TAADES503B Research and design e-learning resources

Modification History
Not applicable.

Unit Descriptor
This unit specifies the competency required to research the requirements for e-learning resources and to design resources based on that research.

Application of the Unit
Learning resources are designed to enhance and support the effectiveness of the learning process. They provide guidance, materials, learning and assessment activities, and relevant information that address the competencies/learning outcomes to be achieved by the learner. An e-learning resource is any learning resource that is assisted by information and communication technology. This includes but is not limited to web-based and computer-based learning resources, virtual re-creations of vocational contexts, digital collaboration, Internet, Intranet, Extranet, interactive CD-ROM, hand-held computers and satellite broadcast. E-learning resources are used to support e-based learning or blended delivery and may be used in conjunction with print-based or other learning resources. The complexity of the e-resource will vary depending on its focus, type and audience. The emphasis is on the clarity and structure of the learning resource and how the technology supports this, not the technology itself.

This unit focuses on the e-product design. Development of the e-learning resource is addressed separately in TAADES504B Develop and evaluate e-learning resources. Separate competency standards have been developed because these two functions are often undertaken separately and by different team members. Where competency is required across both the design and development phase co-learning and co-assessment is recommended. TAADES503B Research and design e-learning resources and TAADES504B Develop and evaluate e-learning resources are also closely linked with TAADES502B Design and develop learning resources, which focuses on print-based learning resources. Some outcomes and performance requirements of this unit are duplicated in TAADES502B but the overall competency is differentiated by the technological skills and knowledge that are applied and integral to performance. It is recommended that individuals undertake TAADES502B before commencing TAADES503B or TAADES504B.

The competency specified in this unit is typically required by instructional designers, learning product developers, trainers/facilitators and training consultants.

Licensing/Regulatory Information
Not applicable.
Pre-Requisites
Not applicable.

Employability Skills Information
This unit contains employability skills.

Elements and Performance Criteria Pre-Content
Elements describe the essential outcomes of a unit of competency. Performance criteria describe the performance needed to demonstrate achievement of the element. Where **bold italicised** text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

<table>
<thead>
<tr>
<th>Element</th>
<th>Performance Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Research and interpret the e-learning resource requirements</td>
<td>1.1 The <strong>brief, focus</strong> and <strong>type of e-learning resource</strong> is clarified with the client</td>
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<td></td>
<td>1.2 The <strong>likely target audience/s</strong> and the <strong>e-learning environment</strong> is <strong>researched</strong></td>
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<td></td>
<td>1.3 The <strong>characteristics of the learners/end users</strong> are identified and their suitability for e-learning is evaluated</td>
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<td>1.4 <strong>Existing information</strong> which may be relevant is investigated and analysed</td>
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<td></td>
<td>1.5 Training Package and/or <strong>other relevant criteria</strong> are read, interpreted and analysed to determine suitability for e-learning delivery and assessment solutions and the outcomes of this analysis is clarified with the client</td>
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<tr>
<td></td>
<td>1.6 <strong>Ethical and legal considerations</strong> are identified and acted upon</td>
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</tbody>
</table>
2 Generate options for e-learning resource

2.1 Standards and guidelines relevant to the design and development of e-learning resources are identified and clarified

2.2 Competency standards or other relevant criteria are interpreted to generate and conceptualise design ideas in conjunction with other people

2.3 Principles of instructional design, other design techniques and learning theory are applied in proposing and selecting suitable ideas for the e-learning resource

2.4 Possible constraints are identified and considered in developing design options

2.5 Materials for the trainer/facilitator are identified and documented

2.6 A preferred design concept is selected and justified as meeting the client requirements

3 Create the design concept

3.1 Critical feedback is sought from relevant persons and is interpreted to modify and improve the design concept, as required

3.2 Collaborative arrangements to finalise the design concept are established, where appropriate

3.3 Sample content is developed which reflects the demonstrated application of e-learning instructional design principles and contains appropriate e-learning activities

3.4 The design demonstrates flexibility of application with contingency pathways integrated and described in the concept

3.5 Learner, trainer/facilitator support mechanisms are built into the design

3.6 A representation of the e-learning resource is created

4 Finalise the e-learning design concept

4.1 The design concept is reviewed in conjunction with relevant persons

4.2 The review process addresses relevant criteria to ensure relevance to the product and learner needs
4.3 The design concept is adjusted where required and finalised

4.4 The design concept is approved by the client

Required Skills and Knowledge

Not applicable.
Evidence Guide

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of Assessment

To demonstrate competency against this unit candidates must be able to provide evidence that they can research and design a e-learning resources that address the competency standards to be achieved (or learning outcomes derived from the competency standards), and that reflect the application of instructional design principles and other relevant principles, standards and guidelines in conceptualising the design.

The e-learning resource must meet the needs of the client and end user, be creative, easy to navigate and suitable for the learning content and the target audience. Collaboration with others in creating and finalising the design must be demonstrated.

