achievement was increased after using a computer-based examination in information technology is also closely related to the practical and systematic testing tools (Adenan Ayob et. al, 2010). This facility can shape the skills of students to absorb a broad response that based on multimedia elements (Parveen & Rajesh, 2011).

Adenan Ayob et. al (2010) argues that the virtual tests and examinations reflected better thinking for student to answer questions. According to them, the students easily understand the concept and meaning of items with intuitive process when exposed to an interactive tests and examinations.

10. IMPLICATIONS AND RECOMMENDATIONS

Based on the above discussion, several proposals are identified. This study found that implementation of the test or examination is effective in terms of student achievement. The benefits can contribute to the nurturing of students' ability in Malay language.

Therefore, the ministry should study the need to equip classrooms with computers and information technology infrastructure. The purpose of language laboratories equipped with computer equipment, software and the Internet is to provide facilities for students to be able to benefit from the current computer-based learning and information technology. Infrastructure equipment is also very important to ensure that students are always interested in the lessons and examination. For the implication, the digital-based examination is very useful to students in their studies. This step is capable of creating diverse forms of examination-oriented innovation and creativity.

11. CONCLUSION

In order to expand the method of examination in the classroom, teachers' expertise in the field of computer and information technology is essential. With this in mind, the ministry should provide the opportunity for teachers to enhance their knowledge in the field of computer and information technology through intensive courses.

12. ACKNOWLEDGEMENT

REFERENCE LIST

Abdullah Hassan (2006). *Morphology*. Kuala Lumpur: PTS Publications.

Abdul Rasid Jamian & Zulkafli Abu Zarin (2008). Ability of reading and writing skills Malay primary school pupils in rural areas. *Working Paper of the National Education Convention.Sultan Idris Education University*. 2 to 4 June 2008.

Adenan Ayob & Khairuddin Mohamad (2012). *Methods of teaching Malay*. Oxford Fajar: Shah Alam.

Adenan Ayob et. al (2010). *Multimedia in teaching Malay*. Emeritus Publications: Tanjung Malim.

Curriculum Development Division (2008). *Syllabus Malay Primary School*. Malaysian Education Ministry.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis for field settings*. Chicago, IL: Road McNally.

D. N. Yarbrough (2001). A Comparative Analysis of Student Satisfaction and Learning in a Computerassisted Environment Versus a Lecture Environment, *Journal on Excellence in College Teaching,* 12, 129-147.

Faridah Serajul Haq, Nooreiny Maarof & Raja Mohd Fauzi Raja Musa (2001). Narrative Writing Problems in

Middle School Students. *Journal of Education*, 27.

Hashim Othman (2003). *Writing skills: communicative perspective*. Kuala Lumpur: Dewan Bahasa and Pustaka.

Mayer, R. E. (2003). The Promise of multimedia learning: Using the Same Instructional Design Methods Across Different Media. *Learning and Instruction*, 13, pp. 125-139.

Nadzeri Isa (2001). Use of Stimulus Effect on Student Essay Writing Performance Level Lower Secondary. *Master of Science project.Faculty of Educational Studies, Universiti Putra Malaysia, Serdang*.

Noor Azliza & Lilia (2002). The effectiveness of the Design and Multimedia-Based Learning Approach Constructivism for Science. *Journal of Technology* 36 (E), 19-38.

Parveen, J. J., & Rajesh, V. (2011). Multimedia in Bahasa Inggeris Language Teaching: An Empirical Study. *Journal of Technology for ELT*, 1 (4).

Suhaimi Yunus (2009). Learning Problems in Writing Malay among Aboriginal students.*Master of Science project. Faculty of Educational Studies, Universiti Putra Malaysia, Serdang*.