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A RESPONSE TO THE TOMLINSON REPORT

by

The Exam on Demand Assessment Advisory Group

THE FIRST OF A SERIES OF OCCASIONAL
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A response to the Tomlinson Report by The Exam on Demand Assessment Advisory Group: The first of a series of occasional papers

Summary response

The Exam on Demand (ExoD) Assessment Advisory Group has studied with interest the recommendations made by the Tomlinson Report on the structure and breadth of 14-19 qualifications and the ways that achievement should be reported. Generally, the report is to be welcomed as an informed work that considers afresh the learning and assessment needs of 14 to 19 year olds. However, there are some aspects of the report that the ExoD Assessment Advisory Group found to be disappointing. In particular, the Tomlinson Committee failed to consider:

1. Whether the proposed use of institution-based setting, marking and moderation of assessments will reduce the current assessment burden without associated reductions in the reliability of qualifications.
2. The extent to which the enhanced role of teachers and lecturers in assessment may have a price in reduced institutional autonomy.
3. The potential contributions that on-screen and on-demand assessment could make to the fulfilment of the aims outlined in the report, while enhancing current levels of reliability.
4. The conflicts between the Tomlinson Committee's recommendations and QCA's timetable for the development of on-screen and on-demand assessment of the current GCSE and AS/A level examinations.

This paper raises these issues in order to inform professional and public understanding of educational assessment and how it impacts on learners, teachers, institutions and awarding bodies.

Exam on Demand and the Assessment Advisory Group

Exam on Demand Ltd (ExoD) is one of a core of UK organisations that have developed systems for the on-screen, on-demand delivery of qualifications. Instead of linking itself with a single awarding body, Exam on Demand offers a range of on-screen delivery options to groups of awarding bodies. The company is the principal provider of on-screen, on-demand qualification delivery systems for use in prisons and other secure institutions.

As a major provider of on-screen, on-demand and secure qualifications delivery systems to UK awarding bodies and other agencies, Exam on Demand Ltd has established an Assessment Advisory Group. The Group is chaired by Dr Michael Kingdon and draws its membership from staff in schools and further/ higher education, plus consultants with experience of assessment at the awarding body and regulator levels. One of its ongoing functions will be to produce a series of research and discussion papers to foster professional and public understanding of e-assessment issues. This first paper is a response to the recommendations of the Tomlinson Committee on 14-19 Reform, which reported in October 2004.

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Introduction

The Tomlinson Committee report on 14-19 Reformⁱ was published in October 2004. The Committee was established following several well-publicised failures in the delivery of national qualifications. Its terms of reference included:

1. Strengthening the structure and content of full-time vocational programmes and the provision of greater coherence in learning programmes for all young people throughout their 14-19 education.
2. Manageable assessment arrangements to suit different types of courses and styles of learning and teaching.
3. A unified framework of qualifications to motivate and stretch learners while, differentiating their achievements (Annex O).

The Tomlinson Committee's recommendations in outlineⁱⁱ

1. The structure of learning 14-19:

- a. The achievement of a balance between generic and specialised study, through programmes containing Core and Main learning.
- b. The achievement of breadth and depth of learning within and across groups of related subjects by the specification of "learning lines".

2. The reporting of achievement:

- a. Incorporation of the current KS3 tests, GCSEs, A/AS levels (as A1 and A2 levels), NVQs and other vocational qualifications into overlapping Entry, Foundation, Intermediate and Advanced diplomas.
- b. The introduction of credit-based systems of diploma awards with notional hours of study. Learners will be required to achieve at least 180 credits for the award of each diploma.
- c. The 60 credits for Core learning for each diploma level will be made up of common knowledge, skills and attributes (CKSA) plus an extended project. The former will be developed from the current wider key skills.
- d. The 120 credits for Main learning for each diploma level will be made up of academic and/or vocational components (subjects) organised into agreed learning lines.
- e. The report proposed assessments based on a mastery model. This means that there will be no systems of compensation between diploma components.
- f. GCSE grades to be abandoned in favour of fail, pass, merit, and distinction but A1/A2 level grades to be retained.
- g. The three highest diplomas will be awarded as pass, merit, and distinction.

