

9. Annexes

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A1: Staffing requirements checklist

Print-ready version on the e-futures website: www.efutures.org.

E-assessment requires access to staff able to undertake the following range of functions, either individually or collectively. The numbers of staff available should be adequate for the anticipated volume of e-assessments and the number of learners involved, and there must be timely access to appropriate technical support.

This checklist can be used both for identification of appropriate staff (or access to these skills and knowledge) to cover the requirements of e-assessment, and for determining gaps in type and/or level of available expertise.

Note: Supporting information on the items listed can be found in section 2, 'Roles and responsibilities'.

| | |
|---|---|
| <p>Are named staff available for the following key roles? This may require negotiation with other departments or organisations.</p> <ul style="list-style-type: none"> ◆ management (overall strategy, policies and accountability for the e-assessment process) ◆ administration (responsibility for operational systems and processes) ◆ technical support (responsibility for the technology and/or access to appropriate external support) ◆ working with the learner (maximising the potential for success through the conduct of the e-assessment process) ◆ invigilation of e-testing sessions ◆ assessment of e-portfolios | <p>Name/contact details:</p> |
| <p>Are sufficient staff available to meet the predicted scale of e-assessments?</p> <p>Consider whether designated staff have the knowledge/skills for the related responsibilities, for example:</p> <ul style="list-style-type: none"> ◆ generic assessment knowledge and skills (related to points above) ◆ e-testing specific knowledge and skills ◆ e-portfolio specific knowledge and skills | <p>Yes/No</p> |
| <p>Gaps in available expertise identified (including back-up plans, for example if key staff leave or are unavailable):</p> | <p>Planned solutions, eg training:</p> |

A2: E-testing role matrix

Print-ready version on the efutures website: www.efutures.org.

This matrix makes a distinction between roles and people in the provision of e-testing, in order to recognise that a range of operational models is likely to exist within different organisations. It details the responsibilities inherent within each role, indicating the type and scale of activity to be undertaken, regardless of whether these are covered by one or more than one person within the organisation.

These roles and responsibilities match the recommended processes in the guide, and are reflected in the design and content of the relevant LLUK approved units for people involved in the delivery of e-assessment. A copy of these units can be found in section 6.

Each section of the matrix is headed by cross-references to relevant sections of the guide.

The references to learning outcomes and assessment criteria within the units appear in brackets at the end of entries for each role:

- ◆ 'LO' refers to learning outcome in the unit
- ◆ 'Criteria' refers to the assessment criteria in the unit

Note: The roles and responsibilities covered in this matrix also assume that a senior manager within the organisation will be responsible for the development of an e-assessment strategy, and accountable for the successful implementation of the strategy.

Key areas of responsibility

(see section 2)

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|---|--|---|---|--|
| <p>Implementation of the overall strategy and policies, with accountability for the operational running of the e-testing process within the centre(s) [LO 1]</p> <p>Working with senior management to ensure that sufficient and appropriate equipment and resources are available for e-testing to be effectively managed and conducted [LO 2]</p> <p>Assessment, monitoring and control of critical success factors related to running e-test sessions [LO 3]</p> | <p>Operational responsibility for setting up and maintaining designated aspects of the e-testing process, including problem resolution and checks to ensure that processes are followed [LO 1]</p> <p>Setting up the e-testing environment, and working effectively with learners and other staff connected with the e-testing process to ensure that it meets quality, e-test and learner requirements [LO 2, LO 3]</p> <p>In conjunction with other staff, assisting learners in their preparation for participating in an e-test [LO 4]</p> | <p>Operational responsibility for technical aspects of the e-testing process [LO 1]</p> <p>Providing technical support for setting up the e-test location, both at the centre and remotely, including the identification and use of appropriate equipment and applications to meet specific e-test and learner needs [LO 2]</p> <p>Ensuring that the environment and equipment is working correctly for e-test sessions, and providing timely technical support and first line problem resolution to staff, invigilators and learners as appropriate [LO 3]</p> <p>Evaluation of own role and performance in the e-testing process [LO 4]</p> | <p>Understanding the processes that are in place to prepare learners for e-testing [LO 1]</p> <p>Understanding the e-testing environment and equipment and how it can be adapted to meet learner needs [LO 2]</p> <p>Understanding what e-testing opportunities and support are available to learners, and identifying any specific needs to ensure that they are not disadvantaged by the e-testing process [LO 3]</p> <p>Using practice sessions to build learner readiness to take e-tests [LO 4]</p> <p>Ensuring learners are kept informed of relevant centre processes and e-testing regulations [LO 5]</p> | <p>Understanding of the quality standards and requirements of the awarding body for an approved e-testing environment [LO 1]</p> <p>Ensuring provision of appropriate support to learners during the e-test [LO 2]</p> <p>Invigilation of e-test sessions according to the requirements of the relevant awarding body [LO 3, LO 4]</p> |

| | | | | |
|--|--|--|---|--|
| <p>Allocation of staff to specific roles and responsibilities, and ensuring that these are understood by all staff; monitoring of the performance of staff involved in the e-testing process; and identification of staff development needs in relation to the e-testing process [LO 4]</p> <p>Evaluation of own and others' roles and performance in the e-testing process [LO 4]</p> | <p>Running e-test sessions, assisting invigilators and learners as appropriate, and liaising with other staff as required [LO 5, LO 6]</p> <p>Evaluation of own role and performance in the e-testing process [LO 7]</p> | | <p>Evaluation of own role and performance in the e-testing process [LO 6]</p> | |
|--|--|--|---|--|

Generic tasks and responsibilities

(see section 2 and annexes A1, A2, A3, A4 and A5)

E-testing processes and procedures

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|---|--|---|--|--|
| <p>Agree operational processes and procedures with senior management to enable e-testing to be conducted to specified quality standards</p> <p>Implement agreed processes and procedures with other staff involved in the delivery of e-testing</p> <p>Identify critical success factors, and ensure that appropriate processes and measures are in place to enable these to be monitored and achieved, and any issues resolved in a timely fashion</p> <p>[Criteria: 1.1–1.3, 3.1–3.3]</p> | <p>Set up and maintain agreed operational processes and procedures to ensure that e-testing is conducted to specified quality standards</p> <p>[Criteria: 1.1–1.4, 3.2, 5.3, 5.4, 5.6]</p> | <p>Provide technical support for e-testing in line with processes set up at the centre, and taking account of awarding body requirements, agreed quality standards and learner needs</p> <p>[Criteria: 1.1–1.3]</p> | <p>Ensure own and learners' familiarity with the procedures and regulations for e-testing, and the technology and support available</p> <p>[Criteria: 1.1–1.4]</p> | <p>Check that learners are familiar with the procedures and regulations for the e-test, and have access to appropriate technical and other support</p> <p>[Criteria: 1.1, 3.6]</p> |

