DRIVERS AND BARRIERS TO THE ADOPTION OF COMPUTER ASSISTED ASSESSMENT FOR UK AWARDING BODIES

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Abstract

This paper details a research project undertaken following the publication and launch of the QCA's 'Blueprint for e-Assessment' in April 2004. It considers the current and potential impact on the UK Awarding Body community and how they intend to respond. In turn, this precipitates perceived drivers and barriers to the adoption of e-Assessment systems. The results suggest that there is a groundswell of positive thoughts and actions regarding e-Assessment for Awarding Bodies' learners and notable perceived efficiency gains. However, Awarding Bodies are apprehensive about the blueprint and do not want an agenda or inappropriate assessment systems placed upon them or their learners without appropriate consultation and guidance.

Introduction

The UK assessment industry is experiencing rapid and profound change as both exam Awarding Bodies (Awarding Bodies) and the regulator (QCA) are discussing, shaping and implementing changes that will have profound effects on all stakeholders.

It is perceived that the experiences to date have been mixed, which could be creating unease about recent innovations within the industry.

In April 2004, the QCA launched a proposed 'blueprint for e-Assessment', with a speech by Dr. Ken Boston, Chief Executive of QCA. Dr. Boston talked about the need for QCA to *"embrace a technological future for..assessment" and how they want to "vigorously drive forward towards early achievement of this vision of assessment."*

The key purpose of the speech and blueprint was to stimulate debate and raise questions of how that vision can best be achieved by QCA, Awarding Bodies and other key stakeholders.

In terms of a timeline, Boston was explicit when he specified the following the challenges by 2009:

- All new qualifications will include an option for on-screen assessment.
- All Awarding Bodies should be set up to accept and assess e-portfolios.
- Ten new qualifications, specifically designed for electronic delivery and e-Assessment, should be developed, accredited and live.

Operationally, Boston suggested that this could be performed under the following possible scenarios:

- e-Assessment field trials in at least two subjects per Awarding Body during 2005.
- 75% of key and basic skills tests delivered on screen by 2005.
- A code of practice finalised by the end of 2006 to include agreed standards for quality, reliability and access.
- Live GCSE exams in at least two subjects each with field trialing in at least one custom-designed electronic qualification by that time.

The concluding 'line in the sand' from Dr. Boston was that *"by 2009, e-Assessment should certainly be normal, if not the norm, for thousands of students each year."*

Project Theme

In view of the speech, a research proposal was mooted by Thomson Prometric (an e-Assessment solution provider), QCA and the Federation of Awarding Bodies (FAB – an umbrella organisation for Awarding Bodies). Preliminary discussion gave forth to research ideas regarding how the UK Awarding Bodies would react to the challenge and how they viewed the blueprint.

The research intended to establish UK AB readiness and capability to meet the QCA blueprint. In doing so, it would identify drivers and barriers to adoption, so that in turn, this could inform future assessment policies and commercial offerings. By executing a tightly scoped research project, it was intended that it would help to drive forward the vision by identifying, and also to promote positive messages gained from stakeholder feedback.

The specific areas of research would include:

- Detail the extent of feelings towards the blueprint and the changes therein.
- How the Awarding Bodies are thinking about implementing the blueprint.
- Detail the Awarding Bodies' perceptions of e-Assessment.

- Highlight the spirit of co-operation and/or tensions that exist and/or are generated when Awarding Bodies and technology providers work in partnership.
- Understand the impact of e-Assessment on Awarding Bodies and how this is managed with internal and external stakeholders.
- The risks associated in introducing and using e-Assessment.
- The resolution issues that require solutions so that the Awarding Bodies are in a position to provide e-Assessment solutions that are valid, reliable and fit for purpose.
- How the Awarding Bodies want the QCA to help and/or facilitate stakeholders in introducing e-Assessment.
- The factors that might accelerate move in e-Assessment.

