

E-moderation: guidelines for FE staff and external moderators

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About this guide

There are two sections:

- ◆ Section A gives guidance to centres on e-moderation activities.
- ◆ Section B gives guidance to External Moderators on how to deal with e-moderation and e-assessment.

A Guidelines for centre staff

Moderation is the process by which SQA ensures that national standards are being applied in internal assessment carried out by centres.

Where a centre is assessing or evaluating candidates' performance using any form of electronic medium, the type of moderation that may be used is called 'e-moderation'. As with any other form of assessment, assessment instruments must be valid and assessment decisions must be correct.

The main issues that are specific to e-moderation are:

- ◆ the immediacy of the evidence and assessment result
- ◆ security
- ◆ quality control

Just as happens in other types of moderation, e-moderation will require the production and retention of evidence.

Where a centre is found through e-moderation to be correctly applying national standards, its assessments, marking processes and evidence will be accepted.

A1 Overview

E-moderation will be subject to the same conditions as traditional external moderation procedures, subject to the additions described in this document.

E-moderation brings different challenges for centres and you should ensure that you have a clear policy on equality of assessment opportunity across all candidate types and groups.

Centres following the principles outlined here, and retaining appropriate evidence, will, in most instances, meet the standards required by e-moderation.

The documentary evidence you will be required to produce and retain may be both physical and electronic.

Initial research into e-moderation practice has highlighted a range of key issues and criteria which will have to be addressed by centres implementing electronic assessment (e-assessment). These fall into the following categories:

- ◆ pre-delivery
- ◆ delivery
- ◆ post-delivery
- ◆ responses/results
- ◆ re-assessment

- ◆ internal moderation
- ◆ external moderation

A1.1 External moderation

A systematic approach to e-assessment and quality assurance is shown in **Figure 2 — Internal and External Quality Assurance Processes**. Please see page 10. We anticipate that, if you followed the principles outlined here, and retained the appropriate evidence, you would satisfy the standards required by e-moderation.

Definition of online assessment and e-assessment

See SQA's *Guidelines on Online Assessment for Further Education*, (AA1641, March 2003) for the current definition of e-assessment.

Online assessment involves the use of computer systems to enable the:

- ◆ creation, storage and delivery of assessments to candidates
- ◆ capture, marking, storage and analysis of their responses
- ◆ collation, return and analysis of results

There is more about the rationale for the use of this kind of assessment later in this document.

E-assessment is where electronic media are used to:

- ◆ deliver and support the assessment process
- ◆ support the assessment event
- ◆ support the capture of candidate evidence
- ◆ quality assure the process of production of the candidate evidence
- ◆ produce evidence to make an assessment decision
- ◆ record the result on hard or electronic copy

A1.2 How e-moderation works

During e-assessment, the evidence from electronic files generated should be retained by the centre's systems. Moderation will require that you retain evidence of candidates' performance, and of your centre's assessment decision for the appropriate time after completion.

This means that your centre has to ensure that all the IT-based applications and systems used in e-assessment are robust and accessible. These systems also need to be secure and to meet the standards identified below.

External e-moderation will examine the physical and electronic files retained by the centre. This will include any or all of the following:

- ◆ instruments of assessment (IAs)
- ◆ assessment events — information relating to where they took place and how they were conducted
- ◆ evidence of internal moderation
- ◆ a documented procedure designed to ensure the authentication of candidates
- ◆ a documented procedure designed to ensure the authentication of candidates' evidence
- ◆ candidates' evidence
- ◆ assessment decisions on candidates' evidence
- ◆ transmission of results to SQA
- ◆ appeals procedure

Date and time stamping, and other important information

For these documents to be valid as evidence for external moderation, they will need to be date and time stamped. You will have to identify the location(s) used for assessment events. You will also have to identify the conditions and arrangements that were used for assessment.

There will be a time lapse between centre delivery and e-moderation, internal or external, taking place. It's important that you take account of the necessity to retain evidence for moderation when you plan e-assessment.

