HOW DO THE RISKS OF A WEB-BASED CAA SYSTEM DIFFER FROM THOSE OF A CLOSED NETWORK SYSTEM?

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How do the risks of a web-based CAA system differ from those of a closed network system?

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Abstract

A number of models for PC-based assessment (closed-loop networks) have been proposed (Zakrzewski & Steven, 2000; Bull & McKenna, 2001). A model for web-based assessment (Bull & McKenna, 2001) drew initially from the experiences of PC-based systems and divides web-based systems into 3 stages: initial planning and development; post implementation; wider implementation. However, a key aspect of any model is its approach to risk analysis. In this paper we compare risks in two different systems, one closed network and the other web-based, and consider where the similarities and differences really lie.

The University of Plymouth has over 20,000 undergraduate students in 6 Faculties on 4 main campuses over 60 miles apart, and a number of satellite sites over 150 miles apart. Because of the distributed nature of the University, and the need for the same assessment to be used for students on different sites, a web-based system was introduced. During the development we used a risk-analysis approach similar to that espoused by Zakrzewski & Steven (2000).

The strategy for introducing web-based assessment has been described in Ricketts, Bouch & White (2001) but a brief summary follows.

The University of Plymouth has, until recently, used a two-semester academic year and a modular degree structure. Most modules were taught and assessed within a single semester leading to two end-of-semester assessment points each year. The university's assessment policy identifies three types of assessment: diagnostic, formative, and summative. Summative

assessment is divided into two types: invigilated (examinations), and non-invigilated (coursework).

Following the choice of system we set up a steering group comprised of members of all parts of the university affected by the development: academic staff; staff from the central computing service; staff from the examinations office; staff from the university registry and student records; staff from the disability service; a student representative. This steering group ensured that the project was supported by the University's Academic Board, planned staff training, and put evaluation methods in place. It was also responsible for the risk analysis.

As part of the risk assessment, we ran a whole-day risk analysis workshop for this steering group. This workshop identified the types of risks, their severity, and strategies for risk reduction.

Zakrzewski & Steven (2000) divide risks into 4 categories: pedagogic, operational, technical, and financial. We added a fifth category: web. Table 1 below shows the group of web risks we identified.

Table 1: Risks associated with a web-based CAA system and the likelihood of that risk occurring (L=low, M=medium, H=high)

Risk no.	Description	Likelihood
W1	Authentication of login across internet not secure	L
	Different authentication between on-campus and off-campus (web-	
W2	based) use not recognized	М
W3	External Examiner unable to access exam across web	L
	Students accessing inappropriate materials (eg, web-based) during	
W4	assessment	L
	Students using different technical platforms (between sites, at home,	
W5	Mac's?)	М
W6	Students using different browsers	М
W7	Network load too high	М

One of the most interesting outcomes of the risk analysis exercise was that we discovered that there were differences in perception of risks between institutions. Thus some of the risks identified by Zakrzewski & Steven (2000) were not relevant to a different institution, and additional risks were identified in the other categories. In particular, the category of 'Operational' risks is highly institution-specific. The number of available workstations in relation to class sizes for examinations may dictate operational practices which would naturally differ between institutions. The way in which the institution's student record system may be used to generate tests will also vary, as will the impact of any web-based learning environment. Indeed, it is the integration of systems which may generate additional risks.

In the presentation we will further discuss the severity of these risks and strategies for their reduction. We will also stress the importance of institutional practices and procedures in identifying and prioritising risks.

However, the most important message is that using a risk-based approach increases management, staff and student confidence in the implemented system.

Reference List

Bull, J & McKenna, C (2001). Quality assurance in computer-assisted assessment: practical and strategic issues. *Quality Assurance in Education*, **8**, 24-31.

Ricketts, C, White, S & Bouch, G (2001) The distributed university – rolling out computer aided assessment. ALT-C 2001 Handbook, page 4.

Zakrzewski, S & Steven, C. (2000). A model for computer-based assessment: the catharine wheel principle. *Assessment & Evaluation in Higher Education*, **25**, 201-215.