Studies on Use of ICT in English Language Testing

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Abstract

As the language learning landscape changes with the increasing use of Information and Communication Technology, exploratory studies were carried out on English Language assessment in written and oral communications with a view to tap the affordances of technology. In a study involving Grade 9 students, a writing test was delivered via an e-platform, setting tasks that included electronic form-filling in authentic contexts with stimulus materials in the form of a notice and a simulated website. As for assessing oral communication, studies involving students in Grade 9 and 10 were carried out. The test comprised an on-screen passage for reading aloud and a short video clip which served as a stimulus for discussion. This paper presents the key considerations made in developing these tests as well as students' views gathered from surveys and small group discussions.

Keywords: English language testing; Information and Communication Technology; writing test; oral assessment

Introduction

As the use of Information and Communication Technology (ICT) becomes increasingly prevalent worldwide, the landscape for language use and learning is changing, underscoring the importance of communicating effectively via different media. To better meet the changing communication needs of the present and future generations of Singaporeans, the 2010 English Language (EL) Syllabus for teaching was developed with an overt focus on 21st century skills that include "the development of information, media and visual literacy skills in the teaching of listening, reading, viewing, speaking, writing and representing" (p.9). Schools will enrich students' learning experiences through the use of a variety of print and non-print resources, including digital resources such as web-based texts and analogue resources such as TV broadcasts. These developments are made possible through a strategic initiative of the Ministry of Education (MOE), Singapore, known as the Masterplan for ICT in Education.

Implemented in phases since 1997,[1] the Masterplan laid the foundation for schools to harness ICT, providing basic ICT infrastructure and equipping teachers with competencies to enable

[1] http://www.moe.gov.sg/media/speeches/1997/280497.htm

them to integrate ICT into the curriculum and pedagogy. In the current phase of implementation, the Masterplan seeks "to enrich and transform the learning environments of [Singapore] students and equip them with the critical competencies and dispositions to succeed in a knowledge economy". [2]

In preparation for such developments in the teaching and learning environment, exploratory studies have been carried out on EL assessments in written and oral communications that would tap the affordances of technology. Guided by the principle of value-add in introducing ICT into assessment, the studies focused on areas where ICT enables the assessment of skills in ways that are not possible with traditional pen-and-paper tests, or where the use of ICT brings about potential benefits in enhancing validity of the assessments by simulating conditions in real-world performance tasks. This paper reports on two areas of studies – (I) the delivery of a writing test via an e-platform, and (II) the use of ICT in oral assessment. The key considerations made in developing these tests as well as students' views gathered from surveys and small group discussions will be presented and discussed.

(I) Study on delivering a writing test via an e-platform

A preliminary trial study was conducted in 2012 to investigate the use of an e-platform to deliver a writing test. This was a collaborative effort with the University of Cambridge International Examinations (CIE) to jointly develop the electronic test version. The test bundles were delivered to participating schools using a test delivery platform developed by CIE.

The format of the writing test was based on the General Certificate of Education (GCE) Normal (Technical) Level examination syllabus. It comprised two sections. In Section A, students would complete a form-filling task and a related short writing task in response to a given context. For example, in the practice test which was based on the specimen paper for the GCE Normal (Technical)-Level EL syllabus, students were shown a job advertisement requiring them to complete a job application form and write a letter in support of their application. Section B consisted of a longer writing task based on a given context which involved viewing a stimulus text such as a webpage on a particular topic.

The key research objectives included gathering students' feedback to gauge their receptivity to the use of the e-platform as well as gathering input for future trial designs. A sample involving about 130 Grade 9 students in the Normal (Technical) course from four secondary schools participated in the study. The sample was carefully selected to ensure representation by distribution of gender, ethnic group and English Language ability. The writing test was developed first as a paper-based test and its contents mapped onto an electronic form. In

[2] http://ictconnection.moe.edu.sg/masterplan-3

each school, the students took the computer-based test in an examination setting in the computer laboratory. About a week ahead of the trial, the students were given the opportunity to familiarise themselves with the e-platform through a practice test. The duration of the computer-based test was the same as that allowed for an equivalent paper-based test. At the end of the test, the students completed an online questionnaire that captured their views on the use of computer for the writing test.

Key Considerations

The conceptualisation and development of the computer-based version of the writing test was based on careful considerations. Taking a writing test on computer has not been implemented for most subjects, thus students' typing speed was a key consideration at the initial stage. The study was conducted on students in the Normal (Technical) course as all of them take Computer Applications as a subject in school. Therefore they would have prior learning experience with computer and keyboarding skills to handle the requirements of a computer-based writing test.

In designing the test interface, one key consideration was readability. It was important that students were able to read the information off the computer screen easily. On paper, students are guided through the instructions, task requirements and stimulus materials before they produce their responses as the information is presented in a linear manner. In the computer-based test, the information was broken up into segments and organised under multiple tabs. Students were guided through the different segments of the test indicated clearly in the navigational tabs.