Purpose and Scope

The purpose and scope of the research project was to consult the 116 QCA recognised UK Awarding Bodies and other key stakeholders as to their perceived drivers and barriers to e-Assessment. In addition, and more specifically, to assess and understand their reaction and response to QCA's proposals for e-Assessment and raise questions about how national assessment policy issues and commercial offerings could be re-shaped to ensure that e-assessments are reliable, valid and fit-for purpose.

Target Audience

116 UK Awarding Bodies recognized by the QCA who regularly hold exams that are currently performed with pen/pencil and paper, or are currently using one of a small number of e-Assessment technology providers. The contacts will be those people who have a specific responsibility for e-Assessment or general responsibility for the exam or qualification system. It was conceived that this should be as far as possible a 'census' of the target organisations.

For the initial qualitative stage, an additional twenty-five additional organisations affiliated to QCA were considered including; the Department for Education & Skills, (DfES), the Teacher Training Agency (TTA), the Learning and Skills Council (LSC), and the Sector Skills Councils (SSCs) amongst others.

Stakeholders

Gaining stakeholder buy-in was crucial to a successful project. The overview, topic guide and area of focus were reviewed and approved by both the QCA and FAB. As the project was entirely funded by Thomson Prometric, some

commercial considerations were requested: however each of these was critiqued by Acritas so as not to impinge or bias the research methodology or findings.

Additionally, FAB communicated the project to their members through their regular newsletter, which raised awareness and engaged Awarding Bodies to the project.

Research Vendor Due Diligence

In selecting an independent research company to develop the initial brief and execute the plan, twelve criteria were formulated and a scorecard was developed covering eight long-listed agencies.

Vendor Scorecard

Criteria	Weighting
Company Financials	4
Comprehensive Offer	5
Ideas	6
Pitch	8
Price	9
Proximity to Awarding Bodies	3
Quality & Standards	5
Rapport	7
References	6
Responsiveness	8
Risk Management	6
Understanding of Brief	9

All eight agencies were invited to pitch for the project based on the briefing and resultant communication with Thomson Prometric as budget holders. A project brief and additional background material on e-Assessment was supplied to each vendor. Following receipt of responses, the highest due diligence score was achieved by Acritas (www.acritas.com). Following the receipt of references, Acritas was selected as the preferred vendor for the research and the decision was advised to QCA and FAB.

Methodology

The methodology was suggested by Acritas in line with best practice guidelines from the Market Research Society. This would form the basis of a project plan that all parties would agree to along with agreed milestones.

The recommended approach was to start with in-depth face to face interviews with a small sample of respondents within the Awarding Bodies and QCA partner organizations, to gain a detailed understanding of the e-Assessment arena and

potential developments. The results of the qualitative stage would be used to inform the quantitative stage. This would be interviews completed over the telephone by appointment in order to cover a wider base of stakeholders in a cost-effective manner.

Timing

The project would take approximately 10 working weeks from scoping to full presentation of findings.

Week	1	2	3	4	5	6	7	8	9	10
Scoping and design										
Qualitative Interviews										
Qualitative Analysis & Debrief										
Quantitative Design										
Quantitative Interviews										
Analysis										
Presentation										

Stage 1 – Scoping Workshop and Design

This provided an opportunity for Acritas to learn more about the e-Assessment industry, QCA, the issues faced and the knowledge gaps that require to be filled. It involved the pooling of existing knowledge, views and perspectives about the sample base and target markets. Statistically valid sample sizes, quotas and timeframes were agreed as a result of this stage.

Following Stage 1, Acritas submitted a project plan for approval. A draft of the topic guide for the qualitative interviews was also prepared with an iterative process of feedback and amendments.