You will have to identify and document the conditions under which any assessment event takes place and therefore your infrastructure will have to include physical, network and information system components to support the documented conditions. These would cover, for example:

- ◆ any formal agreements for systems which require external support
- ◆ in-house procedures for systems supported internally, including implementation, backup and recovery processes
- ◆ a document describing the architecture and security of the system for storing IAs — to include access procedures and permission to access remote repositories such as item banks and libraries
- ◆ a record of the architecture of the file system for the storage of IAs and candidate evidence
- ◆ centre Management Information System (MIS)
- ◆ security policies (including operation)
- ◆ candidate evidence submission processes — these may differ for local and remote sites
- ◆ policy and procedure for invigilation — electronic and/or traditional

- ◆ records of licensing and legal compliance — centre, staff and students
- ◆ plans for changes to the software base or Virtual Learning Environment (VLE)

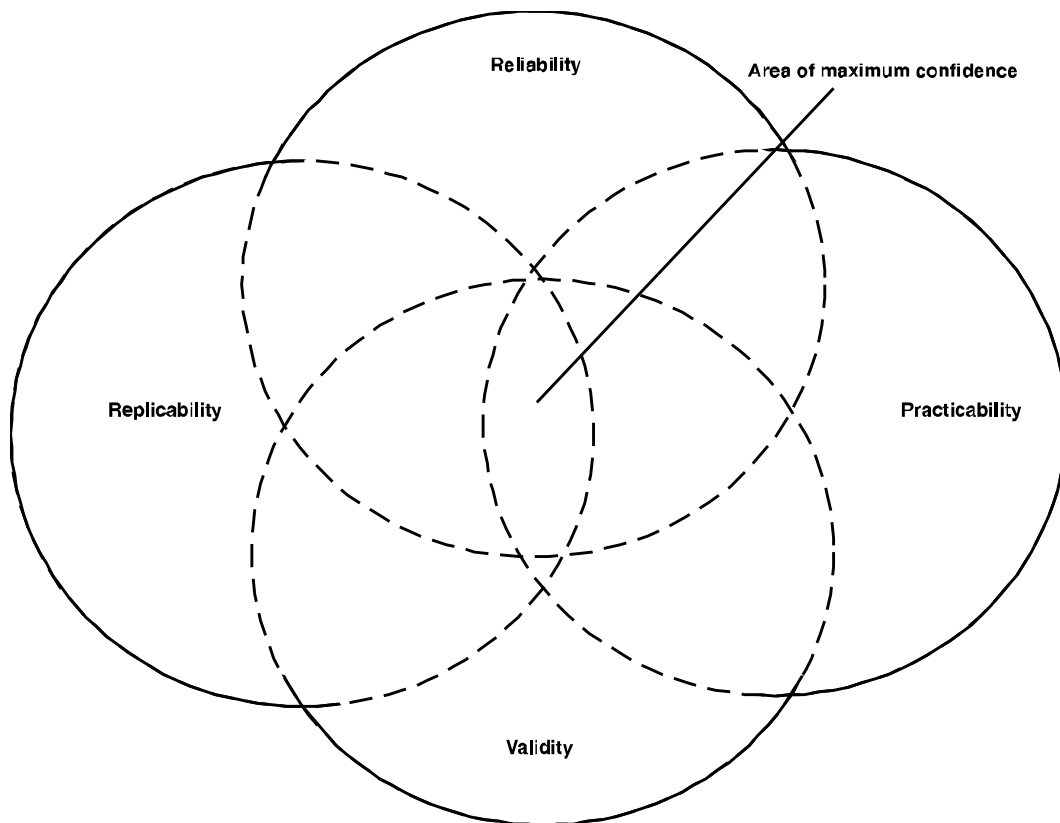
A1.3 Assessment principles and practices

For e-assessment, the assessment principles described in SQA's *Guide to Assessment and Quality Assurance for Colleges of Further Education* (AA0841/2, December 2001) — validity, reliability and practicability — need to be extended to include **replicability**. This is because electronic tools can provide the opportunity for randomised and dynamic IA generation, which will be scrutinised during e-moderation.

Replicability is the ability of your system to reproduce an IA. The IA need not be identical to the one already devised, but it must be of the same level, have the same format and conditions, and must be capable of being assessed to the same standard.

The following diagram (figure 1) shows how the four assessment principles work together.

Figure 1: Assessment Confidence Model



A1.4 Production of IAs from a question bank

Your centre's internal process for the selection and use of individual questions or full IAs, needs to be documented and must accord with SQA standards.

You should therefore have a documented procedure to identify how a devised IA will be:

- ◆ accessed
- ◆ used
- ◆ protected

Assessment Exemplar Packs (AEPs) are provided by SQA to exemplify levels and standards of performance. AEPs can be used as assessment instruments providing that you can demonstrate that you have ensured the integrity of the IA and that it meets the criteria identified above (as is the case with all IAs).