3. Assessment:

- a. Separation of A1 and A2 examinations into different levels of the Advanced diploma, and reduction of the numbers of A1 and A2 units per subject from 3 to 2. A1/A2 level assessment criteria to be less prescriptive.
- b. The report proposed greatly increased use of in-course (teacher) assessment for the Entry, Foundation and Intermediate diplomas, diminishing proportions at the A1 and A2 levels.
- c. Staff in schools and colleges will mark and moderate assessments set by themselves and awarding bodies. Both will include one-off, time-limited internal and external written and practical tests, examinations and project/portfolio work (*Figure 6.1*).
- d. Some traditional external assessments will be used with other quality assurance procedures to ensure the reliability and consistency of teacher-led judgements. Inspections and validations of institutions, teacher training and development, sampling and moderation using external results were suggested as QA procedures.
- e. Networks of institution-based Chartered Assessors were proposed.

4. The report also made recommendations about:

- a. Progression into apprenticeships and employment.
- b. Institutional performance measurement.

5. Infrastructure and resource implications:

- a. The need for a single agency to register learners and record their progress through the diplomas was stressed.
- b. Reductions in the assessment burden on institutions and learners were claimed.
- c. The use of local infrastructures and timetabling, plus inter-institutional working were advocated.

The recommendations of the Tomlinson Committee were low on specifics but acknowledged that many practical issues remain to be resolved. Suggested development work included (Recommendation 33):

- Pilots of the diploma system with representative samples to identify any adverse impacts on groups of learners.
- Evaluations of the impact of attainment on specific groups of learners.
- Evaluations of the impact of the proposed changes on institutions, teachers, teaching and systems.

Issues of depth and breadth in academic and vocational qualifications

The members of the Exam on Demand Assessment Advisory Group consider that there are some contrasts in the features that employers and universities require from the 14-19 curriculum. Both are expected to approve the Tomlinson Committee's recommendations for the:

- Greater breadth of the 14-19 Core curriculum.
- Emphases on CKSA and extended projects for all learners up to the Advanced diploma level.
- Merging of academic and vocational qualifications into a single structure.
- Reporting arrangements.

However, the design of the learning lines will be critical to how the new diplomas will be perceived by users. Current academic and vocational qualifications differ in what is valued and how it is assessed. Larger numbers of units and more diverse methods of assessment tend to be used to assess academic qualifications and the vocational qualifications typically make greater use of in-course assessment. Since the early years of the GCSE, the use of multiple-choice questions has been restricted to the latter. When academic and vocational qualifications with similar credit ratings are reported at the same diploma level, greater balance in the number and range of assessment techniques may be necessary to avoid some vocational subjects and/or learning lines being perceived as softer options.

There are aspects of the report that will be welcomed by the universities, particularly the opportunities for increased breadth and depth of study, the encouragement of self-motivation and of the development of problem solving skills. One issue that will remain for universities is that the highest level of the diploma will continue to serve as the foundation for study to degree level and, as it is completed, the principal instrument for selection. While the reduction of A2 and A1 units from 3 per subject to 2 is likely to be welcomed, the implications of the move on subject content were less clear and appear to differ from subject to subject.

Second, Schwartz (2004)ⁱⁱⁱ stressed the need for valid and reliable information for university selection and expressed particular concerns about the unreliability of the current system of estimated grades. It will need to be demonstrated in the proposed pilots whether the Tomlinson Committee's emphasis on institution-based marking and moderation over the national will improve the validity and reliability of institutions' estimates of diploma and component awards.

The concern for universities is whether the reliability of the components reported on the Advanced diploma will be reduced to the extent that their selective function is impaired. If admissions tutors fail to have confidence in the proposed changes, due to reliability or other issues, the universities' response may be to negate much of what the Tomlinson Committee has striven to achieve by:

- Disregarding the results for institutionally assessed and/ or institutionally moderated units of diploma components in favour of the externally assessed.
- Introducing their own entrance examinations.

In-course assessment

Current 16+ and 18+ academic qualifications – the GCSE and especially AS/A2 levels - enjoy high public esteem and are often equated by the media with an educational "gold standard". Their standards are also seen as comparably across awarding bodies and subjects (but not, alas, over time). The former reputation is due mainly to the reliability of these qualifications – in short, their ability to award the same grade to equal performances by candidates from institutions across the country.