Liaison

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|---|---|---|--|--|
| <p>Liaise with awarding body and technical supplier, and with other staff to ensure that the centre continues to meet requirements for e-testing</p> <p>[Criterion 1.6]</p> | <p>Liaise with awarding body and other staff as required within the role</p> <p>Support other staff in the delivery of an effective service to learners</p> <p>[Criteria: 2.4, 3.3, 3.4, 5.5]</p> | <p>Liaise with awarding body and/or technical supplier's help desk as required, in order to provide technical help and troubleshooting</p> <p>Support other staff in the delivery of an effective service to learners</p> <p>[Criteria: 2.1–2.4, 3.4]</p> | <p>Liaise with other staff to ensure suitable opportunities and support are identified and provided for learners, and resolve/escalate issues that arise</p> <p>Support other staff as required, in order to provide an effective service to learners</p> <p>[Criteria: 1.2, 1.4, 3.4]</p> | <p>Liaise with awarding body and other staff as required, to ensure that e-test sessions are conducted effectively</p> <p>[Criteria: 1.1, 3.6, 4.3, 4.6]</p> |

Resources

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|---|--|--|--|---|
| <p>Ensure availability of appropriately trained staff at each stage of the e-testing process, including timely access to appropriate technical support</p> <p>Work with senior management to agree required resources, and ensure that these are available and kept in good working order to meet e-testing needs</p> <p>Identify and allocate staff to specific roles and responsibilities, and ensure that these are understood by all staff; have a working understanding of what is involved in each role and any likely key issues</p> <p>Ensure availability of appropriately trained staff at each stage of the e-testing process</p> <p>[Criteria: 2.1–2.5]</p> | <p>Ensure that appropriate resources are made available in a timely fashion for learners undertaking e-testing, including any special requirements</p> <p>[Criteria: 2.4, 3.1–3.4, 4.4, 5.1]</p> | <p>Identify the appropriate hardware and software required to enable the centre to deliver the volume and type of e-testing being conducted</p> <p>Maintain the equipment in good working order</p> <p>[Criteria: 1.2, 2.1–2.4, 3.1]</p> | <p>Ensure that appropriate facilities, equipment and resources are made available for learners undertaking e-testing</p> <p>[Criteria: 1.2, 2.2–2.4]</p> | <p>Verify that the e-testing location and equipment meets the required assessment conditions and specific requirements of learners</p> <p>[Criteria: 1.1, 2.1, 3.5]</p> |

Problem solving

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|--|---|---|--|---|
| <p>Ensure that agreed processes are followed and resolve any issues in conjunction with awarding bodies, technical suppliers and other staff as required</p> <p>[Criteria: 1.4, 3.3]</p> | <p>Deliver first line resolution of administrative issues related to the e-testing process. Report and/or escalate issues as necessary</p> <p>[Criteria: 1.4, 2.2, 3.4]</p> | <p>Deliver first line technical problem resolution, and report and/or escalate issues as necessary</p> <p>[Criteria: 1.3, 2.3, 3.1, 3.3e]</p> | <p>Resolve and/or escalate any issues that arise, liaising with other staff as appropriate</p> <p>[Criteria: 1.4, 3.4]</p> | <p>Raise any issues arising from checks made related to the e-test (for example the environment and assistive technology), and ensure that these are resolved and/or escalated as appropriate</p> <p>Report and document any emergencies, technical failures and irregularities, and ensure that these are resolved appropriately for the candidate</p> <p>[Criteria: 1.1, 3.5]</p> |

Learner support

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|--|---|---|--|---|
| <p>Ensure that all staff are aware of their responsibilities related to learner support and e-testing and are providing appropriate assistance to learners</p> <p>[Criterion: 2.3]</p> | <p>In conjunction with other staff, ensure that learners have access to the appropriate information, support and resources to ensure that they are not disadvantaged by the e-testing process</p> <p>[Criteria: 2.2, 2.3, 3.2, 4.1–4.5, 5.2, 5.5]</p> | <p>Assist other staff in identifying the appropriate equipment and/or applications required to meet specific requirements of learners and tests</p> <p>Provide technical support to learners as required</p> <p>[Criteria: 2.1, 2.2, 3.2]</p> | <p>Provide learners with information and guidance relating to e-testing, including identifying suitable e-testing opportunities related to units and qualifications that meet their needs</p> <p>Ensure that learners have access to appropriate technical and other support, liaising with other staff as appropriate</p> <p>Ensure that learners know how to use any equipment or assistive technology</p> <p>[Criteria: 1.2, 2.4, 3.3, 4.2, 5.1, 5.2]</p> | <p>Ensure that candidates have been provided with any required assistive technology</p> <p>Ensure that support is given to candidates in line with e-test regulations</p> <p>[Criteria: 2.1, 2.2]</p> |

Staff development/skills

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|---|--|--|--|---|
| <p>Understand the roles required for consistent, reliable delivery of the e-testing process</p> <p>Ensure that all roles are covered by designated staff Monitor effectiveness of individuals involved in the e-testing process</p> <p>Identify and resolve any issues, and provide or arrange for appropriate staff development to ensure capability to support the effective performance of roles within the e-testing process</p> <p>Evaluate own effectiveness in the role, and identify any training and development needs</p> <p>[Criteria: 2.1, 2.3, 4.1–4.3, 5.1–5.3]</p> | <p>Keep up to date with the centre’s processes and procedures related to e-testing Perform agreed role and tasks in a timely fashion and to agreed quality standards</p> <p>Evaluate own effectiveness in the role, and identify any training and development needs</p> <p>[Criteria: 7.1–7.3]</p> | <p>Keep up to date with technical and general processes and procedures related to e-testing</p> <p>Perform agreed role and tasks in a timely fashion and to agreed quality standards</p> <p>Evaluate own effectiveness in the role, and identify any training and development needs</p> <p>[Criteria: 4.1–4.3]</p> | <p>Keep up to date with e-testing processes and requirements as they relate to the learner</p> <p>Evaluate own effectiveness in the role, and identify any training and development needs</p> <p>[Criteria: 6.1–6.3]</p> | <p>Keep up to date with centre processes relevant to the invigilation of e-tests and with awarding bodies’ requirements related to e-testing</p> <p>Maintain a general understanding of the assistive technology approved by awarding bodies</p> <p>[Criteria: 1.1, 2.1, 2.2, 3.1, 3.3, 3.4, 4.4]</p> |

