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DEVELOPMENT OF WEB BROWSING TECHNIQUES TO CAPTURE RESPONSES IN THE CONTEXT OF ENGLISH LANGUAGE SKILLS ASSESSMENT

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Development of Web Browsing Techniques to Capture Responses in the Context of English Language Skills Assessment

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Abstract

The assessment of speaking skills in English as a foreign language presents pedagogical and logistical challenges, which are being exacerbated by the increasing demand for British qualifications from students based overseas.

To address these challenges, and to reduce the time lapse between taking the test and issuing the results, we have developed an on-line version of a traditional high-stakes Speaking test, using Real Time Messaging Protocol (RTMP).

Introduction

According to figures provided by the British Council[1] English has an official or specialist status in at least 75 countries. It is spoken as a second language by 375 million people, as a foreign language by a further 750 million people and to 'some extent' by a quarter of the world population.

It is the official language of the European Central Bank, of the United Nations and of maritime communication and of international air traffic control

The process of globalisation[2] is increasing the dependence on English as the (primary) means of communication in business and industry. This is producing a concomitant increase in the number of people wishing to learn English[3] and to have their competence certified by means of qualifications.

This world-wide and increasing interest in communicating in English presents pedagogical and technical challenges for the assessment industry.

Pathways to Proficiency[4] produced sets of scales for the four language modes – listening, speaking, reading and writing. This paper will focus on the challenges related to assessing Speaking.

Speaking - The Pedagogical Challenges

The requirements for demonstration of competence in speaking the English language are demanding at even quite low levels. At the equivalent of Level 1 (Adult Literacy) (defined as B2 Vantage of the Common European Framework) an individual is required to be able to[5]

- *Give clear, systematically developed descriptions and presentations on a wide range of subjects …….expanding and supporting ideas with subsidiary points and examples.*

- *Participate actively in routine and non-routine formal discussion*

- *Contribute, account for and sustain his/her opinion, evaluate alternative proposals and make and respond to hypotheses.*

To develop an assessment against these criteria that will produce the necessary levels of validity and reliability is a challenge.

Some Awarding Bodies[6] assess Speaking skills through interviews with visiting assessors. This method has the merit of offering both face and construct validity, but is administratively difficult for centres and students. It is also time-consuming, expensive and unreliable. It is therefore not a suitable method for assessing large numbers.

In other contexts[7] speaking capability is assessed by means of face-to-face interviews that are recorded and then sent elsewhere to be marked. Whilst the use of traditional recording techniques (typically cassette tapes) overcomes some of the cost and administration problems associated with personal interviews, the method is still time-consuming and not particularly reliable.

In yet other contexts, Speaking is not assessed as a separate skill at all. Eckstein and Noah[8] (1993) point out that in neither China nor Japan is there any attempt to assess oral skills as a part of school level examinations in English. In both countries, multiple-choice is the predominant assessment format for the other components. Here the emphasis is on reliability, but at the expense of a valid assessment of speaking capability.

To meet the increasing demand from globalisation and at the same time present students with the opportunity of an appropriate assessment of their capabilities there needs to be some way of combining the advantages of the face-to-face personally conducted interview with the opportunities offered by new technologies for more efficient and more reliable assessment.

The key to this is the development of a secure, web-based system for the delivery of an authentic assessment, combined with the creation of a distributed on-line marking facility.

The Project

The project was to take an existing speaking test for an international high stakes English qualification[9], and remove the need for recording student responses on cassette tapes by using Real Time Messaging Protocols (RTMP) and streaming student answers.

The project also required the development of a distributed, on-line marking facility that allowed markers to access tests for marking from anywhere in the world, and which also included functions that would enhance the reliability of marking.

The Technical Solution

There were two principal challenges that needed to be overcome:

- The need for a reliable connection between the test delivery interface and the web application server;
- The security implications of the networks and firewalls at the centres running the tests.