A1.5 General issues for centres

The scope and reach of each centre has now been considerably extended through the introduction of Information and Communication Technologies (ICT). You will therefore have to consider the implications of having to support and enable e-assessment. Similarly, you should review and evaluate the operation and suitability of your current processes and, in particular, address the following issues:

a Responsibilities

The specific responsibilities of staff now involved in the e-assessment process must be clearly identified, and their access rights must be documented. It is advisable that this information is co-ordinated at a central point within your centre.

b Staff training/development

You will need to identify who is suitably qualified to assess online, and what qualifications and experience these staff members should possess.

c Access to assessment data

You should take account of the possibility of inappropriate access to electronic IAs and candidate responses, and the potential for deliberate or accidental publishing or corruption.

d Policy

E-assessment will impact significantly on college policy in areas such as methods of assessment, quality assurance (internal and external), special assessment arrangements and appeals. You are therefore advised to review and revise your policies in light of this.

e Procedures

E-assessment will also have a significant impact on procedures. For example, feedback to candidates, automatic marking of scripts and e-mail communication are all factors to be considered. Further considerations are:

- ◆ inappropriate and illegal use of other resources during an assessment event
- ◆ the need to review procedures concerned with the retention and access to candidates' records, and the way in which you communicate the candidates' records and results both to them and to others

f Enrolment of candidates

Electronic enrolment (e-enrolment) of students and the process of candidate authentication have an impact on candidate registration for assessment. You may need to introduce further steps to strengthen the authentication process.

g Authentication

Candidates undergoing e-assessment may well be distance and/or open-learning students. You will have to introduce and maintain appropriate systems to establish and authenticate the candidate's identity, possibly by a combination of electronic and manual methods, and then have a system in place which will confirm this identity for each assessment event.

h Plagiarism

Access to electronic resources during an assessment event may result in plagiarism. You may have to consider a review of your plagiarism policy and the frequency with which you review it. The Open University website offers good guidance on dealing with plagiarism (please see Appendix One).

i Partnerships

Collaboration and partnerships are both valuable and desirable. The arrangements for External Moderation of e-assessment generated as a result of a collaboration agreement are the same as for any other assessment produced collaboratively.

j System access

There are various ways in which an External Moderator can gain access to your electronic systems to carry out e-moderation. These are:

- ◆ at your centre or approved satellite site
- ◆ from the moderator's home normally through web access
- ◆ from another mutually agreed location, normally through web access
- ◆ from SQA premises

You should ensure that you have well documented procedures detailing access arrangements for External Moderators. In the event that access by these methods

is not possible, existing traditional arrangements for External Moderation will be implemented.

k Data Protection Act and Freedom of Information Act

You may decide to implement a form of candidate passport to underpin assessment and result-recording processes. There are significant issues here for every centre to ensure compliance with the Data Protection Act (see www.hmso.gov.uk/acts/acts1998), Freedom of Information Act (see [wwwhmso.gov.uk.acts/acts2000/20000036.htm](http://www.hmso.gov.uk.acts/acts2000/20000036.htm)), and other legal considerations, such as intellectual property. You should therefore consider developing policies to ensure compliance.

A2 What you have to do before e-moderation

Figure 2 shows the relationship between the internal and external quality assurance processes. The area within the dotted line identifies your responsibilities as a centre, and clarifies the stages of assessment from which evidence is required for moderation.