Tasks related to the e-testing environment (see section 3.3, and annexes A4 and A5)

General environment

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|--|---|---|---|---|
| <p>Ensure that the general environment, facilities and equipment meet the criteria required for e-testing and that staff are aware of these</p> <p>[Criteria: 1.5, 2.1, 2.2, 2.4, 2.5]</p> | <p>Understand the general criteria for an e-testing environment and facilities, and make checks to ensure readiness prior to an e-testing session</p> <p>[Criteria: 2.1, 2.2]</p> | <p>Understand the general criteria for an e-testing environment and facilities</p> <p>Assist other staff to ensure readiness of the e-testing location and equipment prior to an e-testing session</p> <p>[Criteria: 2.1–2.4]</p> | <p>Understand the general criteria for an e-testing environment and facilities, and how this can be optimised to meet learner requirements</p> <p>[Criteria: 2.1–2.4]</p> | <p>Check that the e-test location meets the criteria required for e-testing prior to starting the test, and raise any issues with appropriate staff</p> <p>[Criterion: 1.1]</p> |

E-testing equipment

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|--|---|--|--|---|
| <p>Ensure that the centre has the right equipment to meet the criteria for an e-test centre, and that staff maintain the equipment so that it is available when required for a specific session</p> <p>[Criteria: 2.1–2.5]</p> | <p>Work with technical staff to identify what equipment is required for a specific e-test and learners, and to ensure that this is in place and working prior to the start of the e-test session</p> <p>[Criteria: 2.3, 2.4, 3.2–3.4]</p> | <p>Know what equipment the centre has, and ensure that it meets the criteria for an e-test centre, and is kept in good working order</p> <p>Liaise with admin staff to determine what equipment is required for a specific e-test or learner and ensure that this is in place prior to the start of the e-test session</p> <p>[Criteria: 1.2, 2.1–2.4]</p> | <p>Determine what equipment learners require for a specific e-test and whether they have any individual needs related to assistive technology</p> <p>Liaise with technical staff to ensure that equipment is in place and working prior to the start of the e-test session</p> <p>[Criteria: 2.4, 3.4]</p> | <p>Check that learners have the appropriate equipment for the e-test as well as any specific assistive technology</p> <p>[Criterion: 1.1]</p> |

Additional facilities and areas

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|--|--|---|---|---|
| <p>Ensure that the centre has the required additional facilities and areas, and that these are available if the need arises</p> <p>[Criteria: 2.1, 2.2, 2.5]</p> | <p>Know the criteria for when additional facilities and e-test areas are required, and liaise as appropriate to ensure that these are set up and available if the need arises</p> <p>[Criteria: 3.1–3.4]</p> | <p>Assist other staff to identify when additional facilities and e-test areas are required, and set up if the need arises</p> <p>[Criterion: 2.2]</p> | <p>Know the criteria for when additional facilities and e-test areas may be required for learners, and liaise as appropriate to ensure that these are set up and available if the need arises</p> <p>[Criteria: 2.1–2.4, 3.4]</p> | <p>Check that any additional facilities or areas required for a specific test are available</p> <p>[Criterion: 1.1]</p> |

Security

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|---|--|--|--|--|
| <p>Ensure that security arrangements and procedures related to the layout of the room, e-test content and candidate details are understood and adhered to</p> <p>[Criteria: 1.5, 2.1–2.5]</p> | <p>Ensure that positioning of workstations and invigilator's desk facilitates detection of any unauthorised activity</p> <p>Ensure that there are appropriate arrangements in place for keeping e-test content and candidate details secure</p> <p>[Criteria: 2.1, 5.3, 6.1]</p> | <p>Ensure that any security arrangements and procedures that involve the technology or equipment are adhered to</p> <p>[Criteria: 1.1, 2.4, 3.1]</p> | <p>Ensure that learners are aware of any security arrangements and procedures that apply to them</p> <p>[Criteria: 5.1, 5.2]</p> | <p>Understand the awarding body regulations relating to the secure conduct of e-test sessions</p> <p>Ensure that there is no unauthorised communication between candidates or access to unauthorised information</p> <p>Criteria: 3.1, 3.4, 4.6]</p> |

Process-related tasks and responsibilities

(see section 3 and annexes A3, A4 and A5)

E-testing processes and procedures

(see section 3.4)

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|--|--|--|--|-------------------|
| <p>Ensure that processes are in place and understood/followed by staff</p> <p>[Criterion: 1.3]</p> | <p>Identify/explain appropriate assessment opportunities for learners (including e-testing)</p> <p>Register learners with the appropriate awarding body</p> <p>Explain to learners what support is available at each stage of the assessment process, and identify any additional candidate needs</p> <p>Ensure that the e-testing location and equipment are prepared prior to the e-testing session</p> <p>Set up and run practice e-test sessions as required</p> <p>[Criteria: 1.4, 4.1–4.5]</p> | <p>Check and maintain hardware, software and communications equipment to ensure their capability to deliver a technically sound e-testing process</p> <p>Ensure that any required assistive technology, additional equipment and facilities are available and in working order prior to the start of e-testing sessions</p> <p>Check security features of the specific e-test</p> <p>Assist non-technical staff to ensure that the e-test location, equipment and materials are set up correctly</p> <p>[Criteria: 2.1–2.4, 3.1]</p> | <p>Assist learners in identifying any specific needs they may have, and ensure that they are provided with any appropriate assistive technology, and that they know how to use it</p> <p>Ensure that learners are at an adequate stage of readiness before they are entered for any e-test, unit or qualification</p> <p>Support learners in undertaking practice assessments in order to become familiar with the technology and applications to be used</p> <p>[Criteria: 3.1–3.4, 4.1, 4.2]</p> | |

Running e-test sessions

(see section 3.5)