Evidence Requirements

**Required knowledge includes:**

- language, literacy and numeracy appropriate for the learner group
- cultural and educational background of the learners
- design features which facilitate access to e-learning by range of likely user groups, for example:
  - people with a hearing impairment
  - those with language, literacy and numeracy needs
- IT principles, for example:
  - Internet technology capabilities
  - e-learning methodologies and vocabulary
- how to create an effective learning experience using electronic technology, e.g.
  - using:
    - multiple perspectives
    - opportunities for reflection
opportunities for collaborative learning
authentic assessment
incremental learning
variety
organisation
best practice design

a range of e-learning environments and their application in designing e-learning resources
differences in e-learning mode versus face-to-face mode, for example:
ways of communicating electronically versus face-to-face for the learner and deliverer
electronic terms and new language that makes reference to specific functions of e-learning
ways of sharing information and collaborating electronically that differ from face-to-face learning

instructional design for electronic materials, for example:
systematic instructional strategies
learning design principles
criterion-referenced test items
order of increasing difficulty
opportunities for review of material and repetition
the need for interactivity
inclusion of a variety of approaches and techniques for presenting information and activities
structure of the information
what happens if the learner makes a mistake
how to get help
techniques to hold the user's attention
project management, for example:
time management
team management
meeting budgets
administration

relevant policy, legislation, codes of practice and national standards including Commonwealth and state/territory legislation, for example:
design of e-learning resources to meet worldwide accessibility and usability guidelines
copyright and privacy laws relating to electronic technology
security of information
plagiarism
competency standards
licensing
industry/workplace requirements
duty of care under common law
anti-discrimination including equal opportunity, racial vilification and disability discrimination
workplace relations
industrial awards/enterprise agreements
OHS relating to the work role, and OHS considerations to include in the design of the e-learning resource
OHS obligations of the training and/or assessment organisation, the trainer/facilitator and learner
Required skills and attributes include:

- representing an e-learning design in a variety of ways, for example:
- describing the learner's pathway through a program to a designer
- writing the e-learning pathways in a report
- describing the e-learning pathways in a sketch or drawing
- referring to examples of other e-learning products with similar attributes to the desired online outcome

- learning, using and understanding electronic technology
- anticipating or predicting risks and plan contingencies
- ability to design e-learning resources in alignment with AQTF requirements e.g. if designing resources to support Training Packages

- collaboration skills to:
  - work with vendors and consultants
  - share ideas and information
  - seek feedback on the e-learning design

- research skills to:
  - determine the suitability of the learning content for electronic development
  - identify constraints, resources, standards and guidelines required to design and develop e-learning resources
  - generate options for the e-learning resource

- communication skills to:
  - negotiate
  - solve problems
  - listen to others
  - adjust personal use of technical language to meet others level of understanding
Products that could be used as evidence include:
- a design plan
- documentation of ideas generated
- documentation of briefs developed
- consultations and collaboration with others
- feedback from clients/learners
- demonstration web site
- CD-ROM

Processes that could be used as evidence include:
- description of the final e-learning resource
- how learning outcomes were addressed in the design and why
- how instructional design principles were maintained
- how evidence gathering opportunities were incorporated and why

Resource implications for assessment include:
- computer system and other technology
- support personnel

The collection of quality evidence requires that:
- assessment must address the scope of this unit and reflect all components of the unit i.e. the Elements, Performance Criteria, Range Statement, Evidence Guide, Employability Skills
- a range of appropriate assessment methods/evidence gathering techniques is used to determine competency
- evidence must be gathered in the workplace whenever possible. Where no workplace is available, a simulated workplace must be provided
- the evidence collected must relate to a number of performances assessed at different points in time and in a learning and assessment pathway these must be separated by further learning and practice
- assessment meets the rules of evidence
- a judgement of competency should only be made when the assessor is confident that the required outcomes of the unit have been achieved and that consistent performance has
Specific evidence requirements must include:

- a minimum of one completed design concept for an e-learning resource which reflects the outcomes and performance requirements of the unit and which demonstrates application of the specified knowledge and skills required to demonstrate the performance requirements.

Integrated assessment means that:

- this unit can be assessed alone or as part of an integrated assessment activity involving relevant units in the TAA04 Training and Assessment Training Package. Suggested units include but are not limited to:
  - TAADES504B Develop and evaluate e-learning resources
  - TAATAS503B Manage contracted work.
Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. **Bold italicised** wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

**The brief may include:**
- client proposal
- identified gap in the learning product market
- a tender
- an organisational need

**Focus may include:**
- a Training Package
- a Training Package qualification/qualifications
- a traineeship/apprenticeship qualification
- an accredited course
- individual competency standards/modules/subjects
- a non-accredited course
- a learning program
- a learning resource to support introduction/implementation of new technology/equipment
**Type of e-learning resourcema**y include: Training Package toolboxes
assessment materials
trainer/facilitator materials
learner materials
professional development materials
genetic skills materials
industry/enterprise specific materials
self-paced or instructor-led materials