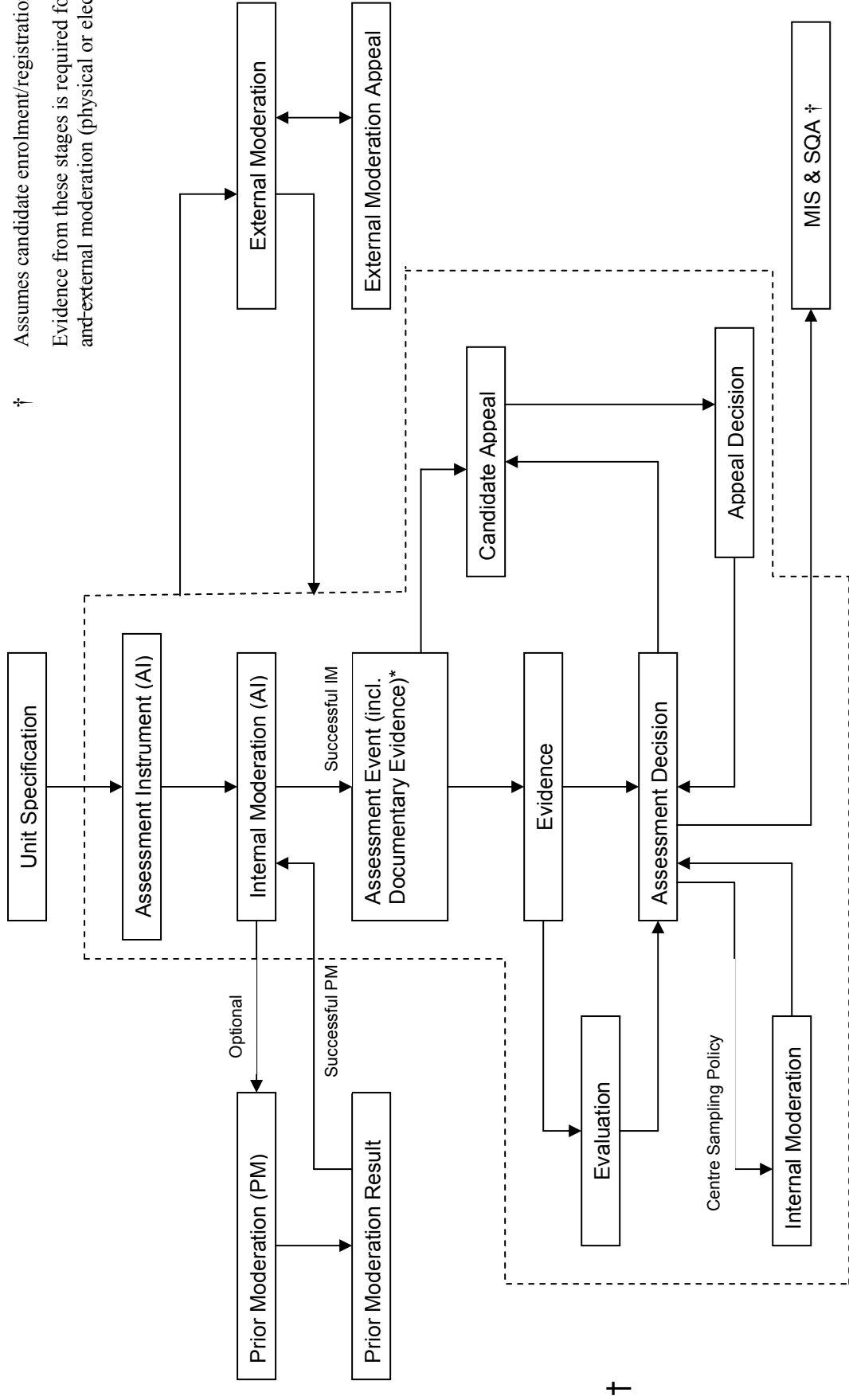
Documentary evidence relating to the assessment event can include, for example, an invigilation record for occasions where supervised closed-book assessment is required. Please see the evidence requirements section of individual Unit specifications for details of specific requirements. You must also ensure that your evidence bears the candidate's name, is appropriately dated and time stamped, and specifies the assessment location.

Detailed information relating to online assessment can be found in other SQA publications (see relevant SQA publications, some of which are listed in Appendix Two).

Figure 2 — Internal and External Quality Assurance Processes

Key

- * Evidence relates to assessment conditions (detailed in the Evidence Requirements section of Unit specifications)
- † Assumes candidate enrolment/registration complete



A2.1 Internal and prior moderation

If you intend to produce your own IA, it must match the Evidence Requirements within the Unit specification. After this has been internally moderated, you may submit this material to SQA for Prior Moderation. For details of the Prior Moderation service, please contact the Moderation Section at SQA.

A2.2 Specific issues for centres

Minimum requirements for documented procedures of the entire assessment process are outlined below.

A2.2a Pre-delivery

IAs, together with a detailed mapping of Unit requirements to the evidence, should be retained in line with your documented procedures. You will need procedures to ensure the security and integrity of all electronic versions of IAs and the associated information relating to the assessment event, and these must be incorporated within your centre's assessment policy.