Communication Activity

In order to harvest as many participants and responses as possible, a short communication plan was developed and executed. An introductory letter was composed and sent to at least two contacts at each of the target organizations. This was followed by a short phone call from Acritas to confirm receipt and request an interview time. For those who were unable to respond, a reminder letter would be dispatched, alerting them to the phone call. The call would be to confirm the interview appointment time with the interviewee or their staff. The interview would then take place with a ‘thank you’ letter dispatched shortly afterwards.

Step 2 – Qualitative Interviewing

Ten qualitative, face-to-face interviews were performed with Awarding Bodies, a regulator/Awarding Body and UK governmental bodies in order to gather data which describes stakeholder issues in detail and aids understanding of how the e-Assessment marketplace is changing. Each interview was scheduled to last up to sixty minutes and took place on a one-to-one basis at the respondent's office.

The topic guide was strictly followed to ensure all important areas were covered, whilst allowing enough flexibility to probe interesting emergent issues and ensure optimum contribution from each respondent.

To allow interesting and varied debate, rather than simply a 'question and answer' session, a recommendation was made to intersperse the interview with visuals to encourage interviewee interest and creative thinking. This would be an opportunity to walk respondents through examples of e-assessments and to actively gauge responses, looking for both immediate reactions and deliberated thought processes. This was declined as it was thought the tools may bias the results to a particular technology provider or type of e-Assessment.

Where respondents authorized attributable comments, individual interview reports were prepared and transcribed. Upon completion of the interviews, the output was a written report of findings and a short overview.

Stage 3 – Quantitative Interviewing

A structured telephone questionnaire was then designed which was fully informed by the qualitative research findings. This employed both open and closed questioning techniques in order to combine the benefits of detailed verbatim feedback together with measurable data. A great deal of work took place to ensure that the questions, whilst probing and interesting, were not biased or enabled the respondent to only make guarded and curt responses.

Quantitative Interview Topics

Seven main topic headings for the quantitative interviews were determined:

1. Market opinion and communication.
2. Use of technology and AB partnerships with technology providers to deliver e-Assessment.
3. The level of information available to Awarding Bodies about e-Assessment and its supply.
4. The role of regulation for e-Assessment.
5. How Awarding Bodies are seeking to deliver test.
6. What security, technology and invigilation measures need to be in situ at the place of testing.

7. The Awarding Bodies's opinion of the blueprint and how they would achieve the targets.

Sample

Data was sourced from FAB and the QCA. Minor data gaps were completed from Thomson Prometric's own files. Only two Awarding Bodies actively refused to participate with the project. The interviewers were instructed to adopt an 'intelligent interactive' approach, probing for further details where appropriate on open questions. The responses were fed directly into specialist data processing CATI (Computer Aided Telephone Interviewing) software, ensuring accurate and reliable data capture. This would aid data analysis and charting.

Research Unit

The research agency quantitative research unit was managed by a fully qualified Market Research Society member and staffed by experienced, professional researchers. The research team was fully briefed on the background and objectives of the project to ensure an informed approach. The interviews were all conducted at the respondents' convenience.

An approved email outlining the project was prepared should the interviewer be requested for further information by the interviewee in advance of the appointment. Surprisingly, there was no request for this information, although the targeting of individuals directly responsible for e-Assessment or exam programmes helped in this regard.

Stage 4 – Full Analysis and Presentation

Data analysis was preformed with a charted presentation, along with recommendations from Acritas. A findings summary was distributed to all the respondents acting as a thank you. This document provided an opportunity to act as a reassurance that e-Assessment providers will be listening, noting and acting on the findings to tailor their offerings, based on Awarding Bodies' contributions.

Eight themes and comments of individual qualitative interviews

1. Overall a very positive attitude towards e-Assessment and that e-Assessment is a positive step for Awarding Bodies.
2. Candidate feedback and needs will drive e-Assessment adoption rather than the QCA's set timeframes or government agenda.
3. There is little evidence to suggest that government policy is a result of market demand.
4. The current QCA vision appears to be UK schools-orientated rather than appealing to vocational qualifications.