Another consideration was ease of reference as students would need to refer to the stimulus material and the task details while they attempted the form-filling and writing tasks. Since the English convention is to read and write from left to right, the reference material was made available on the left-hand side of the screenpage under multiple tabs, and students would fill in their responses on the right panel on the screenpage. They could toggle between the tabs to refer to the stimulus materials as well as the details of the tasks.

Test authenticity was a key consideration in the test design. Bachman and Palmer (1996:23) defined test authenticity as "the degree of correspondence of the characteristics of a given language test to the features of a TLU (target language use) task". According to Weir (2005:20), "the greater the fit, the more confidence we may have in relating test performance to likely real-life behaviour …" While functional tasks set in real-world contexts have been a key feature of the GCE N(T)-Level EL examinations, delivering the Writing paper via an e-platform would approximate the real-life conditions under which the form-filling and writing tasks take place. Much attention was paid to create a real-world 'look and feel' through the layout and presentation of the tasks and stimulus materials. In form-filling, the items that required students to delete options which were not applicable were replaced by a drop-down list or multiple-choice options that students would have to select by clicking on the

appropriate option. As for the stimulus materials, the information was organised into sections with a simple navigation system consisting of tabs at the bottom of the screen. Appropriate graphics and photographs were added to illustrate key concepts and complement the design of the simulated website.

Students' Views

Students' views on the use of computer for the writing test were gathered on two aspects:

(i) the features of the e-platform; and
(ii) the accessibility of information within the e-platform.

In general, the majority of students provided positive feedback on the use of computer for the writing test. Almost all of them found the word count and timer tools provided onscreen useful. For those conscious of meeting the suggested word length requirement, the word count provided instant information. About 70% of them used the copy and paste function to produce their responses. The majority of them commented that they preferred typing to writing down their responses. They felt that it was faster and easier to type their responses as it allowed them to do editing easily and it was not physically tiring as in the case of having to write down their responses on paper. Some noted the additional advantage of typing in that it provided a legible piece which they probably could not manage with handwritten responses. One feature that the students would like to see included was a spell check function. However, this being a language test where spelling is integral to the assessment objectives, the provision of a spell check function will invalidate the assessment.

In the writing test, the students were required to read and make reference to the information provided in the stimulus materials to produce their responses. Almost all of them found that it was easy to navigate between sections of the writing test on the e-platform. Similar proportion agreed that the layout of the texts was clear and helpful. Almost all of them reported that it was easy to read the information on the e-platform and to make reference to it.

Overall, most of the students (96%) reported that they were comfortable taking the writing test on computer. Over 70% expressed preference to take the writing test on computer to taking it on paper. For those who preferred the latter, reasons cited include concerns about technical problems that may arise in the process of taking the writing test on computer, and preference for annotating and making notes on the paper.

(II) Studies on use of ICT in oral assessment

Exploratory studies had been carried out on the use of ICT in EL oral assessment since 2009. Based on the test format of the GCE EL oral communication paper, the test consisted of two components: Reading Aloud and Spoken Interaction. In the former, students read aloud a short text. In the latter, students engaged the oral examiners in a discussion on topics

stemming from a stimulus which was thematically linked to the Reading Aloud text. The studies centred on two aspects:

(i) the delivery of the Reading Aloud text on computer; and
(ii) the use of video stimulus in Spoken Interaction.

In a paper presented at the 2010 International Association for Educational Assessment Conference, Lenden-Hitchcock and Syed Mohamed reported on one of the studies which focused on the Reading Aloud component. Their study suggests that the mode of delivery (paper or computer) has no significant impact on student performance in the Reading Aloud component of the oral communication test. [3]

This paper will present the main considerations in using ICT in the EL oral test, with a focus on the use of video stimulus in Spoken Interaction. It will also discuss key findings related to students' views on the use of video stimulus. These are based on collective data from studies conducted in 2011 and 2012, involving over 200 Grade 9 and 10 students in the Normal (Technical) course from nine secondary schools. The oral test was delivered on laptops but assessed live by pairs of oral examiners. Each student was given 10 minutes of preparation before the test to study the passage and watch the video clip. The oral examiners comprised experienced school teachers and English Language examiners. It was mandatory for all oral examiners to be taken through the standardisation procedures before each test.

Key Considerations

The Spoken Interaction component assesses students on their ability to give their personal responses and develop their ideas, to express themselves clearly with appropriate vocabulary and structures, and to interact effectively with the examiners. As a stimulus, the video clip should elicit students' personal responses to allow assessing the relevant skills. The video clips were carefully selected with subject matters that were age-appropriate and accessible to students in Singapore. They included scenes taken from classroom or street settings which were closely linked to the students' realm of experience. Content with a cultural bias and potentially sensitive or controversial themes especially involving religion, race, or ethnicity were avoided.

Each video clip was less than a minute long with a brief synopsis to make clear the context. While listening and viewing were skills that students would need to complete the tasks, these were not assessed. The video clips contained minimal verbal text or speech. Verbal text, if present, occurred naturally as part of the background or ambient sounds. For example, the mutterings of spectators could be heard in a clip featuring a street performance. Comprehension of details of the verbal text was not necessary for students to understand the video clips. Students were explicitly told that they would not be tested on what they heard in

[3] While their paper discusses the results from the Normal (Academic) and Express courses, observations on those two courses apply equally to students in the Normal (Technical) course.

the video clip. The given prompts also did not ask for details of what was heard or viewed in the video clip.