You must have the following:

System requirements

- ◆ a secure server, and adequate recovery policy and procedures
- ◆ backup, archiving and maintenance procedures
- ◆ user profiles and access rights
- ◆ procedures for exceptional circumstances, including for example:
 - fire drill
 - power failure
 - complete system crash
 - individual computer breakdown
- ◆ where assessments are static, and all candidates are taking the same Unit assessment, you should have appropriate workstation layout, for example
 - partitions between each **OR**
 - a minimum distance of 1.25 metres between workstations (as recommended in BS7988) **OR** a minimum distance of 1 metre between workstations (as per British Computer Society requirements)
- ◆ procedure for disabling candidate access to other parts of the system for closed book assessments, for example intranet, internet and personal files
- ◆ procedure for disabling candidates' ability to print IAs and associated materials where Evidence Requirements and/or assessment conditions specifically disallow this

File and data storage

- ◆ A predetermined folder structure **and** tagging system for internal and external moderation for:
 - IAs, including identification of different versions
 - candidate evidence
 - candidate results, including identification of IA used

Instruments of Assessment (IA)

- ◆ A register (manual or electronic) detailing assessment conditions for each IA in order to ensure that, regardless of assessment location, candidates are treated fairly and assessment conditions are applied consistently. This is of particular importance with closed-book assessment. (Please refer to the final 2 bullet points in the **System requirements** section above).
- ◆ Assessments should allow candidates to backtrack and amend previously answered questions within the timescale detailed in the Unit specification.

Staff responsibilities

- ◆ The section above outlines procedures to be implemented by your centre. Within these generic procedures it is strongly recommended that responsibilities are explicitly allocated to named staff members. The list below offers guidance on some of the tasks to be considered:
 - storage, maintenance and security of data
 - administration, such as setting up groups for assessment events (including multiple groups at different locations, times and using different versions of the IA)
 - technical support requirements for traditional and for online assessment events

Other considerations include:

- ◆ alternative assessment arrangements (see *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* BA2399, September 2004)
- ◆ taking account of BS7988 Standard when designing e-assessments. This standard recommends that individuals should spend no longer than 1½ hours in front of a computer without a break. However cognisance must be taken of the duration specified within the assessment conditions of individual Unit specifications
- ◆ appropriate procedures to cover assessment on-demand (where applicable)

A2.2b Delivery

You must have the following:

Assessment event

- ◆ Where candidates are not known to your centre staff who are supervising the assessment event, procedures for candidate authentication must be employed, such as:
 - passport
 - driving licence with photograph
 - signature matched to bank or credit card.
 - Biometrics
 - usernames/passwords

System requirements

- ◆ The following must comply with your centre's procedure (see guidance in the Pre-delivery section above):
 - Workstation spacing, layout and division
 - Where IAs are closed book, access to other parts of the system must be disabled, for example intranet, Internet and personal files
 - Where assessment conditions dictate, the ability to print IAs and associated materials must be disabled

File and data storage

- ◆ The following must comply with your centre's file location procedures:
 - candidate evidence (suitably date and time stamped)
 - candidate results (including identification of IA used)

Instruments of Assessment (IA)

- ◆ The unique version of the IA (whether static or dynamic) must be tagged to candidate names together with the number of attempts by each candidate.
- ◆ Questions presented to candidates should be recorded along with candidate responses and should be retained as evidence. You will need to consider how this requirement will be met for dynamic IAs, for example, where:
 - for multiple choice questions, all questions are the same and stems appear in the same sequence while keys and distracters appear in a random sequence when presented to different candidates
 - questions are the same but stems, keys and distracters appear in a random sequence when presented to different candidates
- ◆ Questions differ (eg if they are drawn from an item bank).

Staff responsibilities

- ◆ For each e-assessment event, the date, time, location and invigilator's details should be recorded.
- ◆ Where systems provide immediate or automatic feedback on summative assessment performance to candidates, you may wish to specify (possibly in the student handbook, and reinforced by the invigilator and/or within the IA) that these results are **provisional** and subject to verification by internal and external moderation.

The principles of fairness and consistency of assessment must be adhered to. IAs which are delivered electronically should not disadvantage or advantage candidates. For example, assessments should be designed to allow candidates to backtrack and amend previously-answered questions within the timescale detailed in the Unit specification.

A2.2c Post-delivery to external moderation

You must have procedures for each of the activities listed below. These should not advantage/disadvantage any candidates over other methods employed by your centre:

- ◆ Tagging, to identify internally moderated evidence
- ◆ Recording results and confirming final decisions to candidates
- ◆ Reporting results to the centre MIS and SQA
- ◆ Access to evidence for internal/external moderation (either traditional or electronic)
- ◆ Candidate appeals (to cover assessment event appeals and assessment decision appeals)
- ◆ External moderation appeals
- ◆ Re-assessment

In the process of conducting an e-moderation event, internal and external moderators must satisfy themselves that the centre's systems are defined, implemented and operated in a robust and reliable manner so that candidates can produce appropriate evidence easily and consistently.