5. Assessment needs to assess the curriculum, rather than what e-Assessment is capable of assessing.
6. Greater publicity, promotion and facilitation of the benefits of e-Assessment is needed.
7. More robust examples of sophisticated scalable e-Assessment uses are needed to inform Awarding Body development plans.
8. There is a perception that what the larger Awarding Bodies want and can achieve will lead the way in terms of timescales, capabilities and setting expectations.

Qualitative Interviews: 7 key findings

1. **1. Familiarity within QCA blueprint** All respondents familiar with QCA blueprint
2. **2. Current e-Assessment delivery** Range from basic pilot to 40% of current assessment programme
3. **3. Main players: Awarding Bodies** City & Guilds, Edexcel, OCR, EDI, AQA, Learn Direct
4. **4. Main players: Technology Providers** Promissor, Pearson, Thomson Prometric, RM, BTL
5. **5. Notable e-Assessment examples** Society for the Motor Industry
6. **6. Reasons for mention** Controlled budget, relevant to task & their candidates
7. **7. Major information sources** Awarding Bodies, QCA, FAB, Becta, Technology providers, USA examples, DfES

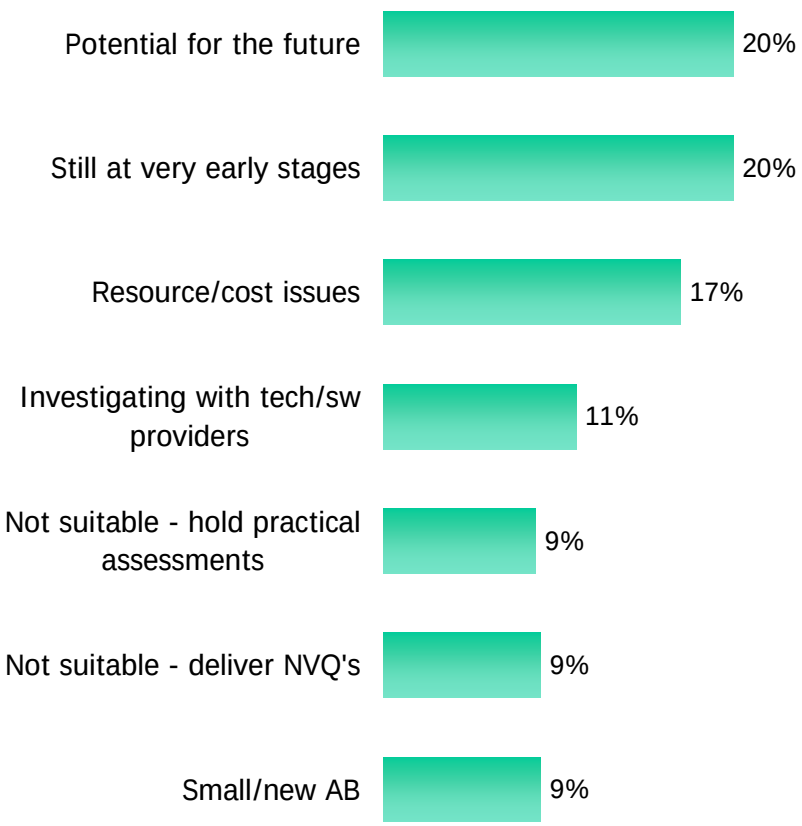
Quantitative Interviews

For reasons of space, the results that are discussed below are a sample of a larger body of responses that were given during the quantitative interviews. All results are based on 87 respondents, with 23 running e-Assessment programmes and 64 who are not.

Of the 74% of respondents who do not currently deliver e-Assessment, 46% are in the process of developing or piloting an e-Assessment programme.

Reasons given for those Awarding Bodies who are not in the process of developing/piloting e-Assessment are provided on the graph below.