Macromedia Flash components provide a development infrastructure that enables connections to remote services that are exposed by application server developers and web services. Macromedia Flash Remoting simplifies the application development process by providing us with a programming mode and runtime support for connecting the application directly to remote server objects

Using Macromedia Flash Remoting, we can easily connect ActionScript client logic directly to our remote services without writing any wrapper code, proxy code, or data marshalling code. Macromedia Flash Remoting exposes well-defined application APIs and services (whether implemented in C#, Java, or ColdFusion) transparently to Macromedia Flash as ActionScript APIs. Macromedia Flash Remoting also adds a rich debugging capability and a service browser between the Macromedia Flash client and the server, providing us with an optimized development experience in creating Rich Internet Applications using Macromedia Flash

Macromedia Flash Communication Server provides the same capabilities as Macromedia Flash Remoting except that the Flash Communication Server communicates with the application server instead of the Flash movie. The Flash movie communicates with the Flash Communication Server via the real-time RTMP (Real-Time Messaging Protocol) protocol for audio/video/messaging applications.

The ELSA Speaking Test uses the Macromedia Flash Communication Server for the streaming of candidate answers. By default this technology uses RTMP (Real-Time Messaging Protocol).One hurdle we had to overcome was

the security implications of networks and firewalls at the centres running the tests. It became apparent that not all of the centres had the same security and firewall settings enabled to allow successful connections, to overcome this we built an online diagnostic tool that centres use which provides statistical information on the available open ports required to allow successful RTMP traffic. Armed with this information we can assist the centres in making a valid data stream connection to and from the Flash Communication Server.

Evaluation

Technical

To date, the system has been successfully piloted in the Middle East and South America as well as Europe.

Technically, it works well, although experience has shown that it is necessary to engage in quite extensive dialogue with centres in advance to ensure that their infrastructure will provide a suitable testing environment.

Reliability

The project has identified a number of issues in relation to the marking of Speaking assessments. So far, the distributed marking system has been used with only a small number of examiners.

The main advantage has been a great reduction in the period of time taken to mark the tests and return the results. A turnaround time of five days (from date of test to time of return of results) is now being achieved regularly. This is proving to be of great benefit to centres and students who are using the test as a pre-course filter.

We have as yet insufficient evidence to comment on any effects on reliability in marking. Using the system, markers are able to compare extracts from student responses with each other and with exemplars. As they consider each question, a simple slider enables them to compare the level descriptors with the responses.

Feedback from markers has been positive, and we will carry out a more detailed evaluation once more markers are involved.

Student Experience

The evidence relating to the effects of screen-based testing on student achievement is mixed and appears to be context dependent. Comparisons of paper and computer based versions of psychological tests show equivalence[10] but other studies in educational contexts suggest different results[11].

Student feedback has been positive, with most reporting that they found the experience of taking a speaking test on-line less stressful than using a tape recorder.

As yet, there has been no opportunity to compare paper-based and on-screen results, although it is planned to do this once the volume of on-screen students increases.

Conclusion

The development of a secure web-based system for providing valid speaking tests looks likely to increase reliability. Future developments will look at further enhancing the authenticity of the assessments, and consider the implications for the inclusion of more realistic settings.

References

British Council at www.britishcouncil.org/english/engfaqs.htm

'Globalisation' is an imprecise term, covering many aspects of politics, economics and cultures. Its origins are complex, and probably not all that recent. It is currently used as a short hand way of describing the trends towards interdependence between countries encouraged by the rapid developments in information technology,

See, for example, the figures in the **Future of English***,* the report on the British Council's English 2000 project.

Pathways to Proficiency: The Alignment of Language Proficiency Scales for assessing competence in English Language, DfES, London, 2003

DfES (2003) **Pathways to Proficiency, The Alignment of Language Proficiency Scales for assessing competence in English Language,** DfES, London, 2003, Map 4, Speaking Scales, pg 40.

For example, the Assessment and Qualifications Alliance (AQA) and Jet Set and LCCI International Qualifications with SEEFIC.

GCSE and A level examinations, for example.

Eckstein, A., and Noah, H., (1993) **Secondary School Examinations**: **International Perspectives on Policy and Practice,** New Haven, Yale University Press

The project used the English Language Skills Assessment (ELSA) offered by LCCI International Qualifications. The assessment consists of four components, (Reading, Writing, Speaking and Listening) and covers levels A1-C2 of the Common European Framework. There are CBA and paper versions of all components. In traditional mode the Speaking test is recorded in the centre and tapes returned to the UK. These are then forwarded to examiners for marking.

McFarlane, A., (2003) Editorial. Assessment for the Digital Age, in **Assessment in Education,** Vol. 10 (3), pg 263

11. For example, Johnson, M., and Green, S., (2004) On-Line assessment: the impact of mode on student performance*,* paper presented to the **British Educational Research Association Annual Conference**, September 2004, Manchester