Students' Views

Generally, in both studies conducted in 2011 and 2012, the students responded positively to the use of video stimulus. Based on the questionnaires, more than 90% of students agreed that the video was helpful as a lead up to the discussion. This finding was supported by students' responses gathered during the small group discussions. Some comments made by students were as follows:

- *The video helps prepare me on what I am going to say to examiners later.*
- *The video stimulus helped me anticipate the discussion topics during the preparation.*
- *The video helps generate ideas as it allows me to think more about what to say.*
- *The expressions of the audience [in the video clip] gave me some ideas on what to say during the discussion.*
- *The video stimulus was interesting and engaging.*

More than 80% of students agreed that they were able to give a personal response to the video. Several students reported that they could understand the video because of the presence of sound and moving images, which they can relate to in their daily lives.

It is interesting to note the views of some of the students who were not in favour of the use of video stimulus in the oral test. One student cited the reason that the test was "brand new to me, i'm not comfortable with it" (sic). The other reason cited was that the oral test had more distractions due to the multimedia elements (sound and movement) in the video clip. However, as mentioned above, some students viewed this element of the video differently. They felt that the sound, motion, and facial expressions would allow them to better understand the context of what was happening in the video.

In general, students (more than 80%) reported they felt comfortable using a computer to prepare for the test. More than 90% of students reported they knew what to do during each part of the preparation. Overall, about 70% of students expressed they preferred to use the computer to prepare for the test. Some reasons cited for the preferred use of computer included the ease and convenience of using the computer and students feeling more comfortable using the computer to prepare for the test.

Discussion

For both the writing test and the oral communication test, the majority of the students in the studies expressed a preference for the use of computer over the traditional pen-and-paper mode. Many of them cited reasons related to the benefits of computer use. In the study on delivering a writing test via an e-platform, a few students commented positively on the colourful presentation and the bulk of the comments were on the ease of writing and editing brought about by word processing. While the mere presence of computer features and tools may not necessarily produce better writing, it has been suggested that the use of word processors eliminates the drudgery of recopying and lowers student resistance to revising (Collier, 1983). A study by Owston et al. (1992) found higher ratings of computer-written papers and considered students' experience in writing with computers and the computer's facilitative environment as mediating factors. The use of computer in testing could have a positive backwash effect by supporting the teaching of writing and revision strategies.

As for the studies on the use of ICT in oral communication testing, students generally found the video clip useful as a stimulus and several commented that the presence of sound and moving images aided their understanding of the stimulus. Besides adding to the interest value of the test, the use of video stimuli could have the effect of activating students' schemata and easing them into the examination.

Across the studies, the students were evidently familiar and at ease with the use of computer. As mentioned earlier, all students in the Normal (Technical) course take Computer Applications as a subject. According to the profile of the student respondents, many of them owned a computer at home. About 60% reported frequent use of the computer on a weekly or daily basis and as might be expected, the computer was more commonly used for social networking and gaming than for school work. The students' computer experience could have been instrumental in their developing a positive attitude and receptivity towards the use of ICT in assessment.

While the oral test required simple computer skills (e.g. dragging the pointer along the progress bar to play a specific part of the video), the writing test required students to interact more with the computer interface and type in their responses. It was noted that there has been prevalent use of computer for word processing in students' school assignments, and this study has shown that the participating students could complete the tasks within the time limit. In addition, the majority of students in the study opined that it was faster for them to produce their responses on the e-platform than to write on paper. Furthermore, typing speed is not a controllable factor, just like handwriting speed. Hence typing speed is not an issue for concern in implementing the computer-based version of the writing test for students in the Normal (Technical) course.

While the majority of the students were supportive of the use of computer in assessment, about 10% of the student respondents across the studies preferred the pen-and-paper mode. Based on the questionnaires and small group discussions, there appeared to be an innate resistance to change and anxiety about possible technical problems such as computer breakdowns. This highlights the importance of ensuring system-robustness to support the delivery, administration and assessment of the tests. It also highlights the need to provide lead time for schools to manage their concerns and ensure their readiness for the introduction of ICT into assessment. Teachers should be familiar and comfortable with using technology as tools of instruction and assessment. Regular exposure to the use of ICT during lessons and school activities would enhance teachers' and students' familiarity and confidence in the use of computer. Most students who participated in the writing test study reported that the practice test was helpful in enabling them to know how to do the actual test. This feedback reinforced the good practice of providing students with sufficient practice to handle a new mode of assessment before the actual implementation.

Conclusion

Generally, the students responded positively to the use of ICT in English Language testing, pointing out the benefits brought about by technology. While a minority of the respondents were naturally resistant to change and expressed some reservations concerning the use of computer, training and practice will help schools and students gain familiarity with and confidence in the use of ICT in assessment. In conclusion, the exploratory studies have yielded positive experience and feedback which suggest that the use of ICT could better engage students with rich stimuli and greater test authenticity.

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