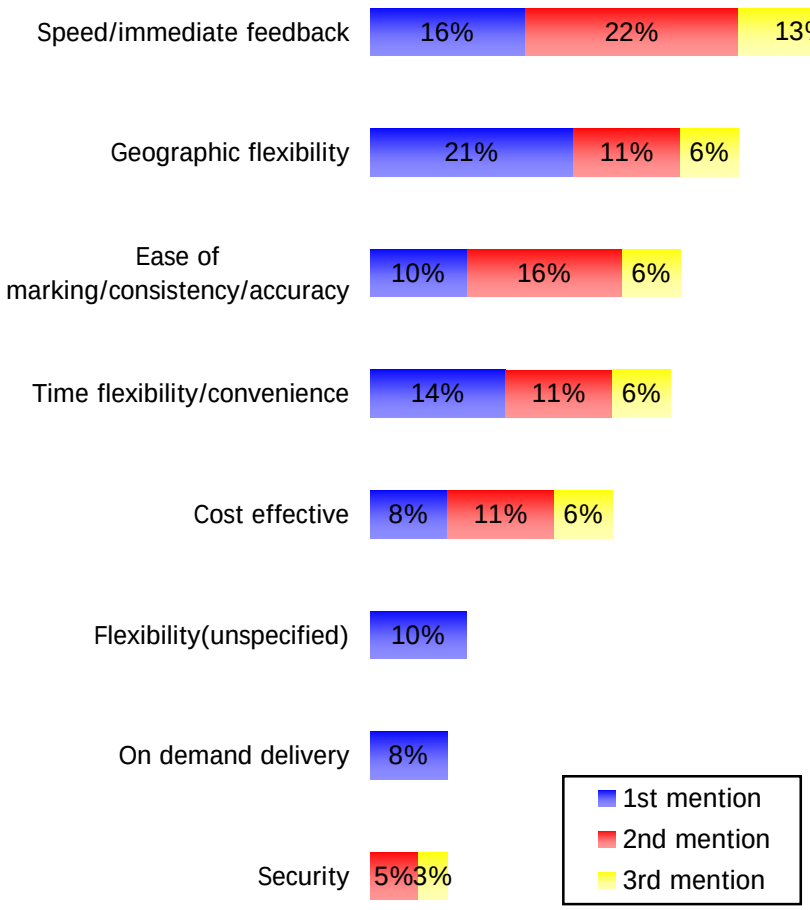
18% of those not developing e-Assessment programmes believe that it is not suitable for their needs. This could be one element that affects opinions relating to the QCA's e-Assessment Blueprint.



With regard to the robustness of e-Assessment, 83% think that e-Assessment is either equally as, or more robust than current testing methods. This is a significant majority, dispelling many of the anecdotal beliefs regarding e-Assessment exam and security robustness.