GCSE and A/AS level qualifications already make use of in-course assessment, with external moderation, for those units of qualifications that cannot be validly assessed by external assessment^{iv}. The Tomlinson Committee also acknowledged the need for the reliability and consistency of assessments to be maintained. To achieve these conditions, it was suggested on page 64 of the report that:

- Assessments set and marked by an awarding body should be moderated by the awarding body. This is not a new idea. Moderation of markers/ examiners is part of the traditional external assessment model, but is termed "standardisation". A more controversial proposal of the Tomlinson Committee was that awarding bodies should design course materials^v.
- Assessments set and marked by institutions should be moderated by institutions, and not as currently by awarding bodies.
- Similarly, assessments set by an awarding body but marked by institutions should be moderated by the institutions^{vi}.
- Most sets of in-course assessments would not need to be adjusted, only those that are deemed to differ by more than a specified amount from moderators' judgements or other criteria.

The Tomlinson Committee also discussed three levels of support to assist teachers with their enhanced assessment roles (*our classification*):

1. The professional. The need for teacher training and development was emphasised. The status of institutional and external assessors will be raised by the establishment of the Institute of Assessment (para 149) and appointment of Chartered Assessors who will have managerial rather than subject roles within institutions.
2. The institutional. Inspections and validations of institutions, the development of local infrastructures, inter-institution working, even local timetables were proposed. References to networks of Chartered Assessors also hinted at the need for the sharing of experience and resources through inter-institutional structures.
3. The awarding body. Moderation by sampling and the use of external results as scaling criteria were suggested.

The ExoD Assessment Advisory Group has major concerns about the Tomlinson Committee's recommendations for replacing many of the current externally assessed units of qualifications with in-course assessment and institution-based moderation. The absence of clear recommendations about the proportions of in-course assessment to be used at the higher diploma levels increases, rather than diminishes, the concerns.

Two issues are discussed below. First, the question of whether institution-based setting, marking and moderation of in-course assessments can achieve adequate levels of reliability is considered. Second, concerns are expressed that initial reductions in the burden of assessment on institutions may be consumed in the search for adequate reliability. Other concerns are considered in the later sections on e-assessment.

Issues of reliability

The current experience of awarding bodies and regulators across the Commonwealth is that, even after external moderation, institutionally marked units of qualifications are the less reliable when compared with externally assessed ones^{vii}. Reasons include:

- The more diverse nature of what is assessed.
- The less controlled conditions in which it is produced.
- The difficulties in defining and communicating national standards of marking and ensuring that institution or locally based marking and moderation standards comply.

All of the methods of institution-based marking and moderation suggested by the Tomlinson Committee are dependent upon teachers being able to produce:

- Accurate rank orders of merit of learners for each assessment.
- Sets of marks that either comply with agreed national marking standards or can be scaled to do so.

These two conditions are critical. If teachers are unable to comply with one or both, the in-course assessments for their learners may need to be remarked externally. If too many teachers are unable to comply, the proposed assessment system will prove impracticable.

Even given adequate orders of merit and external moderation, in-course assessments continue to be less reliable than external assessments. Further increases in reliability can be achieved using combinations of external methods of moderation. Unfortunately, as more resources are allocated to the use of successive layers of external moderation procedures, the incremental improvements in reliability can be expected to decline.

The KS3 Quality Audit, 1992-4, provides a relevant example of the relationship between reliability and practicability. The key stage 3 (KS3) assessments for those years used externally devised tests, institutional marking by subject teachers, institutionally moderated, then external moderated using postal samples. LEAs provided training for the teachers, that marked the tests. The outcomes differed with the subject assessed but were generally discouraging. Even with institutional moderation, large numbers of teachers were unable to mark to the specified tolerances for English, and significant numbers of schools had to remark and resubmit samples. Some schools were required to submit all their scripts for external marking. When the KS2 tests were introduced in 1995 both key stages moved to the external marking model.

