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The Validation and Development of Electronic Language Test

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Abstract: The enormous velocity of development and advancement in Information Communication Technology (ICT) to date has remarkably transformed the educational system which incorporates aspects of teaching, knowledge delivery and training. Language testing or measurement at the present time is employing conventional method to measure the academic performance of the students. With the advent of ICT, it has initiated the new innovative approach of assessing student's performance. The objective of this study is to investigate the effectiveness of online and conventional mode of Malaysian English Competency Test (MECT) among undergraduates of Universiti Kebangsaan Malaysia (UKM), focusing on reading test. The test is intended to test four components of English language; listening, reading, writing and speaking skills. This quantitative research involved a total of 43 students and was randomly divided into two groups. These groups were tested on paper test of Malaysian English Competency Test (MECT) and Electronic Malaysian English Competency Test (E-MECT). Apart from the tests, the respondents were also given a set of questionnaire to obtain the data on their computer literacy level, online reading test, and also knowledge and experience of using E-MECT online test. The results showed that there were no marked differences in terms of student's performance even though their marks were higher in the online version. Other features such as user friendliness, interface design, interactivity and time management play important role in the success of online test. Recommendations to administer and adapt the online test are put forth at the end of the report. It could be concluded that the study has significant implications for not only the students, but also the teachers and

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programmer as well. Additionally, this study helps both the students and teachers in taking online language testing in a conducive and convenient way. In fact, this could also sharpen the students' computer literacy in using the computer.

Key words: Language; Information Communication Technology; Online test, Conventional test; Reading skill

1. INTRODUCTION

The emergence of Information and Communication Technology (ICT) in education has transformed and revolutionized the education system extensively from the conventional method of teaching to the highly-status and up-to-date community in Malaysia. With the advent of computer technology that comes with the great features namely web-based technology which derived from Computer Assisted Language Learning (CALL), multiple tasks such as testing can be done via online platform. The initiation of multimedia and information and communication technology (ICT) has brought a radical change in how information can be presented and communicated, and more importantly, in the capability of the learner to record, access and retrieve it (Shahrul Ridzuan et. al., 2009).

Towndrow and Vallance (2002) pointed out that the role of technology in shaping educational policy is increasing in the use of the Internet and the World Wide Web as well. Up to date, educationalists or the academicians have been trying to turn the computer into a tool as a platform for testing purposes. Godwin-Jones (2001) identified that computers have been used in language assessment since at least 1960s. The project which pioneered by the University of Illinois namely "The PLATO project" led the way of the use of networked computers for language practice and testing. Though, it has stopped from evolving until the beginning of the period of personal computer firstly introduced.

Supyan (2004) listed down most popular authoring software that can be found in early, mid and end of 90's which primarily based on DOS system, for instance, Pinpoint, Vocab, Wordstore, Storyboard, Gapmaster, Choicemaster, Testmaster, CoMIL, Dasher, CALIS and Gapkit. As the technology of the computer evolved by mid-90's, there were also updated version of authoring software such as LIBRA, WinCALIS, CoMIL, RealEnglish, Course Builder, Multimedia Testmaster and Teleste Partner Tools. Apart from the listed software, WinCALIS is more practical and reliable in terms of user-friendly, applications and the important thing is integration. It offers a wide range of pre-designed templates and comes with the features of question types, feedback types, randomization, and data record system. However, by the end of 90s, one authoring software was produced and named as HotPotatoes. This HotPotatoes software is a web-based authoring system that offers interactivity in the exercises, pre-designed templates; MCQs, Cloze, Drag-n-drop, Crossword Puzzles, and others as well. HotPotatoes allows integration of animations, sounds, audio, videos and programming languages, for instance, Html, Java script and others.

Mohamed Ariff et. al. (2006) claimed that an online testing is a way of testing the performance or knowledge of a person with a set of questions through the interface of a computer. For instance, a set of desktop computer is used to test the test taker about something that he or she has learnt. On the other hand, the conventional way of testing employs pen and paper based, where teachers or assessor must mark the scripts thoroughly according to the standard answer scheme provided. This will give a lot of hassle and burden to teachers to mark the scripts. On the other hand, the method of conducting an online testing is primarily utilizing the internet, where there will be sections on instructions, questions, and answers, duration and other as well that will be uploaded to the server. For students or test takers, they are able to take the online test no matter where they are, as long as they can access the Internet with standard requirements of the system. One major feature of online testing is the immediate results where the system or the server will compute and deliver the results simultaneously to the students. This can be supported by Fulcher (2000), in which he says that computers were utilized not only for automatic

scoring purposes but also to administer the overall test by providing features such as analyzing and reporting the statistical data to the test takers or students. This can't be done in conventional or traditional way of testing because the results are delayed.