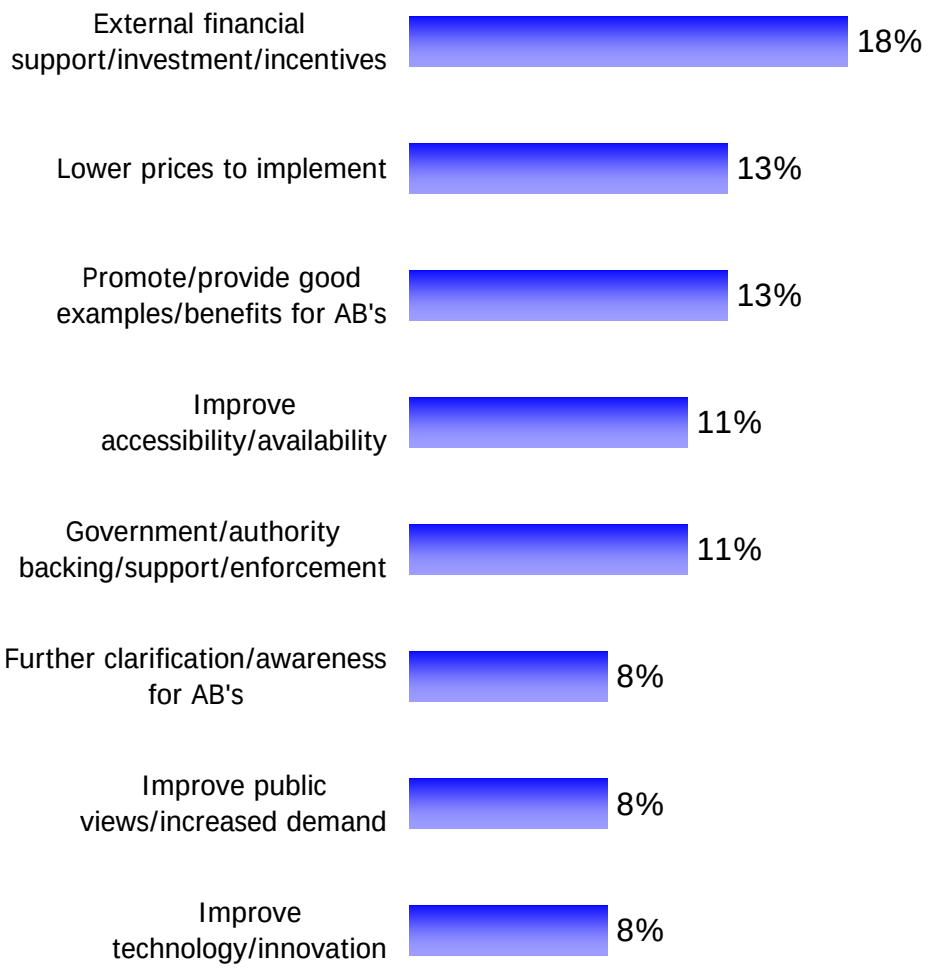
Advantages of e-Assessment

When asked for the three main advantages of e-Assessment, the unprompted responses of speed of feedback and geographic flexibility featured highly, together with consistency of marking and time flexibility. Again, the diagram below demonstrates more than one interviewee response.