References in the Tomlinson report to the use of results for externally assessed units of qualifications to moderate in-course assessments may also fail to provide adequate levels of reliability. Although, examples of statistical moderation of in-course assessments exist, the procedure remains controversial and a consensus exists between the UK awarding bodies that it should only be used when certain conditions apply. High on this list are:

1. An adequate correlation between the in-course marks and the criterion against which they are to be scaled^{viii}.
2. The proportion that the criterion marks will contribute to the overall qualification should be relatively high. If the proportion of criterion marks is low relative to the in-course assessments they are being used to moderate (as the Tomlinson Committee appear to have proposed) statistical moderation may make the latter less reliable and less valid, not more^{ix}.

Many awarding bodies do, however, use statistical methods to identify sets of in-course assessment and marks of individual markers that differ significantly from expectations. They then use sampling methods to investigate and, if necessary, adjust them.

The Tomlinson Committee's Recommendation 33 was that extensive research and modelling should be used to evaluate the impact of their proposals on institutions and systems. Modelling should be used to investigate the recommended assessment and moderation procedures to determine the changes in the relationships between reliability, validity, practicability and cost.

Issues of validity

To be valid assessments need to sample the same areas of content and skills that the learners have followed in their courses of study for a component of a diploma. The standard UK method of ensuring validity is to evaluate the "face validity" of assessments, as they are set and marking schemes designed. More sophisticated measures of validity are available but tend not to be used.

If assessments for the same subject and/ or qualification are to be set by different agencies, as the Tomlinson Committee has proposed, there is a risk that the overall assessment of the component may become invalid through inadequate sampling of its domain of content and skills. There is a particular danger that one or more of the agencies will render the overall assessment of a component invalid by focusing on aspects of its domain that are easy to assess and moderate, rather than assessing aspects that are important, but potentially difficult to assess.

To ensure adequate validity in the assessments for a component – institutional and external – it will be necessary to coordinate the roles of the different agencies to ensure that all-important aspects of the component are assessed. The awarding bodies or QCA may have to prescribe the areas of content and the individual skills that are to be assessed by institutions. Part of the quality assurance roles to be undertaken during moderation and the visits to institutions will need to be evaluations of the face validity of the institutional assessment and moderation procedures.

The availability of experience in the design of assessment and moderation systems

While the report refers to the experience of in-course assessment that was developed for the Certificate of Secondary Education (CSE) and trials of Joint 16+ CSE/ GCE O-level examinations, these experiences must be considered as dated. The forerunners of QCA effectively stopped experimentation on in-course assessment and moderation for academic qualifications when the GCSE was introduced in 1988. Reductions in their use followed during the subsequent revisions of the GCSE and A/AS subject criteria. Therefore, rigorous trials of the new models of in-course assessment and institutional moderation are prerequisites to the evaluation of the other assessment recommendations of the Committee.

Professional versus institutional autonomy

In preparing this response the members of the ExoD Assessment Advisory Group have noted the assumption in many of the earlier responses to the Tomlinson Committee's recommendations that expanded use of in-course assessment will increase the professional autonomy of teachers. While the Assessment Advisory Group agrees, it is also of the view that there may be a price to be paid at the institutional level. The systems of inspections and validations of institutions, the development of local infrastructures, inter-institutional working, even the local timetables that are proposed to support in-course assessment are all likely to reduce institutional autonomy.

The potential contribution of e-learning and e-assessment

The implications of e-learning and e-assessment of qualification units are profound. However, the Tomlinson Committee has addressed these important issues only briefly. The members of the ExoD Assessment Advisory Group wish to draw attention to the contribution that e-learning and e-assessment will come to make to all 14-19 learning and the fulfilment of the aims identified in the Report.

The thrust, underpinning many of the Tomlinson Committee's recommendations, is towards more in-course assessment. By failing to give e-assessment full consideration, some readers of the report may conclude that in-course and e-assessment represent opposing assessment options. This is not so. E-assessment is not an alternative to in-course assessment. A clearly thought through strategy using e-assessment could provide institutions and other stakeholders with efficient, robust and reliable assessments, be they in-course or externally managed. It can also provide a range of tools to support the learner, teacher and administrator. Through the use of question and e-paper banks, e-assessment can enable teachers in institutions to develop effective, high quality and reliable in-course assessments.