**Likely target audience/sm**ust include: who the learning resource is for
what the learning resource is designed to do
why an e-learning medium is being considered
how the learning resource will be used
where learning resource will be used

**The e-learning environmentm**ay be: web-based
computer-based
digital collaboration
virtual environment
Internet/Intranet/Extranet
satellite broadcast
a combination of these environments
operate through learning or content management systems/platforms, for example:
WebCT
Blackboard
Janison Toolbox

**Researchedmay include:**
Internet research
questionnaires
evaluations of existing products
literature reviews
informal discussions
focus groups
workshops

**Characteristics of the learners/ end users** may include:

- level of prior experience/knowledge of content area
- skill/competency profile
- technical skills in operating in an e-environment
- access to the type of computer required for e-learning
- range and response to previous learning experiences
- level of education
- socio-economic background, age, gender
- current work
- work culture
- cultural or ethnic background
- disability or learning support needs
- preferred learning styles
- motivation for learning
- English language, literacy and numeracy needs
Existing information may include:

- industry/end user needs
- industry best practice and culture
- existing relevant learning and e-learning resources and materials
- relevant Training Packages/competency standards
- relevant courses, curriculum, modules
- workplace procedures, documentation, and requirements
- industry coverage
- roles and responsibilities of groups and individuals
- information from industry experts and advisers

Other relevant criteria may include:

- learning/assessment strategy
- learning outcomes of curriculums
- accreditation requirements
- curriculum design
- occupational health and safety (OHS) implications for delivering the learning strategy

Ethical and legal considerations may include:

- contract preparation
- meeting contractual requirements
- intellectual property
- regulatory requirements including OHS
- organisational requirements
- equity issues and needs
- potential legal consequences of false, misleading or incorrect information

Standards and guidelines may include:

- Guidelines for Toolbox Learning Materials
- DEST Guidelines for Training Package Support Materials
- Training Package competency standards
- Preferred Standards to Support Cooperation in Applying Technology to Vocational Education and Training
Web Accessibility Guidelines for content from the World Wide Web Consortium (interoperability)

requirements under the Australian Quality Training Framework (AQTF) for access and equity

legislative requirements relating to:

disability discrimination

equal opportunity

sexual discrimination

Other people may include:

colleagues/team members

the client

staff of Industry Skills Councils/advisory bodies

supervisors/coordinators

project reference groups

technical specialists

Instructional design principles may include:

the need for learner-centred activities and interactivity

the need for collaborative learning opportunities

the need for authenticity in learning and assessment activities

presenting material in a logical order and sequence and in order of increasing difficulty

opportunities for review of material and repetition

inclusion of a variety of approaches and techniques for presenting information and activities and for encouraging participation by learning

structure of the information

ensure learning is embedded in a realistic and relevant context

what happens if the learner makes a mistake
how to get help techniques to engage the learner in learning

Other design techniques may include:
- creative thinking, for example:
  - brainstorming
  - mind mapping
  - scenario setting
  - lateral thinking

- visual/graphic design, for example:
  - format
  - composition
  - balance
  - typography
  - images/graphics
  - charts/diagrams

Learning theory may include:
- cognitive learning theory
- behavioural learning theory
- information processing theory
- andragogy
- problem-based learning

Constraints may include:
- limits of the technology and what types of things it can do
- financial limitations to achieve proposed options
- low levels of information technology (IT) skills of trainers/facilitators and intended learners/end users
- anticipated difficulties due to language, literacy and numeracy skills of learners/end users
- limited access of intended learners/end users to the necessary technology
- logistical issues
- access to relevant technical/subject matter
excerts

**Materials may include:**
- trainer/facilitator guide
- technical guide
- guide to using the learning resource

**Critical feedback may be from:**
- instructional designers
- graphic designers
- information technology experts
- intended learners/end users
- communication experts
- audio-visual experts
- language, literacy and numeracy specialists
- programmers
- IT help desk personnel
- the client
- project stakeholders
- members of the reference group
- critical friends
Appropriate e-learning activities may include:
tutorials
quizzes
case studies
images
audio
problems
interviews
projects
tasks
web-based role-play
e-games for learning
simulation
checklists
online discussions
work-based practice activities

Learner, trainer/facilitator support mechanisms may include:
telephone hotline for technical support
e-mail facilities
regular learner contact with trainer/facilitator or tutor
opportunities for feedback
instructions
orientation/induction
schedules
procedures

A representation of the e-learning resource may be:
proof of concept
web site shell
diagrammatical representation
sketches
samples of other similar e-learning products
product brief
storyboard, for example:
PowerPoint presentation
html or handwritten show board
Relevant criteria may include:

- Benchmarks/learning outcomes are achievable through e-learning
- Design is relevant to targeted learners
- Design is easy to navigate/use
- Design encourages participation and engagement
- Design motivates and provides effective learning resources
- Design provides opportunities for learner reflection and collaboration
- Design meets needs of client

Unit Sector(s)

Not applicable.

Competency Field

Learning Design