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|--|--|---|---|---|
| <p>Ensure that processes are in place and understood/followed by staff</p> <p>[Criterion: 1.3]</p> | <p>Conduct final checks to ensure that the e-test location meets the required assessment conditions</p> <p>Ensure that all candidates have been registered and authenticated</p> <p>Check that any test-specific instructions have been followed</p> <p>Check that agreed assistive technology is in place</p> <p>Ensure that individual logon passwords for the candidate(s) have been obtained</p> <p>Ensure that any issues are resolved, working with other staff and bodies where necessary</p> <p>[Criteria: 1.4, 5.1–5.4]</p> | <p>Make final checks that the equipment needed for the e-test session is in place and meets the required assessment conditions, and e-test and learner requirements</p> <p>Provide technical advice and assistance, and resolve and/or escalate any technical issues that arise during the e-test session, working with other staff and bodies where necessary</p> <p>Working with other staff, awarding bodies and technical suppliers as necessary, ensure that any emergencies, technical failures and irregularities are dealt with appropriately, logged and reported</p> <p>[Criteria: 3.2–3.4]</p> | <p>Ensure that learners understand the regulations and procedures related to the conduct of e-tests</p> <p>[Criteria: 5.1, 5.2]</p> | <p>Conduct checks to ensure that the e-test location, equipment (including assistive technology) and materials have been set up correctly</p> <p>Check that candidates have been authenticated to take the e-test</p> <p>[Criteria: 1.1, 3.2]</p> |

Invigilation — running the e-test session

(see section 3.5)

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|--|---|---|----------------------|---|
| <p>Ensure that processes are in place and understood/followed by staff</p> <p>Ensure that all staff are aware of their role in supporting learners and the invigilator in the effective running of e-test sessions</p> <p>Ensure that all staff are aware of the measures that need to be taken related to emergencies, technical failures and irregularities</p> <p>[Criteria: 1.3, 3.3, 3.4]</p> | <p>Support the invigilator and candidates as appropriate during the e-test session</p> <p>Ensure that any breaks are carried out safely and securely</p> <p>Working with other staff and awarding bodies as necessary, ensure that any emergencies, technical failures and irregularities are dealt with appropriately, logged and reported</p> <p>Close the e-test session in accordance with approved procedures</p> <p>[Criteria: 5.3, 5.5, 5.6]</p> | <p>Support other staff, invigilators and candidates appropriately during the e-test session</p> <p>Assist the closing of the e-test session if required, in accordance with approved procedures</p> <p>[Criteria: 3.2, 3.5]</p> | | <p>Log on candidates and unlock the e-test</p> <p>Invigilate the e-test session according to the requirements of the awarding body</p> <p>Ensure that appropriate support is provided to candidates (if required)</p> <p>Ensure that any breaks are carried out safely and securely</p> <p>Ensure that any emergencies, technical failures and irregularities are dealt with appropriately, logged and reported</p> <p>Ensure that any other issues are resolved and/or escalated appropriately, including notification of the awarding body</p> <p>Supervise the logging-off/closing of the session in accordance with approved safety and security procedures</p> <p>[Criteria: 3.3–3.5, 4.3–4.6]</p> |

After the e-test session

(see section 3.6)

| Co-ordination role | Administration role | Technical role | Learner support role | Invigilation role |
|--|---|----------------|--|---|
| <p>Ensure that processes are in place and understood/followed by staff</p> <p>[Criterion: 1.3]</p> | <p>Transmit candidate details and responses in line with awarding body requirements</p> <p>Assist other staff by providing feedback on a specific e-test if required</p> <p>Ensure that any awarding body certificates are obtained</p> <p>[Criteria: 6.1, 6.2]</p> | | <p>Provide timely and supportive feedback to candidates as required</p> <p>Ensure that candidates understand the process for obtaining awarding body certification, where relevant</p> <p>[Criteria: 4.3, 5.3]</p> | <p>Report any issues arising from the e-test session as appropriate</p> <p>[Criteria: 3.3, 3.5]</p> |

A3: Process checklists

See related sections of the guide for further information on individual items. A print-ready version can be found at the efutures website: www.efutures.org.

Preparing for e-testing

(see section 3.4)

Registering with an awarding body (administrator)

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|---|-----------|-----------|--------------|
| Explain what support will be available to learners at each stage of the e-testing process. | | | |
| Explain the specific e-testing options available. | | | |
| Help the learners to select the appropriate option(s) to meet their needs. | | | |
| Register the learner with the relevant awarding body and enter them for assessment for the particular qualification or unit selected (in accordance with the specific requirements and arrangements defined by the relevant awarding body). | | | |
| Schedule the learner to take their e-test on a date that meets their own, the centre's and the awarding body's requirements. | | | |
| Signature of administrator: | | | |
| Signature of supervisor/manager: | | | |

E-test location and equipment preparation (technical support)

Note: Preparation of the room and equipment prior to the e-testing session should be carried out well before candidates are due to arrive, and should include the following checks:

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|---|-----------|-----------|--------------|
| Check that all necessary computers and peripherals (including spares, if available) are in working order. | | | |
| Check that the centre's server and connections (including communications links) meet the requirements of the e-test. | | | |
| Verify that computer date and time are correct. | | | |
| Load any specific e-test software, together with any other required software. | | | |
| Check that the assessment software works correctly on all the equipment to be used for the assessment, using material supplied by the awarding body. | | | |
| If necessary, configure software to the requirements of the specific e-test, or check the configuration; this may, for example, involve disabling help screens and spell-checks. | | | |
| Check, if practicable, that e-test software and storage of results are working correctly. | | | |
| Where feasible and required, disable access to any unauthorised software which could threaten test security, for example web access or e-mail. | | | |
| Check any fail-safe features that have been used in the assessment, for instance to prevent the candidate quitting the test by accident. | | | |
| Check what access the assessment allows to on-screen data and aids, such as calculators, and that these are available/working. | | | |
| Check that any additional equipment or facilities required (either by the assessment or by the candidate) are available and work with the assessment software and centre equipment. | | | |
| Signature of technical support staff: | | | |
| Signature of supervisor/manager: | | | |

Materials preparation (administrator/technical support)

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|--|-----------|-----------|--------------|
| Log on or start the e-test (and know how to end the test). | | | |
| Verify that it is the correct e-test and that it is the most up-to-date version of the e-test, if necessary. | | | |
| Know how the particular e-test operates, in order to recognise any problems that arise, and know how to deal with them. | | | |
| If necessary, configure software to the requirements of the specific e-test, or check the configuration; this may, for example, involve disabling help screens and spell-checks. | | | |
| Ensure that any necessary additional materials (such as calculators) and paper for rough notes, if permitted, are available if they are to be provided by the centre. | | | |
| Check the awarding body's procedures for safeguarding the security of assessment content during transmission, and the centre's involvement in that process. | | | |
| Signature of administrator: | | | |
| Signature of technical support staff: | | | |
| Signature of supervisor/manager: | | | |

Preparing learners for e-testing/running a practice e-test session (administrator/learner support)

Note: It is essential that staff can answer questions around navigation and types of question used within e-tests, in order to help prepare candidates for taking a formal e-test. They may also need to answer navigation questions during the actual e-test.