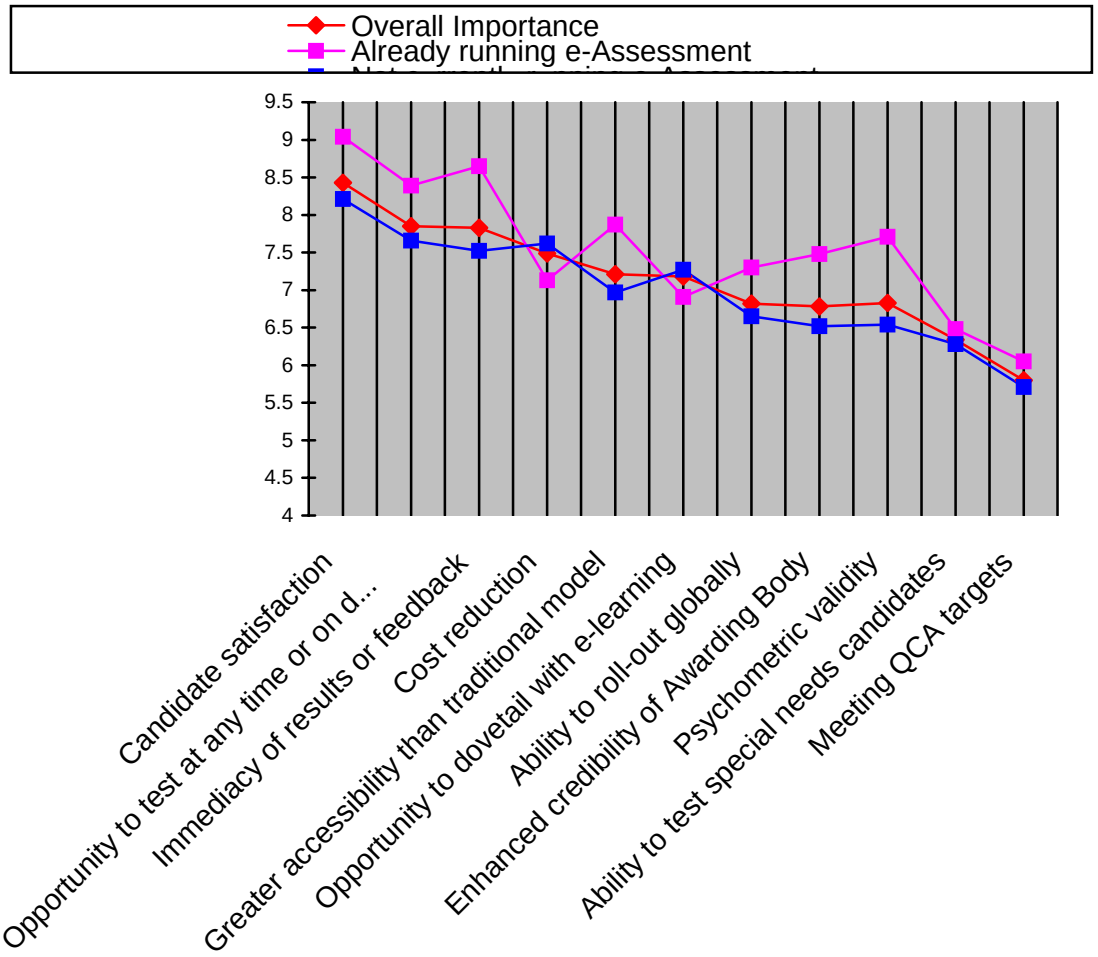
Driving take-up rates of e-Assessment

Again, asking for unprompted responses, respondents were asked what they perceived could enhance take-up rates of e-Assessment. External financial support, lower implementation prices and also good practice examples were cited by almost half of interviewees. Improving assessment access is also mentioned by a significant number of respondents.



Importance Factors

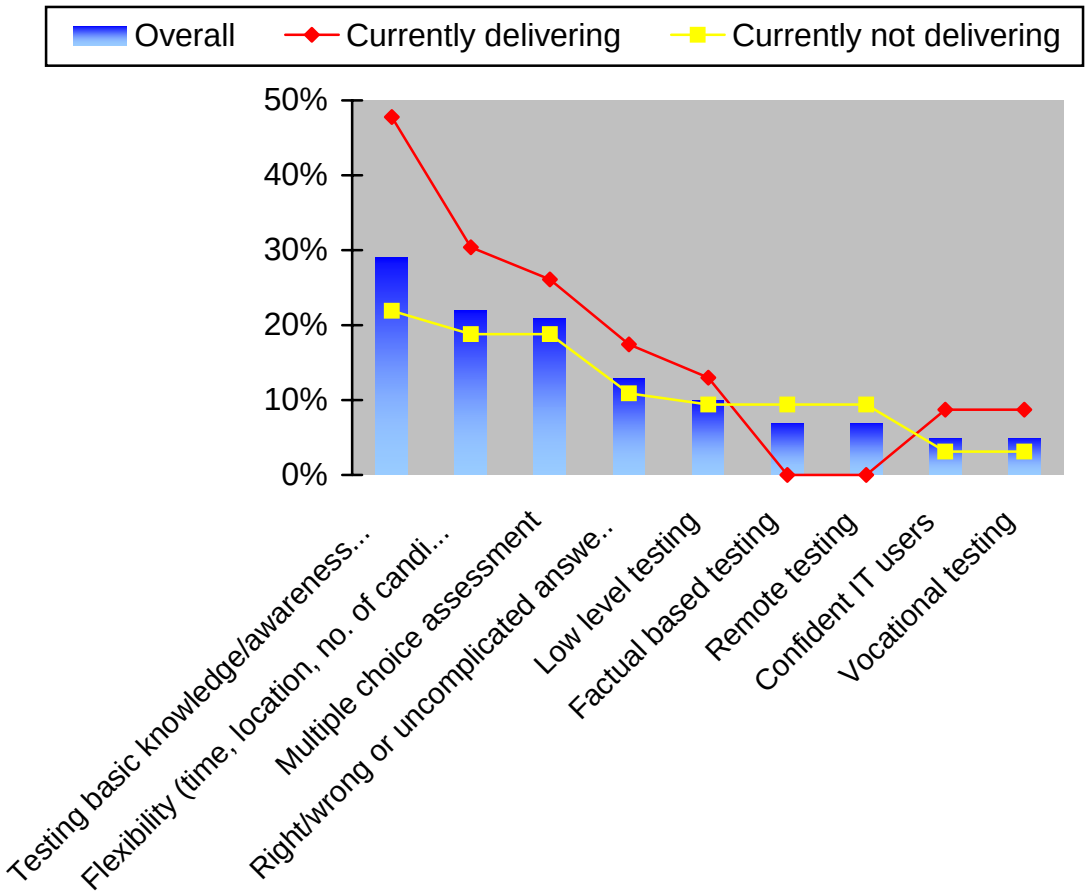
This section highlights the important e-Assessment elements for Awarding Bodies. It is possible to argue that this is a reflection of the values that Awarding Bodies hold in high esteem. Candidate satisfaction, 'on-demand' testing and immediacy of results and feedback are the three highest specified values.