No claims are made here that e-assessment represents a panacea for all assessment needs. Instead, it presents institutions with new managerial challenges including, set-up and maintenance costs, new demands on IT infrastructures, plus new ways of teaching and assessing – all with associated training needs.

E-learning

The members of the Group concede that many available e-learning materials are not of the highest quality and e-assessment systems are generally in the early stages of development. These factors are attributed to a combination of the current high cost of developing such materials and systems, plus the lukewarm attitude of many national agencies. Nevertheless, there are some examples of good e-learning materials being produced by individual awarding bodies, training organisations^x and the media.

Looking forward, the Assessment Advisory Group expects that increasing examples of training materials will become available on-line. In the medium term, it expects e-learning materials, that exploit other media and incorporate formative assessments, will be available in sufficient quantities to become the major route to the individualisation of learning. Similarly, e-assessment systems are expected to provide the means for individualising assessment for many qualification units.

Forms of e-assessment

The Qualifications and Curriculum Authority (QCA) is using the general term "e-assessment" to cover a variety of applications of ICT to assessment^{xi}:

1. E-portfolios are being introduced by awarding bodies to replace paper-based reports, studies and projects required for many qualifications and provide records of competencies achieved for others. Examples of the latter include some industry-specific and National Vocational Qualifications (NVQs) qualifications. E-portfolios assist learners by enabling them to incorporate a wide variety of media and their teachers and assessors by providing audit trails and easy means of submission for institutional comment, external assessment and moderation.
2. External e-testing (often referred to as "on-screen test or qualifications delivery") is being used by awarding bodies to provide a flexible alternative to paper-based qualifications. At present on-screen assessment is largely confined to multiple-choice (MCQ) type tests for Levels 1 and 2 of the national qualifications framework (NQF). Use of e-testing is proceeding faster for many industry-specific and the Basic and Key Skills qualifications because of their use of MCQ testing.
3. E-marking/ on-screen marking of qualification units is being introduced by awarding bodies and MIS^{xii} suppliers to improve the balance of human, technical, time and cost resources required for large-scale qualifications delivery. Currently, candidates' scripts are scanned and the resultant electronic images decollated for marking. Rather than requiring expert markers to mark all sections of a script, automatic marking systems can be used where appropriate, leaving expert or clerical markers to focus on particular sections. Quality assurance arrangements, such as double blind marking, can be incorporated with ease. Additional advantages of both e-testing and e-marking are the quantities of information on candidates' performances available for QA procedures and feedback to their institutions.

Kingdon (2004)^{xiii} reasoned that the scanning of scripts for e-marking is likely to be a temporary expedient. As on-screen assessment develops the images of candidates' responses will be captured on-screen. As this happens current e-testing and e-marking systems can be expected to merge to form a general e-assessment technique.

On-demand assessment

An assumption is often made that on-demand assessment is one form of e-assessment, but this is not correct. In practice, on-demand assessments can be delivered using either paper or electronic media. The significance of linking on-demand assessment with e-assessment is that, together, they have the potential to support learners with test-when-ready e-assessment.

Further, the quality, quantity and immediacy of feedback that can be derived from both e-learning and e-assessment have the potential to make 14-19 assessments diagnostic, formative and summative as required, and thus fully assessment for learning.

QCA's current e-assessment and on-demand initiatives

In April 2004 QCA published a five-year programme for the implementation of e-assessment and on-demand assessment. Key targets^{xiv} included:

- 75% of the basic and key skills/ CKSA tests for NQF Levels 1 and 2 to be delivered on-screen in 2005.
- Field trials of the first on-screen GCSE subjects in 2005.
- The three English unitary awarding bodies to offer the first on-screen GCSE examinations in 2006.
- Codes of practice plus audit and regulatory criteria to be in place for 2007.
- 10% of GCSE examinations to be delivered on screen by 2007.
- Introduction of the first on-demand GCSE examinations in 2008.
- On-screen, on-demand delivery of GCSE examinations to be the norm by 2009.
- Although a separate timetable was not provided, it was implicit that on-screen, on-demand assessment of some units of A/AS level examinations would follow.