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|---|-----------|-----------|--------------|
| Offer at least one practice e-test linked to the qualification or unit the learner is undertaking. Note: Practice material similar to the actual e-test should be provided, and should be made available in the appropriate format (for example via the internet or on disk) and taking into account any specific needs of the learner. | | | |
| Explain the purpose of a practice e-test and give appropriate explanation and support to learners in using these practice materials (both before and during the session if necessary), in order to help them prepare for formal assessment. | | | |
| Draw attention to the help and fail-safe features of the e-test. | | | |
| Show learners all the relevant features in the e-test, giving them an opportunity to become familiar with navigation. | | | |
| Explain any data protection or waivers and rules of conduct that the candidate may have to agree to. | | | |
| Show all item types used in the actual test. | | | |
| Show a sample of items similar in content, style and difficulty to those used in the actual test (not necessarily a full scale mock test). | | | |
| Show a sample of results and/or feedback. | | | |

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|--|-----------|-----------|--------------|
| Give feedback on the results of any practice e-test, together with advice and guidance on readiness to go on to formal assessment. | | | |
| Give additional practice opportunities if necessary. | | | |
| Provide additional support in the use of e-tests if this would be beneficial. | | | |
| Give learners the following information and guidance in advance of taking an e-test: <ul style="list-style-type: none"> ◆ any requirements to bring proof of identity with them when they come to take the e-test ◆ any general centre procedures related to the e-test session that may affect the learner ◆ any specific security features of the assessment that the learner needs to know ◆ how to use any additional equipment and/or assistive technology | | | |
| Make learners aware of the following: <ul style="list-style-type: none"> ◆ how the assessment will be conducted ◆ any invigilation rules and regulations they need to understand, including the procedure for supervising any breaks ◆ when and how they should ask for assistance during the e-test ◆ how the e-test will be scored (at least in general terms) ◆ any relevant best practice in relation to completing the test, for example not spending too long on any one question, and attempting all questions | | | |
| Signature of administrator: | | | |
| Signatures of technical support staff: | | | |
| Signature of supervisor/manager: | | | |

Running the e-test session

(see section 3.5)

Final checks related to location, equipment and materials (technical support/administrator)

Note: Centres must comply with health and safety requirements, and the requirements of the regulatory authorities, awarding bodies and e-test suppliers, and safeguard the confidentiality of any personal data, including information relating to health and disability.

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|--|-----------|-----------|--------------|
| Check that the e-test location and equipment meet the required assessment conditions. | | | |
| Check that all candidates have been registered correctly. | | | |
| Check that any test-specific instructions (for example provided by the relevant awarding body) have been followed. | | | |
| Check that any agreed assistive technology is in place. | | | |
| Check that any issues identified have been resolved. | | | |
| Check that any individual logon passwords for the candidate(s) have been obtained — these may be supplied either by the awarding body or the e-test distributor. | | | |
| Signature of technical support staff: | | | |
| Signature of administrator: | | | |
| Signature of supervisor/manager: | | | |

Authentication confidentiality (administrator)

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|--|-----------|-----------|--------------|
| Check that candidates have been identified/authenticated according to centre regulations as agreed with the awarding body. | | | |
| Check that a seating plan has been made (if required by the awarding body), linking candidates' personal data to a specific workstation. | | | |
| Check that records of attendance have been completed and processed according to awarding body requirements. | | | |
| Check that candidates have been asked to sign a confidential disclosure agreement (if required by the awarding body). | | | |
| Check that there are processes in place to ensure that confidentiality of the candidate data is maintained. | | | |
| Signature of administrator: | | | |
| Signature of supervisor/manager: | | | |

Final checks related to the candidate (administrator/invigilator)

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|--|-----------|-----------|--------------|
| Check that candidates are comfortably seated (in the designated places on the seating plan, if there is one) with access to any agreed assistive technology if relevant. | | | |
| Check that candidates are familiar with the e-test instructions, procedures and regulations, including how to navigate and answer items. | | | |
| Inform candidates of any time limit and how the e-test will be terminated. | | | |
| Ensure that candidates know how to request technical or emergency assistance. | | | |
| Check that candidates have logged on successfully (or been logged on by the centre). | | | |
| Signature of administrator: | | | |
| Signature of invigilator: | | | |
| Signature of supervisor/manager: | | | |

Planned and unplanned breaks (administrator/invigilator)

Note: For e-tests longer than 1.5 hours and where the candidates work entirely or almost entirely at the screen, there should be provision for them to take a break. This extended time should be known and approved in advance by the awarding body. Candidates may also be allowed an extended test time due to a disability. In certain instances awarding bodies may permit an extension of this time limit for particular qualifications.

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|--|-----------|-----------|--------------|
| Check that there are measures to ensure that there is no unauthorised access to the e-test during any break. | | | |
| If there is a break, ensure that the invigilator has controlled access to the e-test after the break and controls the restart in the same way as at the start of the test. | | | |
| If there is a break, check that candidates can re-access their previous responses where this is technically feasible and permitted by the regulations. | | | |
| Signature of administrator: | | | |
| Signature of invigilator: | | | |
| Signature of supervisor/manager: | | | |

Invigilating the e-test session (invigilator/technical support)

Note: Unless specifically permitted by the regulations, candidates should not be given any help in understanding or answering e-test items, but can and should be given technical support if necessary.

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|---|-----------|-----------|--------------|
| Ensure that candidates have an opportunity to read the initial instructions and information relating to the test (before any timing of the session starts). | | | |
| If there is an option to revert to paper-based testing, explain the conditions relating to this to the candidate. | | | |
| Ensure that at least one invigilator is present in the room or able to monitor all the candidates throughout the e-test session. Note: In certain instances awarding bodies may set requirements for a specific ratio of candidates to invigilator. | | | |
| Ensure that candidates' screens are observed by patrolling the room and that general assessment regulations are observed. | | | |
| Ensure that candidates do not have access to outside information. | | | |
| Check that technical support in relation to navigation and usage is available throughout the e-test. | | | |
| Check what processes are in place regarding access to technical help to resolve issues related to malfunction of equipment, software or the e-test itself. Note: There should be the potential to rebook the session if this option is the least disruptive to the candidate. | | | |

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|---|-----------|-----------|--------------|
| Check that any other assistance to candidates is available throughout the e-test session in accordance with the regulations for the e-test. | | | |
| At the conclusion of the e-test, check that any necessary back-ups are made and stored securely. | | | |
| Ensure that no unauthorised materials (for example printouts) are taken from the e-testing location by candidates. | | | |
| Name and signature of invigilator: | | | |
| Signature of supervisor/manager: | | | |

Emergencies, technical failures and irregularities (invigilator)

Note: Invigilators should log all technical failures, delays and candidate complaints in case of appeal.