According to Yasuyo Sawaki (2001), the computerized online reading materials nowadays are becoming popular and eye-catching for all, for example, researchers, teachers, students, language learners, policy makers and so forth. The impacts have been seen in the language assessment where computerized testing, such as Computer-Based Tests (CBT) and Computer Adaptive Tests (CAT) were applied and constructed in online language assessment. Despite the consequences of online testing platform is very much needed by all, the process of constructing and developing the framework is indeed in the first stages. Hence, the features of validity, reliability, practicality of the online test should be taken into consideration with regard to the online testing platform. The issue which arises from the implementation of online language testing is the students' performance by using conventional paper-and-pencil tests; to what extent the usage of paper-and-pencil will be used as opposed to online language testing? On the other hand, Chapelle (2001) said that computers are used not only for management purposes but have also become central in the test taking processes.

Another research conducted by Chalhoub-Deville (1999), they pointed out the scarcity and insufficiency of comparability research in an online language testing and the importance of conducting comparability studies to detect any potential test-delivery-medium effect and students' performances when a conventional test is to be converted to a computerized test. This is to prove and provides evidence that reading from a computer screen is the same as reading on paper for L2 readers.

A research done by Roever (2001) has highlighted the students' or language learner's interest in participating with the web-based language testing. In addition, Douglas (2000) in his recent book also considered the application of web-based testing in language testing. A number of online tests for various purposes are available and accessible online at Glenn Fulcher's Resources in Language Testing Web site. He also tried to advance the Web-based language testing movement by outlining some of the fundamental theoretical and practical questions associated with its development. Furthermore, he pointed out that web-based language testing shares many characteristics of more traditional computer-based tests (CBT).

Dean (1990) pinpointed that computer as a testing medium attracted the attention of psychometricians because they allow the application of item response theory for delivering adaptive tests and often identify a test taker's ability level faster and with greater precision than paper-and-pencil tests. He also found that CBT can be offered at any time whereas conventional mode of testing like mass paper-and-pencil will have to undergo several stages before it can be distributed traditionally. Moreover, CBT can provide fast-feedback on the test results immediately upon the completion of the test while conventional mode of test will be delayed feedback.

Based on all of the literature review described, a prototype of language test on the reading skill was developed. However, there are still some issues to be dealt with computer-technical technology such as security, technical peripherals, technical capabilities, test features and designs, test interpretations and so on and so forth that needs to be addressed. On the contrary, the benefits and advantages of online language testing platform should overcome any of its drawbacks, as it can be faster, practical, more efficient, more reliable, and less costly than conventional mode of testing. By analyzing the students' performance in online and conventional mode of testing, insights on the students performance on both can be discussed further. As the online test will be more popular and could one day be the mode of testing, it is imperative to investigate whether the students' performance declined or enhanced. The findings will help the test developer to develop more effective and reliable online test which is valid and measure what it is supposed to measure.

2. METHODOLOGY

This research employed a quantitative research design where a set of questionnaire was used to investigate the effectiveness of paper and pencil test of MECT and online language testing platform of E-MECT. The questionnaires were given and distributed evenly to 43 final year students of School of Language Studies and Linguistics. Students were asked to fill in the questionnaires after taking both conventional and online version of E-MECT to compare whether the grades are significantly different. As in the first section of the questionnaire, section A consists of background of the respondent which covers all the personal information about the respondent, section B informs the researcher about the respondents' computer literacy level, section C asks about the experience on Online Reading Test. Section D, on the other hand is about Knowledge and Experience of an Online Test. Section E is an open-ended questions about Problems Encountered in both versions of MECT and E-MECT.

The research employed comparative testing procedure design. Before the online mode can be used, the paper test of MECT was converted and programmed as an online mode which is E-MECT. The digitization of conventional MECT to E-MECT was successfully completed in 1 month. The process of validation was done to ensure E-MECT is ready to be used. The first testing session involved 43 students who were asked to take the paper and pencil test of MECT. Two weeks after that, the same group of 43 students were tested again to sit for the same test which is E-MECT. Next, questionnaire was used to collect data from the same group of students. The respondents were requested to complete the questionnaire and to send it back to the researcher.

Upon receiving the completed questionnaires, the researcher collected and analyzed the questionnaire items for each section. The data were collected and analyzed using the SPSS version 16. The results from the analysis are described in percentages and mean scores and presented in table format. The findings indicate the students' performance and the importance of conventional and online mode of MECT and E-MECT respectively.