Several prerequisites are required for the full implementation of QCA's e-assessment timetable:

- Awarding bodies are to accept and assess e-portfolios (no date was given).
- New types of questions will be needed for the assessment of all aspects of GCSE examinations, with e-marking using clerical or expert markers where automatic marking systems are not appropriate.
- A code of practice, audit arrangements and regulatory criteria to be in place by 2006.

The Tomlinson and QCA timetables compared

The timetables proposed by Tomlinson and QCA not only conflict, implementation of the latter may render some of the Tomlinson Committee's recommendations redundant. The ExoD Assessment Advisory Group and Exam on Demand share a view that items on the QCA e-assessment agenda will address many of the concerns raised by the Tomlinson Committee and this response to their recommendations. Chief among these is the contribution that on-demand e-assessment can make to:

- Improving the use of human, technical and financial resources.
- Reducing the peak assessment burden on learners, institutions and awarding bodies.
- Raising standards by individualising assessment.
- Maintaining the reliability of current assessments.
- Merging of the academic and vocational learning lines into the diploma structure through the use of common e-assessment techniques.

It is relevant to record here that, while working with awarding bodies and institutions to implement on-screen assessment of the Basic and Key Skills and industry-specific qualifications, Exam on Demand has noted the value of combining on-demand delivery with on-screen assessment. Rather than considering them as separate elements in an overall timetable, Exam on Demand has found that on-demand assessment addresses some of the resource and management issues that on-screen assessment can create for institutions. The members of the ExoD Assessment Advisory Group therefore suggest that:

- During the timescale proposed by QCA, many institutions will continue to have difficulties resourcing and managing large-scale simultaneous deliveries of on-screen assessments.
- To introduce on-demand delivery and on-screen assessment together will make significantly less demands on institutional resources and would foster individualised learning with when-ready assessment.

Implications of e-assessment and on-demand assessment for learners

The Tomlinson Committee recommended that all 14-19 learners should continue to develop their ICT skills and undertake extended projects for all diplomas. Given that e-portfolios form part of QCA's e-assessment timetable, their use is likely to become the standard method of producing the project reports well before the Tomlinson Committee's recommendations are implemented.

Together, on-screen and on-demand delivery of qualification units hold the promise of reducing the peak assessment burden on learners by enabling them to take some/ all of the units of diploma subjects when they are ready. Such opportunities would also raise standards. First, learners would be able to improve on earlier results by re-sitting unit assessments. Second, if learners were able to complete the assessment for some subjects early, they would be able to devote the time saved to the study of other subjects, to broaden or deepen their study of the same subjects by taking enrichment or extension units for additional credit, or to begin advanced courses early.

The overwhelming reactions of learners that have taken existing on-screen tests have been positive, despite the fact that many of the tests used were written for on-paper delivery. The immediacy and quality of the feedback provided has been valued by all learners that have used the on-demand systems. The questionnaires completed by learners and their teachers for some of the awarding bodies have indicated that for many learners on-screen work is now the norm, and paper the exception. Further, the reduced formality that can accompany on-screen assessment is also reducing many of the tensions associated with external assessment.

Implications of e-assessment and on-demand assessment for institutions

Institutions that are adopting e-learning and e-assessment systems are experiencing new management and resources challenges. The introduction of on-demand e-assessment makes large demands on electronic resources but can free-up physical ones. Peak assessment loads can be distributed more evenly across courses of study and the annual monopolisation of the assembly or sports hall for external assessments will diminish as QCA's e-assessment timetable advances.

As the peak demands of external assessment decline, they are being replaced by ongoing assessment requirements^{xv}. Some specialist institutions are already finding on-demand e-assessment easier to manage if they dedicate an ICT suite to its use. Institutions that are not ready to make this commitment, or have pressures on their ICT resources, are no longer limited to the traditional academic day or calendar. Several awarding bodies are already offering 24/7 on-demand e-testing.

Both e-learning and e-assessment are providing more tools with which to monitor learners' progress, and feedback from the latter is informing learning and the further design of courses. However, as e-learning and on-demand e-assessment develop institutions are required to manage their e-resources and record management systems in new ways.