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|---|-----------|-----------|--------------|
| Check the procedures for dealing with hardware, software and communication failures. | | | |
| Record and report any candidate complaints of system delays or other unusual occurrences. | | | |
| If there are any situations where the candidate is thought to have cheated, follow the formalised processes for reporting to avoid conflict. Note: All automated test results are only provisional, to allow for any investigation. | | | |
| Signature of invigilator: | | | |
| Signature of supervisor/manager: | | | |

Concluding the e-test session (administrator/technical support)

Note: It may be necessary for centre staff to check with candidates to confirm formally that they have completed the e-test and are ready to have their responses submitted, particularly if some items remain unanswered.

| Checklist | Yes/No/NA | Role/Name | Date/Comment |
|--|-----------|-----------|--------------|
| Close the e-test software as required (some may close automatically). | | | |
| Make any necessary back-ups and store them securely, to meet awarding body requirements. | | | |
| Ensure that no unauthorised materials (for example printouts) are taken from the e-testing location by candidates. | | | |
| Signature of administrator: | | | |
| Signature of supervisor/manager: | | | |

A4: Technical information/support

Note: In addition to IT-specific recommendations, centres need to conform to the general requirements of awarding bodies and with health and safety requirements, and safeguard the confidentiality of candidates' personal data, including information relating to health and disability.

Emergencies

- ◆ The centre should have procedures in place for dealing with emergencies (such as fire alarms and bomb scares). These should include provision to:
 - safeguard the security of assessment content and responses (for example, by locking an assessment room which has been evacuated without closing down software)
 - minimise opportunities for collusion between candidates or communication with others during interruptions to an assessment
 - ensure that candidates have the full working time for the assessment
 - safeguard access to the server room if applicable
- ◆ Procedures for dealing with hardware, software and communication failures (which may affect individual workstations or the whole network) should normally allow the candidate(s) to continue the assessment session at a different workstation or at a later time, if necessary, without loss of working time.
- ◆ In extreme cases it may be preferable to provide a paper-based assessment, and the conditions/procedure for this should be agreed in advance with the awarding body.
- ◆ Where appropriate, the invigilator may be able to opt to extend the time limit (if any) to compensate for delays. This must be agreed with the appropriate awarding body, as it is not a valid option for some assessments.
- ◆ All emergencies, technical failures and irregularities, including system delays, should be recorded, together with the action taken.
- ◆ All technical failures and delays and any candidate complaints of this nature that could form the basis of an appeal should be logged and reported.
- ◆ The centre should attempt to resolve any difficulties that occur. However, if an issue cannot be resolved locally, or is the subject of an appeal, it should be referred to the awarding body.

First line troubleshooting

- ◆ Centre staff should be able to perform initial troubleshooting should problems occur. However, if it is not possible to resolve the problem internally, or a quick solution is needed (particularly if the e-test session

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is under way), the centre should contact the appropriate specialist help (see ‘Specialist technical support’, below).

- ◆ To minimise disruptions due to technical failures, the centre should give due consideration to:
 - maintenance of hardware
 - provision of spare workstations and/or easily replaced items
 - a back-up server, if applicable

Specialist technical support

- ◆ Technical help should be available for centres, both for initial setting up of assessment software (if needed) and during e-test sessions. Information should include helpline numbers and troubleshooting hints.
- ◆ The centre should check with the awarding body who to contact for technical assistance, and ensure that staff have access to helpline numbers.
- ◆ The centre manager should ensure that relevant staff understand any troubleshooting hints that have been provided.

Technical specification: delivery platforms

Exact technical specifications may vary from one awarding body to another, and e-assessment centres should check their suitability to offer e-tests. These technical specifications will include requirements such as:

- ◆ minimum hardware, including network and peripherals
- ◆ keyboard (for example UK, US)
- ◆ screen resolution and colour depth
- ◆ operating system(s), including the range of acceptable version numbers
- ◆ language of the operating system (for example English, French). This could affect, for example, the display of dates and of numbers using decimal points and number of bits for character codes
- ◆ any software required in addition to the e-assessment software (for example browser software, plug-ins and specific fonts), including software versions where applicable
- ◆ communication links
- ◆ assistive technology to which the e-assessment software may link (including any particular settings or hardware inclusions)

Technical support checklist

| Summary of technical requirements | Yes/No | Comment/Issues |
|--|--------|----------------|
| The centre has procedures in place for dealing with emergencies, technical irregularities and delays. | | |
| Technical support meets the following requirements: <ul style="list-style-type: none"> ◆ Technical support staff have been trained as required by the awarding body's requirements. ◆ Trained support staff are available for setting up assessment software and downloading/checking e-assessment materials. ◆ Trained support staff are available for e-assessment sessions. ◆ Trained support staff are available to perform initial troubleshooting. ◆ The centre has contact details for specialist technical. | | |
| Centre equipment meets the relevant awarding body's systems specification for delivering e-assessments. | | |
| Signature of supervisor/manager: | | |

A5: E-testing environment checklist

Note: Supporting information about all requirements listed can be found in section 3.3, ‘The e-testing environment’.

| Summary of e-testing environment requirements | Yes/No | Comment/Issues |
|---|--------|----------------|
| Adequate ventilation | | |
| Suitable lighting | | |
| Separate assessment areas available if needed, for example for: <ul style="list-style-type: none"> ◆ special help/facilities ◆ practice assessments suitable chairs ◆ sound output | | |
| Workstation: <ul style="list-style-type: none"> ◆ suitable chairs ◆ adjustable monitors ◆ document holders ◆ footrests (available if requested) ◆ freedom from glare ◆ space for keyboard, mouse and screen ◆ space for papers, materials and equipment ◆ space for rough notes | | |
| Workstation layout: <ul style="list-style-type: none"> ◆ sufficient distance between workstations ◆ partitions provided; or ◆ positioning retains confidentiality (if needed) | | |
| Space/facilities for candidates with disabilities, if applicable | | |
| Workstations/invigilator’s desk positioned well <ul style="list-style-type: none"> ◆ back-up provision: ◆ spare workstations ◆ spares of easily replaced items ◆ back-up server, if applicable | | |
| Signature of supervisor/manager: | | |

A6: Functionality checklist

Print-ready version on the efutures website: www.efutures.org.