3. RESULTS AND DISCUSSION

3.1 Marks of Paper Test of MECT

Table 1 shows the respondents' results on conventional mode of reading test of MECT. The lowest marks is 37 with the frequency of one (2.3%) and the highest marks is 77 with the frequency of three (7%). A total of eight respondents achieved 63 marks with the percentage of 18.6%. From the statistics, most of the respondents achieved average marks only, that is, 63 marks, 18.6% (n=8). The average value for this conventional mode of reading test of MECT is 56%.

3.2 Marks of an Online Reading Test of E-MECT

Table 2 shows the respondents' results on Online Reading Test of E-MECT. The lowest marks is 43 with the frequency of two (4.7%) and the highest marks is 94 with the frequency of two (4.7%). Six respondents achieved 60 marks with the percentage of 14%. From the statistics, most of the respondents achieved average marks, that is, 60 marks, 14% (n=6). The average value for this Online Reading Test of E-MECT is 65%.

Table 1: Marks of MECT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	37	1	2.3	2.3	2.3
	43	2	4.7	4.7	7.0
	49	1	2.3	2.3	9.3

To be continued …

Continued

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	51	2	4.7	4.7	14.0
	54	3	7.0	7.0	20.9
	57	1	2.3	2.3	23.3
	60	7	16.3	16.3	39.5
	61	1	2.3	2.3	41.9
	62	1	2.3	2.3	44.2
	63	8	18.6	18.6	62.8
	66	1	2.3	2.3	65.1
	69	4	9.3	9.3	74.4
	71	4	9.3	9.3	83.7
	74	3	7.0	7.0	90.7
	75	1	2.3	2.3	93.0
	77	3	7.0	7.0	100.0
	Total	43	100.0	100.0	

Table 2: Marks of an Online Reading Test of E-MECT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	43	2	4.7	4.7	4.7
	46	1	2.3	2.3	7.0
	49	1	2.3	2.3	9.3
	51	5	11.6	11.6	20.9
	54	1	2.3	2.3	23.3
	57	2	4.7	4.7	27.9
	60	6	14.0	14.0	41.9
	63	1	2.3	2.3	44.2
	66	4	9.3	9.3	53.5
	69	2	4.7	4.7	58.1
	71	4	9.3	9.3	67.4
	73	2	4.7	4.7	72.1
	74	2	4.7	4.7	76.7
	77	1	2.3	2.3	79.1
	80	2	4.7	4.7	83.7
	83	3	7.0	7.0	90.7
	91	2	4.7	4.7	95.3
	94	2	4.7	4.7	100.0
	Total	43	100.0	100.0	

From the extracted data, a brief summary can be made. Tables 1and 2 show the data of students' performance in both conventional and online mode of MECT and E-MECT. The results showed that the online test marks were higher compared to on paper test. This could be due to the reason that online test is more interactive, more useful, user friendliness, and their pace in examination can be monitored. This could also be due to the previous experience of the students who majority have been exposed and experienced online testing mode before, for example, driving test. As online test allows the respondents

to get immediate feedback, the interactivity of the online testing mode could also be another contributive factor.

4. CONCLUSION

It could be concluded that the study has significant implications for not only the students, but also the teachers and programmer as well. This is because it has revealed students' performance in both environments that students greatly performed in an online mode of testing. Furthermore, it helps students and teachers in a way that students are able to take the test in a comfortable and convenient way as opposed to pen and paper test. On the other hand, teachers are able to monitor their students' performance from the online test because online test provides immediate results in which the marking system will be computed by the computer, means that no burden and hassle to mark the students' scripts.

Further recommendations and suggestions toward this matter are computer specification, examination center/ testing center/ incubation center, types of questions, post examination, security features, efficiency, convenience, usability, computer familiarity, delivery failures and speediness, loading time and timer, and last but not least is server failure and browser incompatibility. Thus, there is an urgent need to continue this research on online testing; comparing students' performance in all components; Listening, Speaking and Writing which would cost more than this research. Furthermore, E-MECT should also develop other skills to validate e-Listening, e-Writing and e-Speaking.

It is also to stress that online language testing is very prominent nowadays, and both students and teachers should be ready enough to challenge the upcoming technology. Through this study and its findings, specific resolution to solve the minimal problem of the online testing issues could be minimized. Additionally, this study helps both the students and teachers in taking online language testing in a conducive and convenient way. In fact, this could also sharpen the students' computer literacy in using the computer.

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