Looking forward, the effects on institutions that adopt on-demand e-assessment of the major qualifications will be profound. On-demand assessment will mean that learners will be able to complete some qualifications early and many will expect to study enrichment or extension units for additional credit, or begin advanced courses early. Educational standards can be expected to rise as learners take external assessment units when they are ready, some units are retaken, credits for enrichment, extension and advanced courses are achieved, and learners that have completed some courses give additional attention those they find to be difficult.

Implications of e-assessment and on-demand assessment for awarding bodies

The wide-scale use of on-demand e-assessment will change radically the ways that awarding bodies work. For some assessment is already a 24/7 service to institutions. Registration and the delivery of assessments will be on-demand and detailed results will be provided immediately for some assessments and at the most in a few days if expert markers are required.

To resource these developments the awarding bodies will require permanent banks of e-papers or questions to be drawn on on-demand, and marking facilities with access to 24/7 automated marking systems and resident teams of clerical and expert markers. Underpinning all of these developments must be new attitudes to MCQ testing and the development of new types of e-questions. The Tomlinson Committee outlined some of the questions types that they expected to see used (para 156) and to these must be added those that require e-marking. The results data derived from e-testing and e-marking is already being used to develop the reliability of e-assessments.

Implications of e-assessment and on-demand assessment for QCA

For the regulator, QCA, e-assessment offers a technically reliable alternative, or adjunct, to the extensive use of in-course assessment proposed by the Tomlinson Committee. If, as the Committee has recommended, in-course assessments do become the norm, on-demand e-assessment will offer early criteria to moderate the in-course assessments against.

In addition to all of the advantages associated with reduced assessment loads, when-ready assessment and detailed feedback to learners, e-assessment and on-demand assessment offer the regulator greater opportunities of involvement in assessment processes as they happen. Rather than having to rely on post-hoc results and reports, QCA would be able to work with awarding bodies to identify issues and patterns in assessments as they arise.

Changes to regulatory processes will be required to accommodate e-assessments and QCA proposes to develop them early in the e-assessment timetable. Given that the current principles for qualifications delivery have been developed iteratively over 150 years and the changes that can be expected as e-assessment becomes routine, any a-priori principles are likely to require ongoing revision when tested against developing e-practice.

The Tomlinson Committee's proposals and record keeping

The Tomlinson Committee rightly recommended the creation of a single system for the management of learners' registration, results and certification as they proceed through the diploma structure. However, the forgoing discussion indicates that, whether in-course and/or e-assessments are implemented, institutions and awarding bodies will still be required to maintain their records of learners, courses taken and units of qualification components sat and passed. Further, the discussion also indicates that awarding bodies and institutions will need to interface with each other and the national system. The proposed system may need to take a devolved, rather than the centralised form that the Tomlinson Committee have implied.

Discussion

The Tomlinson Committee's recommendations for increased use of in-course assessment are justified by claimed reductions in the assessment burden on learners and institutions and the current costs of 14-19 assessment. While the members of the ExoD Assessment Advisory Group agree that the burden on learners would be reduced, the other claims have yet to be demonstrated.

The concern of the members of the ExoD Assessment Advisory Group remains that initial reductions in institutional workload and costs may be consumed by attempts to impose adequate reliability on less than robust models of assessment and moderation. Initial cost savings will be determined by the ratios of in-course to external assessments that come to be agreed for each diploma level. These savings will be partly or fully negated by the costs of implementing and managing institutions' in-course assessment programmes. The impact of the Tomlinson Committee's recommendations on institutions requires early quantification.

E-assessment offers tools to deliver reliable in-course and external assessments. While institutional implementation and management costs would be high, they can be reduced significantly through the adoption of on-demand delivery. Together e-assessment and on-demand delivery of qualification units are able to individualise assessment programmes, thereby reducing the assessment burden on learners, while improving their learning opportunities and results.

Finally, many of the assessment techniques and issues discussed in this paper will be considered in greater detail in forthcoming occasional papers produced by the ExoD Assessment Advisory Group.