| Desirable features for e-portfolios | Priority L/M/H | Yes/No/NA | Comments |
|--|-------------------|-----------|----------|
| 1. Acceptability/suitability of system | | | |
| Has the product you are considering been approved by the awarding body/bodies you wish to work with? | | | |
| Is there an e-portfolio system currently in use elsewhere in your institution? If yes, is it suitable for your e-assessment purposes? If no, what are your reasons for rejecting it? | | | |
| 2. Scope | | | |
| If you wish to use the e-portfolio for other purposes (for example, personal development, diagnostic and/or formative assessment), does the product cater for these additional uses? | | | |
| 3. Accessibility | | | |
| Is the e-portfolio easily accessible by learners, teachers, assessors and verifiers? | | | |
| Can the product be accessed from locations remote from the centre? Can documents/evidence be transferred simply between the relevant users? | | | |
| Is it clear who 'owns' the portfolio? | | | |

| Desirable features for e-portfolios | Priority L/M/H | Yes/No/NA | Comments |
|--|-------------------|-----------|----------|
| 4. Monitoring learner progress Who needs to be able to monitor your candidates' progress? Can a candidate's progress be monitored easily? | | | |
| Is it possible to conduct initial assessment checks online? | | | |
| Can action planning be conducted online with learners? | | | |
| Does the system 'flag' when work is received for review? | | | |
| Can additional courses be selected for learners? | | | |
| Can comments from internal and external assessors be viewed? If so, by whom? Can these comments be protected from amendment? | | | |
| 5. Cross-referencing | | | |
| Is it simple to cross-reference evidence, if this is a prerequisite of the qualifications you are working with? | | | |
| If there is a facility for cross-referencing against criteria: <ul style="list-style-type: none"> ◆ How easy is this to do? ◆ Who can do it? | | | |
| Can one evidence file (with more than one piece of evidence) be cross-referenced to more than one assessment criterion? | | | |

| Desirable features for e-portfolios | Priority L/M/H | Yes/No/NA | Comments |
|---|-------------------|-----------|----------|
| 6. Reports | | | |
| Is there real time reporting from workplace to centre back-end systems? | | | |
| Can learner reporting systems be accessed off-site? | | | |
| Can the system report on credits and qualification achievements? | | | |
| Can the centre customise reports? | | | |
| 6.1 Generic reports | | | |
| <p>Can the system generate the following generic reports? For example:</p> <ul style="list-style-type: none"> ◆ size of assessor's case-load ◆ start and end dates for candidates ◆ time taken to complete unit(s) or qualification (in days) ◆ forms of assessment used ◆ number of candidate registrations per assessor ◆ numbers in receipt of credit for completed units ◆ gender/diversity/equality analysis ◆ report by age of candidates ◆ analysis of candidates against national benchmarks | | | |

| Desirable features for e-portfolios | Priority L/M/H | Yes/No/NA | Comments |
|---|-------------------|-----------|----------|
| 6.2 Assessor reports | | | |
| <p>Can the system generate the following assessor reports (related to individual learner)? For example:</p> <ul style="list-style-type: none"> ◆ contact prior to visit ◆ what has happened on visit ◆ learner progress ◆ whether assessment has taken place ◆ last time learner seen (attendance) ◆ next scheduled visit ◆ contact schedule overview ◆ flag when learner approaching four weeks between contacts | | | |
| 6.3 Employer reports | | | |
| <p>Can the system generate the following employer reports? For example:</p> <ul style="list-style-type: none"> ◆ course target plans ◆ candidate progress ◆ percentage completed in time | | | |
| 7. Audit trails, security and authentication | | | |
| Does the product provide an audit trail? | | | |
| If so, who can access the audit trail? | | | |

| Desirable features for e-portfolios | Priority L/M/H | Yes/No/NA | Comments |
|---|-------------------|-----------|----------|
| Are unique security passwords/IDs provided for each level of user? | | | |
| Are read-only rights provided? | | | |
| Is there provision to show only qualified assessor or internal verifier involvement? | | | |
| Is it possible to electronically store sample signatures/handwriting? | | | |
| Is it possible to 'lock' completed units? | | | |
| Does the product provide a back-up facility in the event of system failure? | | | |
| 8. Ease of use and quality of presentation | | | |
| Is it easy to store: <ul style="list-style-type: none"> ◆ text ◆ sound ◆ scanned images/pictures ◆ video evidence | | | |
| Does the product provide good visual presentation of evidence? | | | |
| Does the product use standardised templates? Are they user friendly? | | | |

| Desirable features for e-portfolios | Priority L/M/H | Yes/No/NA | Comments |
|---|-------------------|-----------|----------|
| Does the product permit customisation for candidates with special requirements? | | | |
| Can the system present different 'views' of information dependent on role (for example, learner, assessor or verifier)? | | | |
| Does the product provide links to other documents/areas, for example, centre policies and procedures and qualification documentation? | | | |
| Can both staff and learners upload evidence? | | | |
| Can CDs be generated from portfolio content? | | | |
| 9. Internal and external assessment | | | |
| Are networked standards available to assessors, to enable easy assignment to students on- and off-site? | | | |
| Are assessors automatically notified when evidence is available for assessment? | | | |
| Can internal/external assessors have access online at any time, with a record of when this takes place? | | | |
| Can assessor access be 'managed', and recorded when it takes place? | | | |
| Can comments from assessors be viewed, with control over who views what data? | | | |
| Can comments be protected from amendment? | | | |

| Desirable features for e-portfolios | Priority L/M/H | Yes/No/NA | Comments |
|--|-------------------|-----------|----------|
| 10. Communications links | | | |
| Can the e-portfolio be integrated with the centre's e-mail system? | | | |
| Can learners have webmail accounts? | | | |
| Can the system link with the centre's VLE or learning management system? | | | |
| Are e-mail contacts and distribution lists for course students produced automatically? | | | |
| Can the system be accessed remotely by designated staff, learners, employers and so on? | | | |
| Is there the facility for staff to use the system offline for assessment or verification purposes? | | | |
| Can PDAs be used for off-site assessment purposes? | | | |
| 11. Archiving and retention | | | |
| Does the supplier meet the regulatory retention requirements? | | | |
| Are archived documents safeguarded against modification? | | | |
| Can a learner access content at a later date/transfer it to another e-portfolio system or location? | | | |
| 12. Induction/training/support | | | |
| Does the supplier provide induction/training programmes for candidates and centre staff in the use of the e-portfolio product? | | | |

| Desirable features for e-portfolios | Priority L/M/H | Yes/No/NA | Comments |
|--|-------------------|-----------|----------|
| Would the supplier be prepared to provide training for awarding body assessors in the operation of the e-portfolio product? | | | |
| What help provision is there? For example: <ul style="list-style-type: none"> ◆ online (differentiated by user role and rights, and contextualised) ◆ e-mail response ◆ telephone support ◆ in-centre technical support (including any geographical limitations) | | | |
| How many people are available to provide this support? | | | |
| What are the response times? (Must have service level agreements.) | | | |
| 13. Reference sites | | | |
| Is the e-portfolio product currently being successfully used by learners, teachers, assessors and verifiers in other organisations? If so, is the supplier able/willing to provide reference sites for you to contact? | | | |
| 14. Other | | | |
| | | | |
| | | | |
| | | | |