B Issues for Moderators

The first stage in the e-moderation process must be to ensure that the centre can provide simple and reliable access to the e-assessment systems employed. This must also include the ability to access centre systems as a candidate.

B1 Accessing the centre systems

E-moderation opens up a range of novel environments for moderation. These do not supplant the previous ones, but the introduction of e-moderation does mean that additional criteria are now necessary to ensure that quality assurance is sufficiently rigorous.

As a moderator you may now be asked to view candidate material and centre records using a computer. You will need to be confident that you have the appropriate access to the centre's systems, and that you are sufficiently comfortable with the technology to enable you to complete your tasks successfully.

E-moderation will make it possible for a centre to host an entirely remote e-moderation event. Access to the centre systems secure server would happen either directly via the centre's infrastructure or via the internet.

Alternatively, a centre visit could involve you being expected to monitor the conduct of activities such as automatic marking and resulting.

See section 3 of SQA's publication *SQA Guidelines on Online Assessment for Further Education* (AA1641, March 2003) for information on possible additional areas to be addressed during an e-moderation event.

E-moderation can be carried out in the following ways:

- ◆ access either at the centre, or an approved satellite site, to the centre's systems
- ◆ access to the centre's systems from the moderator's home location
- ◆ access to the centre's systems through the internet
- ◆ access to the centre's systems from a mutually-agreed location
- ◆ access to the centre's systems from SQA premises

Evidence to be reviewed during the e-moderation event will encompass **both complete or incomplete** evidence.

Access arrangements for the e-moderation event will be negotiated and finalised between the external moderator and the centre SQA Co-ordinator, prior to the actual event. Compliance with data protection issues will be of paramount importance.

B1.1 Preparation for the e-moderation event

At the time of arranging the visit, you must ensure that the centre will provide temporary access to their e-assessment and other systems for the duration of the e-moderation event. This access will need to be made available at a suitable level. For example, access may be required to Management Information Systems, VLE, results recording and reporting, and other e-assessment or marking tools.

Prior agreement will be required between you and the centre about the date and time of the visit, and the moderation groups to be moderated. Hardware and software compatibility implications would have to be resolved well in advance of the event. If this compatibility cannot be established, you should immediately contact SQA Moderation section for advice.

Materials to be sampled should be made available to you on a read-only basis. Moderators must also therefore respect the confidentiality and integrity of the materials they are sampling.

Appendix 1: Plagiarism policy — Open University

If a moderator is asked for guidance on plagiarism, please refer to the Open University website:

www3.open.ac.uk/our-student-policies/

Appendix 2: Further information

Many SQA publications are available from the website: www.sqa.org.uk or speak to our Customer Contact Centre on **0845 279 1000**.

To order, please quote the title and publication code of the publication you're interested in. Please note that there is a charge for some of these publications.

Orders must include an official order number. They can be submitted by e-mail to: customer@sqa.org.uk or, by fax, to: **0141-242 2244**.

SQA Guidelines on Online Assessment for Further Education
(AA1641, March 2003)

Assessment and Quality Assurance for Open and Distance Learning
(A1030, February 2001)

Guide to Assessment and Quality Assurance for Colleges of Further Education
(AA0841, September 2003)

Quality Assurance Principles, Elements and Criteria (A0798, December 1998)

Guide to Internal Moderation for SQA Centres (AA1453, December 2001)

Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs (BA2399, September 2004)

Handbook for Examiners 2003 (FA1819, March 2003)

The Appeals Process: a handbook for centres (AA0690/4, March 2004)

Moving Towards Computer Assisted Assessment (September 2003)

Review of Current Item Banking: SQA and beyond

PC Passport FAQs (September 2003)

e-Assessment FAQs (September 2003)

The following publications/reports are not produced by SQA

The Risks Associated with e-learning Investments — JISC, (April 2003)
www.jisc.ac.uk

Piloting Summative Web Assessments on Secondary Education (PASS-IT)
www.pass-it.org.uk

E-Learning Group Final Report (September 2003)
www.sfc.ac.uk

Centre for Interactive Assessment Development — General Information
www.derby.ac.uk/ciad

Item Construction — CIAD
www.derby.ac.uk/ciad

Good Question Design for Objective Testing
www.ltss.bris.ac.uk

A Step by Step Approach to Producing a CBA
www.derby.ac.uk/ciad

The Open University Policy on Plagiarism
www3.open.ac.uk/our-student-policies/