Interestingly, those currently running e-Assessment give high scores to areas such as global roll-out of their programmes and psychometric validity. This tallies with the analysis of previous responses, where it is proposed that these elements become more important to Awarding Bodies as the e-Assessment market matures.

Suitable Circumstances

This section calls out where Awarding Bodies believe e-Assessment is suitable, whether based on their own implementation or their understanding of other e-Assessment systems.



Of particular interest are the differences between those currently delivering e-Assessment and those who are not. Although respondents can spontaneously recall between three and five circumstances, it is surprising that almost three-quarters of all responses were derived from three specific circumstances: Testing Basic Knowledge, Flexibility and Multiple Choice assessment. With reference to the question regarding existing programmes, the e-Assessment programmes that Awarding Bodies are more comfortable with play to these three factors more easily, than perhaps more innovative e-Assessment programmes which are being used in other markets.

Conclusions

There are positive feelings towards e-Assessment as a way of enhancing the learner's experience as well as benefits for the Awarding Body. The thirst for e-Assessment knowledge and desire for engagement with innovative examples suggests that the current programmes (both in the UK and globally), require greater visibility and rational critique.

The impression is one of many Awarding Bodies looking to see firm accredited evidence of a fully functioning e-Assessment programme for a QCA recognized UK qualification. Whilst there is a recognition and occasional uptake of e-Assessment programmes, areas of recent innovation which can further reduce barriers to adoption are not always realized. Additionally, further comfort factors for the Awarding Body would be evidence of cost savings, increased relevance to the test candidate.

There is also an acknowledgement of the changing landscape and the roles played by the QCA and the FAB. A good number of Awarding Bodies look to the QCA to provide the 'rules of engagement' (i.e. standards) and also to engage with them to ease the uptake of e-Assessment. There is a significant call to understand the wide varieties of assessment and how a one-size or one-system approach will not be favourably received by Awarding Bodies, at the very least without any consultation.

Whilst those in charge of assessment programmes at Awarding Bodies can be traditionally viewed as 'educationalists', there is an encroaching environment of market forces and competition for candidates. e-Assessment is viewed as a potential differentiator for Awarding Bodies, particularly when organizations such as QCA see the future with fewer, more focused awards, delivered more efficiently. Nevertheless, it is felt that this increasing commercial environment should not be at the expense of understanding pedagogical and educational specific issues.

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