A7: Types of e-portfolio

(Source: IMS Global Learning Consortium)

In addition to the usage covered within this guide (using e-portfolios for assessment purposes) there are many other uses to which e-portfolios can be put, including:

Assessment e-portfolios

Demonstrate achievement to some authority by relating evidence within the e-portfolio to performance standards defined by that authority.

Example: A nursing student submits an assessment e-portfolio as evidence of a specific competency requirement.

Presentation e-portfolios

Present an audience with evidence of learning and achievement.

Example: A software engineer creates a presentation e-portfolio that shows relationships between professional certifications she has received, code she has written and employment history.

Learning e-portfolios

Document, guide and advance learning over time.

Example: A student develops a learning e-portfolio that allows him to reflect upon how his technology skills improve over the course of a year.

Personal development e-portfolios

Record learning and performance that can be reflected on, outcomes of that reflection and future development plans.

Working e-portfolios

Combine elements of all the above types and can include multiple views of each.

What items can an e-portfolio contain?

- ◆ digital learning items
- ◆ personal information about the owner(s)
- ◆ competencies of the owner(s)
- ◆ goals
- ◆ activities undertaken or planned
- ◆ achievements
- ◆ accessibility preferences
- ◆ interests and values
- ◆ reflections
- ◆ assertions and comments
- ◆ test and examination results
- ◆ information about activities undertaken and planned
- ◆ information about creation and ownership of portfolio parts
- ◆ relationships between parts of the portfolio
- ◆ dynamically-constructed views and presentations.

A8: Technical issues for e-portfolios

(Source: Becta, 'E-portfolios — Definitions and directions paper')

Connectivity

The model of e-portfolios ... supports many aspects of learning and recording learning. Driving towards flexibility in learning and teaching (through 14–19 reform, personalisation, the extended schools initiative, and the e-strategy) suggests that access to the full functionality of e-portfolios should be equally flexible. It is now much more common for learners (particularly 14+) to learn in multiple locations — for example, in schools, colleges, work-based learning or travelling communities. Not all of these locations have equity of provision to technology, or connectivity. Connectivity should be available through the National Education Network and JANET to provide access to e-portfolios for all communities. The work-based learning environments are a particular issue that will need to be addressed. Otherwise, learners choosing vocational provision may be disadvantaged in their lack of access to a common learning system which their in-school peers enjoy.

Many of the potential uses of an e-portfolio process will require consistent broadband access. Uploading multimedia evidence is already common for those NVQs and Diploma qualifications which use course-based e-portfolios.

Hosting

The pressures placed on a central hosting service to support a lifelong learning portfolio relate mainly to storage space, and the ability to provide a scaleable solution for all learners (potentially all UK residents).

Offering local (institution based) or regional (LEA or RBC based) hosting for portfolios has its own issues. When learners move on to the next stage of their life, or to the next learning provider, does the portfolio remain, and how can the host guarantee access across a lifetime, when all connections with the learner are gone? Or does the portfolio move with them, how and where? How can the e-portfolio be supported and distributed once the learner moves out of the formal education system? Who will provide that support? If the portfolio remains with a host institution or education network, who will provide the funding to manage the portfolio? For example, after 10 years, an LEA could be managing tens of thousands of portfolios requiring considerable storage space every year. These are management issues that may compromise the ideal of a lifelong learning portfolio and that need to be seriously considered.

Authentication

The development of e-portfolios will create more pressure for a swift resolution on the unique learner ID in order to ensure transferability and continuity for a lifelong learning portfolio. Learners using an e-portfolio process will require a single sign-on to access every element of functionality. An alternative solution to the unique learner ID, which may be worthy of further exploration, is the potential of the Shibboleth or similar authentication solution. A single user sign-on would enable e-portfolios to be fully integrated into learning. This sign-on could incorporate a unique learner ID at a later date.

There are, however, some existing issues with the Shibboleth system. For example, access rights could not be dynamically allowed for supply teachers. Similarly, if a learner wished to give a potential employer access to parts of their portfolio, the current Shibboleth system would prevent them from doing so unless that employer was a member of the Shibboleth foundation.

Authentication is likely to be one area in which accessibility is key — if you can't authenticate, you can't access provision. As Shibboleth uses the institution's existing log-in system, if that system is not accessible, no services or applications using Shibboleth will be. Personal assistive technologies are regarded by industry as non-standard and are susceptible to lock-out by security measures (the RM work on accessibility and e-assessment for QCA in respect of key stage 3 ICT assessment concluded that assistive technologies can only be facilitated by by-passing security procedures. Is that an acceptable risk?).

Browser-based authentication to date has tended to centre around fixed media/format entry/output and this is inflexible/inaccessible, eg online banking which requires use of the mouse to manipulate number scrollers, dynamic security code generation 'type in the number from the graphic above' — all have proved largely unsatisfactory for one or more groups of assistive technology users.

Accessibility

There is currently little guidance in relation to accessibility of e-media other than for content. This needs to be remedied before decisions are made to implement online learning spaces or e-portfolios or any other large scale initiative which changes the learning environment. Equity of access is key.

Technical standards and interoperability

We acknowledge that there are many systems currently in use in education that adequately offer elements of the e-portfolio process. We recommend that the implementation of e-portfolios across education should incorporate these existing systems.

However, all elements of the system must be interoperable. Whatever their provenance, systems need to be able either to export directly in a common agreed format to required specifications, or to be able to provide a two-way 'translation' service (proprietary format into a common agreed format and vice versa).

Technical standards that will have an impact on elements of e-portfolio functionality are developing. UKLeaP and IMS e-portfolio are clearly important here. Other areas are worth exploration — for example, SIF (the US Schools Interoperability Framework) — middleware which defines standards for data exchange and rules for inter-application interaction, enabling for example, an MIS system and a VLE from different suppliers to interact.