Exam on Demand Assessment Advisory Group

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Endnotes

- i) Tomlinson M (Chair) (2004), **14-19 Curriculum and qualifications reform: final report of the Working Group on 14-19 Reform**, DfES Publications (ref DfE-0976-2004), Nottingham and www.14-19reform.gov.uk.
- ii) Our wording and order.
- iii) Schwartz S (Chair) (2004) **Fair admissions to higher education: recommendations and good practice**, report of the Admissions to Higher Education Steering Group, DfES Publications (ref AHER3), Nottingham and www.admissions-review.org.uk.
- iv) A practical consequence of this policy is that the correlations between the externally and institutionally assessed units of a qualification tend to be low.
- v) Awarding bodies have differing views about their roles as producers of course materials. The unitary awarding bodies that assess the GCSE, A/AS levels and vocational qualifications have not seen it as part of their role - indeed some view it as a potential conflict of interest. It is the smaller industry-specific vocational awarding bodies that consider that they are best placed to develop both course and assessment materials.
- vi) See Figure 6.1 on page 64 of the report.
- vii) Robinson C (2000), **An overview of the first conference of the ACEAB**, pages 303 to 310 in Bissoondoyal S (Ed) (2000), **School Based Assessment and Equivalence of Qualifications**: report of the first international conference of the Association of Commonwealth Examination and Accreditation Bodies, Mauritius, September 2000, Mauritius Examinations Syndicate, Reduit, Mauritius.
- viii) See endnote "v" above.
- ix) Jones B (2000), **Comparability between examinations: a review of issues**, pages 221 to 241 in Bissoondoyal S, (Ed) (2000) – as endnote "vii" above.
- x) See for example the e-learning and formative assessment materials that have been developed with DfES support by the Polymer Awarding Body.
- xi) QCA (2004), **On-screen delivery of qualifications, the Basic and Key Skills experience**, <http://www.qca.org.uk/6993>.
- xii) MIS = management information systems.
- xiii) Kingdon M (2004), **The e-assessment agenda**, paper presented to the 30th annual conference of the International Association for Educational Assessment, Philadelphia, USA, June 2004.
- xiv) QCA (2004), **A proposed blueprint for delivering e-assessment**, and <http://www.qca.org.uk/7192>.
- xv) QCA (2004), (endnote "xi" above).

A response to the Tomlinson Report by The Exam on Demand Assessment Advisory Group: The first of a series of occasional papers

Summary response

While the ExoD Assessment Advisory Group welcomes the report's recommendations on the structure and breadth of 14-19 qualifications and the ways that achievement should be reported, other aspects of the report are considered to be disappointing. In particular, the Tomlinson Report failed to consider:

1. Whether the proposed use of institution-based setting, marking and moderation of assessments will reduce the current assessment burden without associated reductions in the reliability of qualifications;
2. Where the new costs of assessment will be centred;
3. The extent to which the enhanced role of teachers and lecturers in assessment may have a price in reduced institutional autonomy;
4. The potential contributions that on-screen and on-demand assessment could make to the fulfilment of the aims outlined in the report, while enhancing current levels of reliability;
5. The conflicts between the Tomlinson Committee's recommendations and QCA's timetable for the development of on-screen and on-demand assessment of the current GCSE and AS/A level examinations.

Exam on Demand and the Assessment Advisory Group

Exam on Demand Ltd (ExoD) is one of a core of UK organisations that have developed systems for the on-screen, on-demand delivery of qualifications. Instead of linking itself with a single awarding body, Exam on Demand offers a range of on-screen delivery options to groups of awarding bodies. The company is the principal provider of on-screen, on-demand qualification delivery systems for use in prisons and other secure institutions.

As a major provider of on-screen, on-demand and secure qualifications delivery systems to UK awarding bodies and other agencies, Exam on Demand Ltd has established an Assessment Advisory Group. One of the ongoing functions of the Group will be to produce a series of research and discussion papers to foster professional and public understanding of e-assessment issues. This first paper is a response to the recommendations of the Tomlinson Committee on 14-19 Reform, which reported in October 2004.

The Assessment Advisory Group is chaired by Dr Michael Kingdon and draws its membership from staff in schools and further/ higher education, plus consultants with experience of assessment at the awarding body and regulator levels.

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